NEW SCHOOLS OF THOUGHT

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New Schools of Thought
Critical Thinking and Creative Teaching

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Amps

INTRODUCTION

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21st century education has changed beyond all recognition. Virtual teaching, flipped classrooms, AI, ungrading, collective syllabi and the teacher as learner are concepts that, for many traditionalists, are foreign terrain. The issues at play are multiple, varied and often polemic. In some instances, it results in calls for a 'return' to what is tried and trusted – tests, grades and rote learning. In others, there are calls for more creative, critical and 'evolved' approaches – further pushing the boundaries of how we conceive knowledge and its application. In short, there are calls for ever newer schools of thought.

This scenario applies across disciplines: in the design fields of architecture and graphics. In the fields of art and design. In the STEM sector and the social sciences. In the disparate fields of health and business, or media and the creative industries. Despite the conflicting opinions at play, every discipline is seeing more inclusive pedagogy, inverted classrooms and an ever increasing emphasis on student agency. In this context, we have no choice but to assess how we think about school.

Central to this process is critical thinking. How do students learn to be critical – and what does it mean to be critical of teaching? Are the methods we use to communicate knowledge relevant today? Do they engage the modern student, visual learners and the social media generation? While communication is a celebrated core skill in the humanities, and representation is central to disciplinary practice in the arts and design, communication and representation methods in teaching – our modes of delivery – still often go unexamined.

Aiming to explore these broad and interrelated issues, the papers brought together in this publication are split into two volumes. The first examines a cross disciplinary teaching perspective, while the second focuses on design. Together, they help us better understand the new, emerging, evolving and established schools of thought in contemporary education.

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THINKING THROUGH PRACTICE: APPLIED DESIGN INFORMING REAL-WORLD EXPERIENTIAL PEDAGOGY

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INTRODUCTION

The UK education sector is in crisis with robust evidence for the ongoing regression of skills in arts and design education, the related decline of crafts emphasising long-term trajectory.[1] Sternberg, Kumar and Robinson all discuss the negative impact of an increasing test culture within education where academic hierarchy devalues vocational learning, especially creative subjects. This is decimating the Further and Higher Education environments, both experiencing heavy year on year regression in student numbers studying creative subjects. The regression in arts and humanities-based subjects within schools over the past decade is undeniable, with a 40% decrease in key stage 4 students taking exams in the arts, design technology and music at GCSE level.[2] The same subjects studied at GCE A-Level are equally sobering, despite an increase of 5-15% from 2021 to 2022; in reality, within the past decade numbers have dropped by 44%. The negative impact of these figures on adult education, not simply reduced numbers but regression in creative, technical and practical skills, accentuates the relevance and importance of this research study. Within and beyond the arts the 'how, why', and 'what' questions of teaching and learning present challenges.

However, interdisciplinarity between specialisms, in line with how the professional sector is evolving, provides hope and opportunity. An increasing trend of collaboration between the arts/social sciences/humanities with health and environment/science and engineering is fostering growth in applied studies; an example being the undergraduate BASc diplomas. Real-world experience with stakeholders prepares students for contemporary careers and research; teaching, learning and assessment employing applied mixed methods informed by creativity and collaboration. This is not a completely new construct as the foundation of modern education is built on collaboration between the arts, sciences and industry.[3]

"There need be no conflict between knowledge and creativity in our education system. Indeed, the opposite is the case – creativity is founded on deep understanding. Every meaningful creative breakthrough in human history has been made by people with deep expertise, immersing themselves in the practices and problems of the field and finding new ways to see, act or behave".[4]

The statement above celebrates the historic quality of creativity within Western education systems, whilst conveying widespread concern over the lack of balance in current policy. The Durham Commission on Creativity and Education included representatives from arts, education, science and industry chronicling how and why creative practice is an essential part of every learning journey.[5]

Despite focusing on state education, the Durham report raises concerns applicable to the FE and HE environments soliciting what Sternberg refers to as 'inert intelligence' due to a lack of applied learning.[6] These problems suggest an urgent need to investigate the pedagogic/creative philosophies and associated intellectual merits of creative thinking such as practicing craft skills. This paper analyses the records of practice for eleven professional creatives contributing to the Maker Project research.[7] Commonly disregarded as tacit knowledge unspoken within the realms of creative process, both the philosophical and physical interactions undertaking the project inform a pedagogical paradigm accessible and transferable to wider subject areas throughout education.

METHODOLOGY

This research embraces the philosophy of pragmatism, as pioneered by Charles Sanders Peirce, William James, and John Dewey.[8] Both Pragmatist philosophers and crafts-workers are concerned with adaptation and transformation, be it of ideas or materials. "Pragmatists put themselves in the position of an enquirer adapting himself to and helping to modify a changing world".[9] As both practitioner and educator with thirty years' experience, for this project I adopted a dualist positionality but apolitical standpoint. Contributing to doctoral research exploring the importance of creativity and skills acquisition within education and society, this paper addresses the following aims and questions.
Aims:
i.To examine how skills employed within the specialist areas of craft and applied design inform both thought and process with potential transferability to other specialist fields of study;
ii.To emphasise the value of experiential learning environments, examining how this can be applied within pedagogic practices.
Questions:
1. How can contemporary craft practice inform teaching and learning?
2. How can skills identified within the Maker Project inform pragmatic pedagogic activities in a transferable and enriching manner?
Designing the Maker Project elicited an ethnographic, heuristic study employing mixed methods including artist profiles, photo/video diaries, reflective journals, semi-structured interviews, and public survey. Portfolio evidence of the practice research provides not only a wealth of qualitative and supporting quantitative data but equally, an educational resource accessible to students, educators and policymakers; available to view at: https://www.makerproject-thinkingthroughpractice.org/.

The Participants

Advertised nationally through regional crafts networks, including the Crafts Council, ten specialist makers were selected for the Maker Project by an independent panel; spanning ceramics, cordwaining, furniture, jewellery, textiles and wood craft. A sponsored exhibition stand at the 2018 and subsequent 2019 Great Northern Contemporary Craft Fair permitted me to test my own project, producing a sample work to promote the Maker Project to other exhibiting and visiting makers. Employing combinations of applied and digital processes informed project direction. Analysis of this research elicited reflection on prior knowledge and experience, revisiting processes practiced earlier in my maker career. My designer instinct aimed the piece to remain a functional item of furniture true to its original design, but the craftsperson equally favoured experimenting with alternative materials, processes, and finishes juxtaposed to the original piece. Later qualitative data generated from the maker interviews highlighted similar conflicting thoughts throughout the group as how to approach the project, demonstrating the stimulation of divergent thinking through hands on experience.[10]

1) Sharon Adams with 'Stack'

2) Sadie Blythin with 'Concept jewellery'

3) Jeremy Bonner with 'Manchester Love seat'

4) Deborah Carré with 'Carré x Cox'

5) Ali Holloway with 'Chair'

6) Peter Howcroft with 'Workbench Seat'

7) Krystina Pomeroy & Rachael Singleton with 'Please be seated'

8) Ian Rylatt with 'I wanna hear it again'

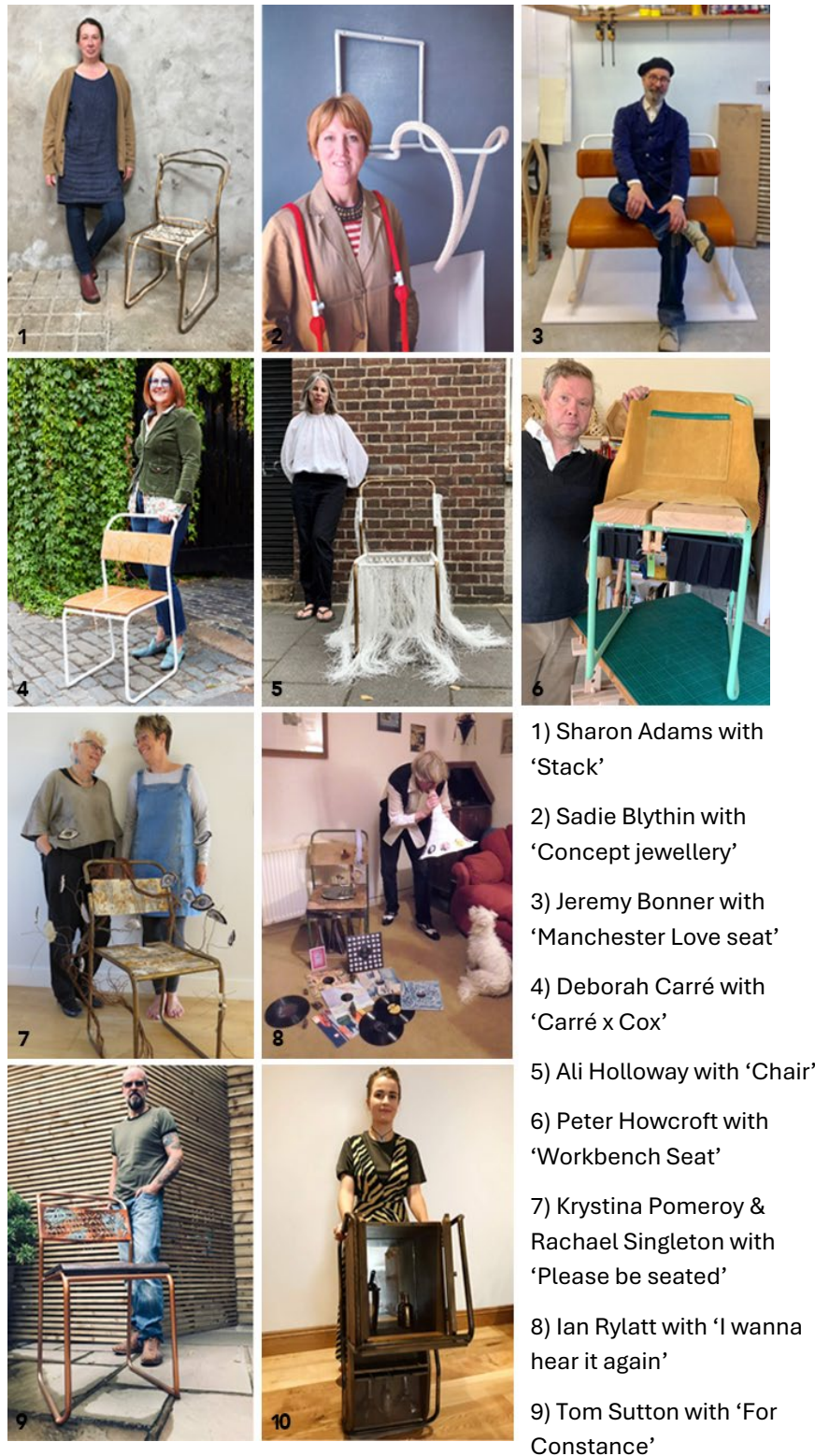9) Tom Sutton with 'For Constance'

Figure 1 The Maker Project participants with outcomes (2019)

Employing and building on Kolb's Experiential Learning Cycle [ELC]

The wealth of qualitative data generated from the Maker Project clearly demonstrated each maker applying knowledge through practical skills with informed proficiency. Finding a framework which could bring order and categorisation to such a wide array of material was challenging as the map will never be as rich as the territory. However, a degree of clarity was achieved without sacrificing too much detail by adopting Kolb's experiential learning cycle as a paradigm for analysis. Each maker's account of their creative experiences is gained through dialectically related modes of Abstract Conceptualisation [AC] and Concrete Experience [CE] then subsequently transforming experience via Reflective Observation [RO] and Active Experimentation [AE].[11] All contributors evidenced engagement across the four modes. From the eleven makers, myself included, there was a clear distinction between those who demonstrated a balanced consideration towards all modes; with some favoring AC and AE, and others CE and RO. This difference in approach could be attributed to those creating functional outcomes, retaining existing value or introducing new utilitarian value, and those identified as more conceptually driven. It must be noted; this was not an exclusive factor in all cases.

Figure 2 illustrates a shared percentage of makers whose philosophy towards the project demonstrates equal consideration towards concept and process (35%) and those where process informs practice (35%). The first demonstrates equal employment of all four modes of Kolb's experiential learning cycle: the second where process predominantly informs concept, CE and RO take precedence over AC and AE. Here the makers draw upon underpinned knowledge, prior experience and skill to subsequently stimulate both abstract thought and experimental enquiry; supporting the first question how knowledge and skill teaches, in this case the maker, potential for transferable application. In contrast, those makers where concept informs process (30%) AC and AE instruct CE and RO; demonstrating a more experimental approach to the project. Employing process and material in a less prescribed method, this group demonstrates a stronger willingness to take risks whilst similarly promoting transferability of craft skills.

As mentioned, this tendency is not common to all participants with occurrences adopting a conceptual philosophy yet employing considered and skilled practice experimenting with material and process underpinned by prior knowledge; aligned to how an engineer operates. For some, embracing traditional time-tested methods of making, additional learning via physical workshops and online tutorials informs further enquiry.[12] Here the intellectual gain is linked to the intrinsic value of making a combination of research and guided instruction stimulating experimental enquiry.[13] This responds to both research questions where the makers demonstrate autonomy in applying knowledge, seeking deeper learning, including combining different craft practices.[14]
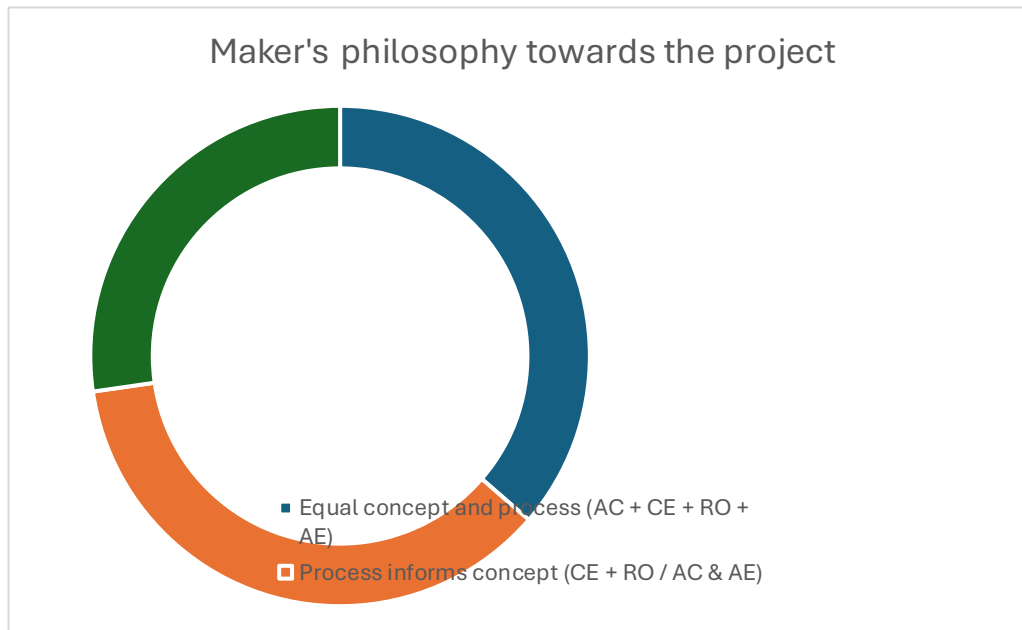
Figure 2. Maker philosophy and demonstration of Kolb experiential learning cycle

This practice-led approach lends itself to Beard's philosophy, the maker becoming an architect of experiential learning design, their underpinning knowledge and willingness to embrace non-traditional methods stimulating new approaches to problem-solving and creative solutions. "Some designers focus more on solution conjecturing, using generative rather than deductive reasoning in problem analysis, so problems and solutions co-evolve at the same time".[15] Referencing Dewey, Beard proclaims that experience-based education is more "strenuous and difficult"[16] but places the student at the center of the learning; opportunity for all levels of education to move towards a more progressive model of teaching, learning, and assessment.[17] Intellectual gain is clearly documented within the journals and accompanying photo/video diaries through these real-world experience in which the learner retains full control and responsibility. The qualitative data also highlights wider considerations towards reflective experience, not fully factored into Kolb's ELC. The theoretical model, like all theoretical models, requiring further crafting and modifications.

EVOLUTION OF THE EXPERIENTIAL LEARNING ORBICULAR – LOGICAL AND HOLISTIC

Despite being considered too simplistic by some critics, Kolb's ELC provided a workable model for the purpose of this research project, with the principle of Beard's holistic paradigm supporting the introduction of an additional mode. Within the research project both 'sensory perception' and 'emotive response' were recurring elements of the qualitative data and attributed to a mode of 'reflective experience'. Kolb includes reflective observation within the mode of transforming experience but with a focus on the present, whereas introducing the mode reflective experience provides a more far-reaching division capturing long-term knowledge such as ancestral learning.[18] Sternberg's 1996 theory that creative thinking should be considered three-dimensional provided inspiration for this hybrid paradigm which continues to promote multi-directional modelling, echoing the principles of Deleuzian rhizome.[19] In working with a spherical structure, the being (student/researcher/apprentice) is centrally placed at the core immersed by all learning experience(s) surrounding them.
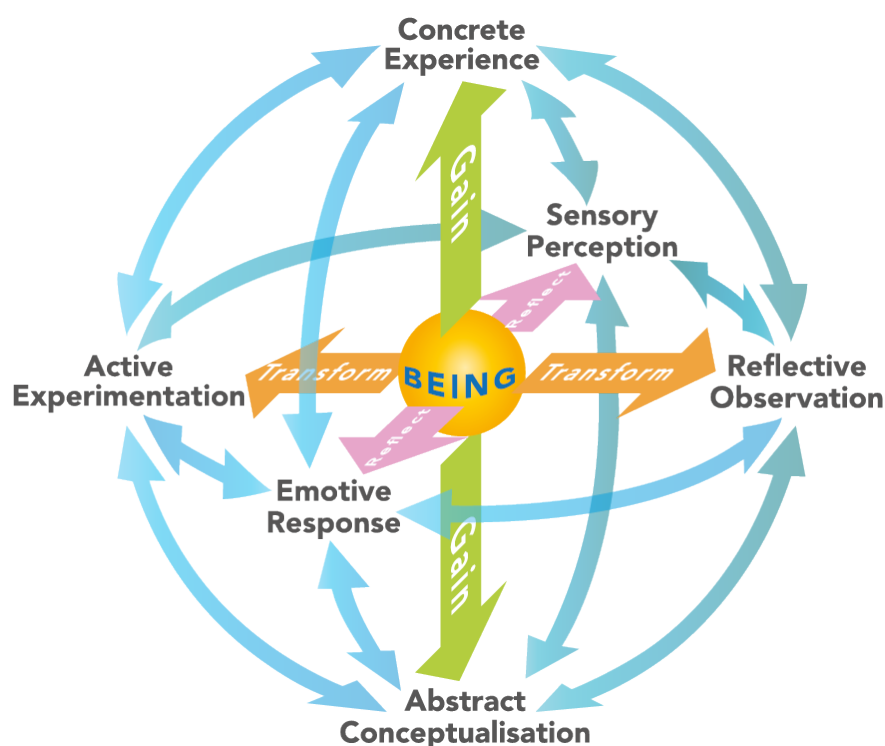
Figure 3. Experiential Learning Orbicular (Sutton, 2023)

Creating a hybridised paradigm provides six dialectical modes including the additional Reflecting Experience: Emotive Response [ER] and Sensory Perception [SP]. Upholding cognitive value by undertaking naturalised epistemological enquiry, it permits both pragmatism towards investigation whilst supporting interpretive phenomenological analysis of the makers contextual and creative contributions.[20] This revised model avoids an idealist analysis of perception and knowledge in relation to the project. Irrespective of one's commitment to any ontology of the self at its core, the extra dimensions of description for experience provide a useful compass for how learning actually occurs.

Both Kolb and Beard present valuable and workable paradigms which advocate the importance of experiential learning; with Kolb a global contributor to postgraduate teacher training curricular and Beard an internationally recognised Professor of experiential learning. Both have informed the evolution of the Experiential Learning Orbicular, with Moon underpinning the value in deeper learning.[21] This model recognizes and addresses the limitations associated with its predecessors despite their validity. Kolb's focus on logic presents a simplistic model which although accessible doesn't accommodate wider values of experiential learning. Beard addresses these omissions, championing holistic experience drawing upon ontology and metaphysics informing learning but, despite its effectiveness, this model could be considered too abstract within mainstream education. The ELO paradigm presents a pragmatic alternative which is accessible and well-structured, embracing deeper learning by acknowledging the value of emotive response and sensory perception. These are aligned with but not exclusive to tacit knowledge and ancestral learning, neither of which are recognised in formal education environments, so introducing an inclusive paradigm of this nature is both poignant and valuable.

Reflecting experience – emotive response, and sensory perception informing embodied cognition

Throughout the project the makers acted largely upon intuitive association and memory, familiarity with material, process, or the chair frame itself stimulating emotive response. For many there were strong associations with childhood embracing prior learning but equally non-learning experiences throughout life. In two unrelated cases this was stimulated as the result of prior neuro-trauma, heightening appreciation to recall lost memories.[22] For some the project became a celebration of lifelong experiences capturing ancestral heritage, childhood and education whilst informed by professional identity, reflecting on experience and issues of core subjectivity, his 'being in the world'.[23] The makers contributions epitomizing the first aim of this research by clearly demonstrating how craft and design skills inform thought and process, despite within a specialist field, offering potential for transferability.

Collaboration and Co-creation as Pedagogic Method

The value of collaboration is equally demonstrated within this research, the journals revealing much about environment, co-creation and emotional response as pedagogic method.[24] Collaboration becomes a common creative language, fluently sharing and discussing concepts whilst experimenting with processes. Emotive response is integral within this relationship, with collaborating makers relying on a high degree of trust. Responding to others experimentation and analysis emulates scientific method, each contributing knowledge and skills to the collaboration. This co-creative enquiry elicits peer learning providing a question or challenge to address, supporting Beard's theory 'let the learners do the learning', avoiding prescriptive tasks, instead stimulating autonomous teaching and learning methods.[25]

Environment also changes experience with makers acting as both master and student, lending knowledge and skill. This is reflective of the maker movement which brings members from arts, science and engineering together as a collective learning community.[26] Growing popularity as educational method within Finland, this highlights the potential value in experiential learning environments employing applied pedagogic practices.

CONCLUSION

Analysing the qualitative data commonalities within both concept and process present themselves. Similarities in method and approach between makers transfers readily across disciplines, including beyond the arts. These present valuable opportunities for knowledge exchange, applicable to all education environments both formal and informal.[27] Existing evidence within the wider specialist fields supports the transferable value of craft practice, seen in engineering and construction, but increasingly areas such as experimental archaeology, and clinical medical science.[28] Roger Kneebone, Professor of Surgical Education and Engagement Science at Imperial College London, advocates surgical students practising craft processes including pottery and needlework to strengthen fine motor skills, a pragmatic response to the negative impact the regression of creative education has played.[29] This research echoes the value and poignancy of introducing the Experiential Learning Orbicular which presents a flexible and versatile paradigm adaptable to wide-ranging education environments. Offering transferability across fields, the research proves craft skills and creativity are human skills not exclusive to the arts, which are applicable to everyone in some manner. Creative/craft skills may manifest themselves in many guises whether medical science, law, engineering and technology, etc.; essentially the experts within these fields' masters of their craft. This comprehensive research project has increased knowledge and understanding for both the theory and practice of craft. It has provided

deeper knowledge – though often, sobering knowledge – of the scale of regression of creativity in all levels of UK education. Having worked as both a professional designer-maker and educator for over thirty years, I appreciate the intellectual value of allowing the mind to wander and the importance of playing around with both process and material.[30] The looseness of such activities condemning their near total expulsion from our educational institutions. A large body of reports articulate the negative impact this is having on society and the professional environment.[31]

The Maker Project justifies the need for similar projects aimed towards wide-ranging subjects within different education sectors, appreciating the value of knowledge gained from their own and each other's shared experiences. The qualitative data analysed provided a synopsis of each maker's experience, creative first-hand responses to the task, principally subjective accounts. Yet they present intelligible and valuable details which would commonly be dismissed or entirely overlooked by any objective observers. This reaffirms the importance in creating opportunities for reflective practice-groups within all education environments, enabling community-led peer learning and collaboration as common practice. The ELO paradigm analysing the thoughts and processes of creative professionals provides a foundation for further enquiry. Whatever the educational environment, the ELO provides the fundamentals of experiential learning with extended consideration towards reflective experience as pedagogic method.[32] The professional makers within this study, although disciplined in the principles of creative practice, demonstrate how influences and personal experiences in early life gained beyond the classroom still contribute to intellectual gain. Most importantly, when practised in combination with formal educational environments, applied intellect elicits lifelong learning and skills development, serving increased value as professional identity evolves.

Despite valuing the transferable potential of creative craft skills demonstrated within the group, these are not intended as didactic scripture towards particular educational environments as this would serve only to undermine the principles of experiential learning. The key pedagogic deliverables from this research are collaboration and co-creation, creative thinking and embodied cognition, sensory perception and emotive response, which are all applicable to educational environments. Simply presenting students across extensive subject areas with a question, challenge or task to problem-solve, can evoke these key principles to be explored through hands-on experience. In the longer term, delivering a balanced academic and skills-based education within schools employing the ELO paradigm could foster increased creative thinking, penultimately strengthening progressive adult experiential learning-based education. This is where greater communication and collaboration between schools, colleges and universities is essential to ensure a robust education that is long-serving and applicable to a progressive society.[33]

Practically testing the value of creative thinking and skills acquisition is at the heart of this study, the findings a foundation for further enquiry and collaborative projects.[34] Positive peer review provides hope this research will contribute further to this important field of study. This includes further exploration of the intrinsic relationship between creativity, haptic experiences, embodied cognition and skills acquisition as a means to stimulate lifelong learning.

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EXPLORING MEMES AS PEDAGOGICAL INSTRUMENTS FOR DECOLONIAL DISCOURSE IN ART & DESIGN

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INTRODUCTION

This paper explores decoloniality as both a pedagogical and creative practice, drawing on our experience teaching Cardiff School of Art & Design (CSAD) students to become decolonial creative practitioners through internet memes. Our interdisciplinary teaching practice aims to develop students as agents of change—critical thinkers capable of disrupting dominant narratives and engaging with diverse perspectives.

Through a cross-school module, we employed dialectical teaching, decolonial methods, and creative practice to foster academic debate around race, politics, gender, and sexuality. By creating a safe space for these discussions, we supported students in developing their own critical positions and empathy toward a global community.

Students were equipped with decolonial methods and resources to carry into both their academic and creative work. Our collaborative approach demonstrates that, while challenging, this work is possible with the right allies.

This paper reflects on our experience and offers a framework to help educators integrate decolonial thinking into their teaching, challenging the existing canon.

Educational Context

CSAD offers an interdisciplinary learning experience, where nearly two-thirds of students' education occurs through cross-school modules that foster interdisciplinary understanding.[1] A key component of this approach is authentic learning—engaging with real-world contexts, applying knowledge across disciplines, and encouraging collaboration, reflection, and diverse perspectives.[2] Interdisciplinary education cultivates cognitive skills that help students navigate complex, real-world issues beyond a single discipline.

Art and design are inherently interdisciplinary, with creative practices often used to explore global challenges, such as Olafur Eliasson's Ice Watch project on climate change[3] or Grayson Perry's commentary on Brexit.[4] CSAD's curriculum encourages students to collaborate on issues spanning environmental, political, social, cultural, and technological contexts.

The workshop explored in this paper - using memes as a critical pedagogical tool - was embedded into a second-year cross-school module, called *Critique*. This module brings together students from various art and design fields to examine contemporary interdisciplinary topics. One study group

focused on decolonial discourse, while another explored internet culture. Uniting these groups allowed students to collaborate across disciplines, expanding and deepening their knowledge.

At CSAD, we strive to produce graduates who are critical thinkers. In the digital age, digital literacy is integral to critical thinking. Through this workshop, students engaged with digital materials and skills, refining their ability to analyse identity, communication, and decolonial discourse. This aligns with authentic learning principles, connecting theory to real-world contexts and equipping students to navigate complex debates.

Defining Decoloniality

"Allowing local histories, subjectivities, knowledges, narratives and struggles against modernity to surface, to have a face and be seen or recognized in order to become part of a "universal mapping of decoloniality"[5]

Looking at this quote, and the multiple works of Fanon,[6] Mignola,[7] and Said[8] one could summarise that "Decoloniality is an awareness that there are alternative perspectives to, what we believe is the golden standard and breaking that standard." it would seem the logical thing to do, is to decolonize our praxis. Right? Unfortunately when going against any golden standard, one is met with resistance. Although there are international drives from governments to decolonise their curricula at all levels, essentially there is not enough "authentic" true decolonial resources out there. Especially in a western HE system that requires reviewed, journals, tenured authors and academic experts in their field to have created these sources. Even if their field is not intrinsically linked to THEM. fact is, there aren't enough Global majority written resources or edited books to create a big enough wave of colour as Malcom X put it.

Yet, as Potter[9] states:

"Finding the authentic has become the foremost spiritual quest of our time. It is a quest fraught with difficulty, as it takes place at the intersection of some of our culture's most controversial issues, including environmentalism and the market economy, personal identity and consumer culture, and artistic expression and the meaning of life."

This raises questions such as *Who are we*? Or *how does that affect our output as design practitioners*? Some of the challenges faced have always been the lack of global majority voices, and perspectives. Some of our students have never had to look at things through an alternate lens, they have had that privilege. So, we need to redirect their gaze, we need to use our own position, power and privilege to speak about socially difficult topics that make them question their identity and authenticity. To change the narrative, to decolonize any practice, we have to agitate it, disrupt its norm and redefine its standards. That is what we strive for through our teaching through non-traditional radical modes: memes, debates, discussions, and talks like these. The way to propel education forward is to have equity, and to harness our collective, albeit different, cultures and heritage into creating new knowledge. Knowledge is power; the power to elevate ourselves, and our the next generation.

A huge obstacle to decolonial teaching is terminology in pedagogy and beyond. We need to take the time to consider the importance of translating loaded terms. For example: *decoloniality* can be literally translated to '*naz3 elnaz3a elest3mareya*'. Fanon[10] brutally and honestly said one cannot truly decolonize unless it is 'root and branch'.by examining these terms and creating new knowledge and our new native terminology, we are indeed starting that process 'root and branch'. The term *naz3* means to unpluck, tear out, or extract; it is violent. *naz3a elesta3mareya*, means the colonial tendency. So, "نزع النزعة الاستعمارية" literally means the *removal or uprooting of the colonial tendency*, which can be understood as *decolonizing*; referring to the process of rejecting or dismantling colonial ideologies, practices, or influences. This phrase captures the idea of eradicating the colonial mindset and

practices, which aligns with the concept of decolonization. That said, as a phrase not just a word, it carries a deeper definition.

Memes as a Pedagogical Tool

The internet is of course omnipresent, and students will be engaged with networked technologies in all aspects of their life whether in personal or professional contexts. As creative practitioners, they will engage with digital and network technologies, whether or not they identify as digital practitioners.[11] Therefore, using memes as a pedagogical tool provides an opportunity to engage students in authentic learning in the age of the internet. That is, learning that is relevant to real world contexts, encouraging students to engage in discourse, collaborative learning, and the exploration of open-ended inquiries.[12]

Memes are a powerful pedagogical tool exactly because they're what Steyerl[13] might describe as 'poor images'; images that are often low in resolution or quality, yet rich in cultural and social significance. As Milner[14] points out, memes are the lingua franca of the 21st century, ubiquitous in online spaces. Despite being dismissed as low-brow or trivial, their widespread presence and viral circulation make them crucial to understanding contemporary discourses. What's particularly significant is that memes, by their very nature, resist capitalist and colonial systems of power. They disrupt traditional modes of communication by being decentralised, accessible to anyone with an internet connection, and often subverting established narratives. In this way, memes can be seen as inherently decolonial: they empower marginalised voices and provide a platform for alternative discourses, challenging hegemonic structures that often control mainstream media. The very act of remixing, re-contextualising, and sharing memes resists the commodification of culture and opens space for critical engagement, offering students an opportunity to think beyond dominant systems of power and authority.

While the speed and brevity of online communication can often lead to oversimplification or a loss of nuance, bringing memes into the classroom allows us to engage with them critically. By understanding the mechanics of a meme, we can explore how they communicate ideas, challenge conventional thinking, and open new pathways for discussion.

PEDAGOGICAL METHODS

Using memes as a critical pedagogical tool required the students to engage with a range of pedagogical methods. Primarily this included dialogical approaches, decolonial methods, and engagement with creative practice.

A dialogical approach is central to the authenticity of students' learning experiences. This approach emphasises dialogue and open communication, not only between teachers and students but also among the students themselves, placing talk at the heart of both learning and teaching.[15] Through this approach, students actively develop their understanding by engaging in hands-on analysis, deconstruction, synthesis, and discourse, building their knowledge through conversation with one another and with us. Unlike traditional lecture-based models, where lecturers simply impart information for students to absorb and process, we act as facilitators, encouraging active participation throughout the workshop which is in keeping with the principles of delivering authentic learning experiences.[16] As Alexander[17] notes, dialogic teaching methods are an effective way to address the challenges of a post-truth society, where objective facts are often sidelined in favour of more persuasive opinions. By adopting this approach within this workshop, we help students cultivate critical thinking skills necessary for the 21st century. Moreover, with a focus on decolonial thinking,

we encourage students to consider whose voices are heard and how power dynamics shape online discourse.

Dialogic approaches, if implemented effectively, are essentially decolonial since they challenge the traditional idea that the teacher is the one source of truth that cannot be questioned. The traditional teacher-student hierarchy is disrupted, and we engage together in tackling the problem at hand; that is analysing, deconstructing, synthesising and reconstructing problematic memes that reinforce stereotypes about groups with different cultural identities.

Using the memes provided, students explored the power dynamics embedded in digital media and internet culture. This process encouraged ongoing reflection, action, and unlearning, challenging colonial thinking and practices. Working in small groups is an effective way to create an authentic learning experience, providing opportunities for one-on-one conversations with peers and the teacher.[18] Interrogating the memes together in this way allows students to engage with ideas from multiple perspectives, fostering authentic collaborative and reflective learning experiences.[19] From a decolonial perspective, students are encouraged to reject competition and individualism in favour of collective knowledge construction through alternative, collaborative lenses.

As mentioned earlier, memes are inherently decolonial, and as low-brow, poor images, they offer a low barrier to access. By presenting memes in this workshop as a focus for critical discourse, we took an inclusive approach to teaching. There is no expectation for a meme to be well-designed or high-resolution, allowing students to engage freely with them, both in their interpretation and analysis of them, and in the process of deconstructing and remixing them, which they were able to do easily using apps they already had on their devices. As the students will all likely end up using technology to some degree in their professional lives,[20] the workshop's requirement for them to remix the memes forces them to engage with technology; all a part of their authentic learning experience. While students' confidence with technology may vary, they are all familiar with engaging in creative practice as artists and designers. Asking them to remix memes provided an opportunity for thinking through making, a mode of critical reflective practice they have already developed to some extent by their second year of study

Integrating memes into the learning process

The collaborative session between our two study groups was designed as an active workshop. As mentioned earlier, students worked in small groups, each provided with a selection of memes that we had pre-selected.

The memes chosen were deliberately challenging, whether overtly racist, homophobic, misogynistic, or a combination of these. Before sharing them, we briefed the students, making it clear that these images were selected precisely because they are problematic. We reassured them that it was okay to feel offended but emphasised that the intention was not to shock or provoke but to critically examine the mechanics and implications of such content.

We contextualised the session within prior discussions in each study group. One group had been exploring the ontology of memes; how they exist beyond fixed locations and linear time, their cultural significance, and their ability to perpetuate harmful stereotypes under the guise of humour.[21] The other group had engaged with issues such as racism, appropriation, performative wokeness, and colonial legacies through a range of alternative mediums and theories. Their discussions incorporated Socratic debate, Bell Hooks' intersectionality theories, and case studies spanning film and music, including Kendrick Lamar, Beyoncé, Aladdin, and Syriana. By analysing familiar cultural artifacts and public figures, these abstract constructs, such as race, culture, and commodification, became more tangible, grounded in students' everyday experiences.

The joint session brought these discussions into practice. By engaging with memes, students applied their critical insights, reinforcing their understanding of the ways colonial ideologies and power structures persist in digital spaces. We ensured they fully grasped the purpose of the session and why it was essential to discuss these images critically before they were introduced

STUDENT ENGAGEMENT AND OUTCOMES

We have run this workshop with students multiple times now, and anecdotal feedback has been overwhelmingly positive. Bringing together the two study groups has proven highly effective, as it allows students, who have been taught separate theoretical contexts up to this point, to share their knowledge with peers. In doing so, they effectively take on the role of educators, reinforcing their own learning through the process of articulation and exchange. This approach aligns with constructivist learning theory,[22] where teaching others requires individuals to actively reconstruct their understanding, deepening their knowledge through vicarious learning experiences.[23]

The work produced during these sessions demonstrated a meaningful engagement with decolonial thinking and a noticeable shift in students' perspectives. Their responses evidenced a clear development of knowledge and understanding as they critically examined, deconstructed, and remixed the memes provided as we will elucidate below.

Figure 1. A meme provided to students for analysis and remixing

Figure 2. A student-created remix of the meme shown in Figure. 1

In the examples presented here, students not only identified that the text in the original meme (Figure. 1) was problematic but also recognised that the image itself relied on harmful stereotypes. With this awareness, they chose to retain only the top text from the original meme. However, during their presentation back to the class, a discussion arose about the issues with the replacement image they had selected, specifically how it continued to perpetuate a stereotype of what a Muslim man looks like. Although this hadn't been addressed during the creation of the new meme, students continued to critically challenge their own work and that of their peers during our group discussions.

It was encouraging to see students engaged in this ongoing cycle of reflection, rather than being satisfied with their new meme as perfect. This demonstrates the value of an authentic learning experience, in which students actively engage in cycles of inquiry that encourage them to reflect on what they have learned[24]. We witnessed active unlearning and relearning, breaking down stereotypes in real-time. This process became a visible, active, decolonial practice. The simple act of prompting our students to question and unpack their newly created memes, to recognise why even their work might be problematic, and to continue decolonizing, deconstructing, and remaking them, marked a significant step toward challenging traditional, Western-centric modes of knowing
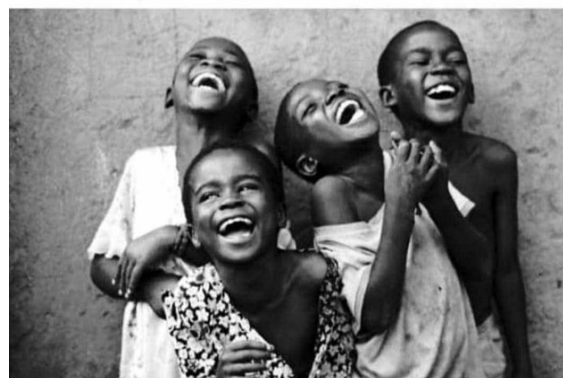
Figure 3. A meme provided to students for analysis and remixing

Figure 4. A student-created remix of the meme shown in Figure. 3

This is another example of how students worked to deconstruct the original image in Figure 3 and synthesise a new version of the meme, recontextualizing the image in a less problematic way. Instead of embedding the image in unseen socio-political contexts, they shifted the focus to draw attention to the photo itself.

The process allowed students to engage deeply with the images used and appropriated in the original memes, uncovering the false narratives they encounter daily. For instance, the meme in Fig. 3 was created using an image found by the students through a reverse image search, which was labelled 'Photo of some happy Nigerians laughing to illustrate story'.[25] The story in question was about Nigeria's ranking on the Global Happiness Report. The context of the article, which was far removed from the stereotype of the 'starving African child' depicted in the meme from Figure. 3, prompted students to reflect on the disconnect between the two representations.

During the class discussion, the students critically reflected on their own work again as they questioned the necessity of including the 'black' label in the text of their meme (Figure. 4). They considered how this decision might have stemmed from their own position and privilege as white Western students, offering an opportunity for deeper self-awareness and reflection.

CONCLUSION

This experience has shown us that, while often dismissed as low-brow, memes can be an engaging and accessible tool for challenging students as part of an authentic twenty-first century learning experience. Our students are already familiar with internet memes and understand their basic operation as a mode of digital communication. Despite being small, these poor images can carry complex meanings, offering both opportunities to unpack and recontextualise them.

As a pedagogical tool, memes challenge the academic canon. Inherently decolonial, they provide an ideal entry point for introducing students to decolonial thinking and the critical examination of the false narratives that pervade our contemporary networked society.

Educating the next generation about our cultures, techniques, and the importance of distinguishing between cultural appropriation, diffusion, and appreciation is essential. By using decolonial approaches like this, we hope to reclaim, re-educate, and equip future citizens with the tools to challenge the status quo.

NOTES

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CREATING A MORE INCLUSIVE AND ADAPTIVE ROBOTICS TRAINING WITH IMMERSIVE TECHNOLOGIES AND ARTIFICIAL INTELLIGENCE

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INTRODUCTION

We are confronted with existential challenges characterized by the convergence of global warming, rising social disparities, and economic inequalities exacerbated by automation and artificial intelligence (AI). These intersecting issues define our present moment and shape future possibilities.[1] Given this context, it is imperative to critically reassess established academic disciplines and professions, recognizing their historical foundations in structures of power, inherent biases, and their implications for labor relations and societal equity.[2] Fields such as architecture, engineering, and construction (AEC), which significantly influence our built environment and maintain longstanding associations with issues of discrimination and inequality, demand immediate reevaluation.[3]

As AI and automation increasingly disrupt traditional labor markets, educational frameworks require urgent reimagining. It is crucial not only to equip individuals with technical competencies but also to empower them with critical awareness of AI's implications on social structures, labor dynamics, and ethical considerations. Education should enable diverse communities to actively shape rather than passively experience technological trajectories, fostering their capacity to leverage robotics and automation ethically and sustainably.[4]

In this broader educational reorientation, current robotics training programs require significant transformation. Existing robotics education models often have limitations that hinder scalability, accessibility, and inclusiveness. Primary among these challenges is the high cost of specialized training, restricting access predominantly to well-funded entities and perpetuating economic inequalities.[5] Current robotics training frequently employs resource-intensive methods, such as in-person workshops and reliance on specialized, proprietary equipment. These methods are difficult to scale in response to rising demand for robotics skills.[6] Additionally, traditional pedagogical practices emphasize manufacturer-specific technologies, constraining learners' adaptability across different robotic platforms and limiting the transferability of skills.[7] This lack of interoperability inhibits innovation and reduces workforce agility, precisely when adaptability is increasingly essential in rapidly evolving technological environments.[8]

This paper examines current robotics training practices and explores how recent advances in AI and extended reality (XR) can be leveraged to create more accessible educational content. We investigate

both the potential benefits of these technologies—including opportunities for personalized and scalable training—and their ethical risks, particularly algorithmic bias stemming from homogeneous training datasets.[9] We then present two case studies from our work with a coalition of three Minority Serving Institutions (MSIs), including Florida International University (FIU), Arizona State University (ASU), and University of Hawaiʻi at Mānoa (UH Manoa), demonstrating practical approaches that overcome existing limitations in robotics education through AI-powered immersive learning. These projects exemplify strategies that promote greater equity, inclusion, and effectiveness in preparing diverse communities for technological transformation.

CURRENT ROBOTICS TRAINING PRACTICES: LIMITATIONS AND CHALLENGES

The AEC industry is undergoing profound transformation driven by robotic automation and AI integration. These technologies are fundamentally reshaping traditional methodologies in designing, planning, and constructing built environments.[10] Amidst these shifts, practical training has become essential in preparing the workforce to effectively navigate and leverage technological advances.

Access and Resource Constraints

Despite growing demand for roboticists, training programs remain limited in both scale and scope.[11] Industrial robotics training typically occurs in specialized facilities with significant logistical barriers to access. The conventional training model requires students to take time away from work, travel to dedicated training centers, and arrange accommodations during their course of study. To accommodate these constraints, training is often condensed into intensive formats designed for rapid delivery rather than optimal learning.[12] This approach fails to support diverse learning modalities and paces that might better serve a heterogeneous student population. Although effective in some respects, traditional classroom setups for robotics education frequently demand low student-to-teacher ratios and access to specialized equipment, creating bottlenecks that restrict accessibility for the broader workforce.[13]

Proprietary Systems and Limited Transferability

The pedagogical foundation of conventional robotics training presents additional challenges. Learners typically begin with text-based or proprietary manuals focused on specific brands or equipment types. Training sessions generally combine lectures, demonstrations, and supervised practice with training robots. These learning experiences are predominantly oriented toward proprietary systems, interfaces, and software with minimal emphasis on knowledge transferability across platforms.[14] Since robot manufacturers employ different hardware and software configurations with little standardization in control interfaces or programming procedures, proficiency with one system rarely translates directly to others, limiting versatility in increasingly diverse technological environments.[15]

Pedagogical Limitations and Narrow Skill Development

Most training emphasizes equipment commissioning, calibration, and maintenance alongside typical manufacturing operations using proprietary systems. Content is designed to promote mastery of predefined concepts and techniques while discouraging spontaneous decision-making to minimize errors. Knowledge in this model is conceptualized as knowing the singular correct response to predetermined problems, essentially programming students with expected answers rather than developing adaptive problem-solving capacities.[16] There is minimal focus on general knowledge, transferable strategies, or creative approaches for addressing common challenges across different robotic systems, procedures, or environments. Current pedagogical approaches prioritize platform-

specific procedural skills at the expense of holistic system thinking and adaptive problem-solving that would enable contextual flexibility. Technical instruction generally lacks adequate integration of socio-ethical considerations essential for responsible technology development and deployment.[17]

The combined effect of these limitations creates significant barriers to scaling robotics education to meet growing workforce demands while simultaneously restricting access to privileged demographic groups, perpetuating existing inequities in technological fields.[18]

EMERGING TECHNOLOGIES FOR ENHANCED ROBOTICS TRAINING

In recent years, AI and XR have been revolutionizing educational approaches, offering unprecedented opportunities to overcome traditional limitations in robotics training while fundamentally reimagining knowledge transmission and learning experiences. As we embrace these innovations, maintaining critical awareness of both their transformative potential and inherent limitations remains essential for responsible implementation.[19]

AI-Driven Learning: Affordances and Potentials

Understanding the complex mental, psychological, and social processes involved in learning can help educators better serve students with varied needs. This has historically been challenging due to the multidimensional factors that must be accommodated, including diverse backgrounds, differing cognitive capabilities, and the need for immediate, context-sensitive feedback.[20] Emerging advancements in AI and computational technologies offer transformative approaches to addressing these educational challenges.[21] Recent progress in logical reasoning, big data analytics, predictive modeling, and natural language processing enables the development of Intelligent Adaptive Learning Systems that transcend traditional pedagogical methods by offering personalized instruction.[22] This level of personalization offers considerable benefits, particularly in increasing educational efficacy by accommodating individual students' diverse learning paces and trajectories, potentially democratizing access to high-quality education.[23]

AI-Driven Learning: Ethical Considerations and Bias Risks

Despite these promising affordances, integrating AI into educational systems introduces ethical complications. Of paramount concern is the risk of algorithmic bias stemming from training datasets that are skewed or unrepresentative.[24] These biases often arise inadvertently through the natural process of training AI systems on data from homogeneous groups of individuals, leading to narrow or distorted understanding of learning behaviors and needs.[25] To mitigate these risks, educators and researchers must proactively address ethical considerations through thoughtful curation of representative training datasets, continuous monitoring and auditing of algorithmic decision-making, and incorporating explainability and transparency features into AI systems.[26]

Spatial and Immersive Technologies for Education

Spatial and immersive technologies, particularly VR and AR, represent leading frontiers in educational computing.[27] These technologies enable the creation of computer-generated simulations that enhance training experiences, fostering more engaging and enriched learning environments.[28] In robotics training specifically, VR offers safe, risk-free environments where students can engage in simulations before working with actual robotic systems, while AR provides supplementary feedback when students interact with real-world robots, overlaying situational data to deliver real-time guidance.[29] The strategic integration of AR and VR at different training stages offers significant advantages for scalability, allowing for easy updates to training scenarios and facilitating broader distribution of training materials beyond traditional workshops and classrooms.[30]

DIVERSITY AND REPRESENTATION IN ROBOTICS EDUCATION

While the discussion has thus far focused on technological aspects of robotics training, it is crucial to confront broader issues of equity and access. Like other STEM domains, robotics has historically been characterized by a striking lack of diversity. Recent data indicates that women represent merely 16% of individuals in engineering and robotics roles.[31] Similarly, according to the US Bureau of Labor Statistics, women constitute only 10% of the construction industry workforce.[32] These disparities are further reflected in the broader STEM landscape, where National Center for Science and Engineering Statistics data reveals that Hispanics and Blacks comprise only 15% and 9% of the total STEM workforce, respectively.[33]

This narrow representation has multi-layered consequences in robotics education. Curriculum and training materials, predominantly shaped by a restricted demographic, often lack comprehensive perspectives that a more diverse group would contribute. Such environments risk becoming echo chambers that reinforce existing biases and stifle intellectual diversity. As observed across various domains, individuals from different backgrounds offer unique approaches to problem identification, analysis, and resolution.[34] When incorporating AI for personalized training, additional risks emerge regarding the quality and diversity of training data. When these datasets originate from restricted demographics, the resulting AI systems can inadvertently perpetuate biases inherent to those groups.[35] Such biases may have detrimental implications for personalized learning experiences, particularly affecting underrepresented communities.

These limitations extend beyond individual educational programs. Bias becomes systemically ingrained into educational, professional, and research systems, creating a self-reinforcing cycle that limits diversity of thought and innovation.[36] When robotics education lacks diversity, the field's potential for novel applications diminishes, becoming less creative, less competitive, and less economically productive.[37] Addressing these challenges requires intentional efforts to diversify the entire ecosystem of robotics education. Technologies like AI and XR can potentially democratize access, but only if designed with diversity and inclusion as core principles rather than afterthoughts.

IN PURSUIT OF EQUITABLE OUTCOMES

To address training challenges, we present initiatives that originated at Florida International University (FIU) Robotics and Digital Fabrication Lab and have subsequently expanded to form a coalition with Arizona State University (ASU) and University of Hawaii at Manoa (UH at Manoa). These projects represent practical implementations of the theoretical concepts discussed earlier, showcasing how emerging technologies can be leveraged to create more inclusive and adaptive robotics training experiences.

FIU's status as one of the largest public Minority Serving Institutions (MSI) provides an ideal environment for spearheading this research. The RDF Lab, led by a minority woman with backgrounds in architecture, engineering, and computational design, has maintained 75% women representation among its research team, fostering a diverse environment. The Lab's location in a predominantly multilingual city shaped its focus on multicultural accessibility. As faculty from the original RDF Lab team transitioned to positions at ASU's Media and Immersive Experience Center and UH Manoa's School of Architecture, they maintained their research collaborations, creating a natural coalition of MSIs addressing robotics education challenges through their complementary expertise and diverse student populations.

The researchers have developed projects integrating AI-powered spatial and immersive technologies to create personalized robotics training environments that accommodate diverse learning needs. These initiatives specifically focus on overcoming traditional barriers to robotics education while ensuring

that the developed systems themselves don't perpetuate existing biases or inequities. Below we present three key projects that illustrate this approach.

Robotics Academy

In 2019, researchers at FIU initialized an NSF-funded project to plan a comprehensive robotics training program. Through expert interviews and focus groups, they assessed industry-specific training needs, emphasizing both in-person and virtual delivery methods for industrial and small robotics knowledge dissemination.
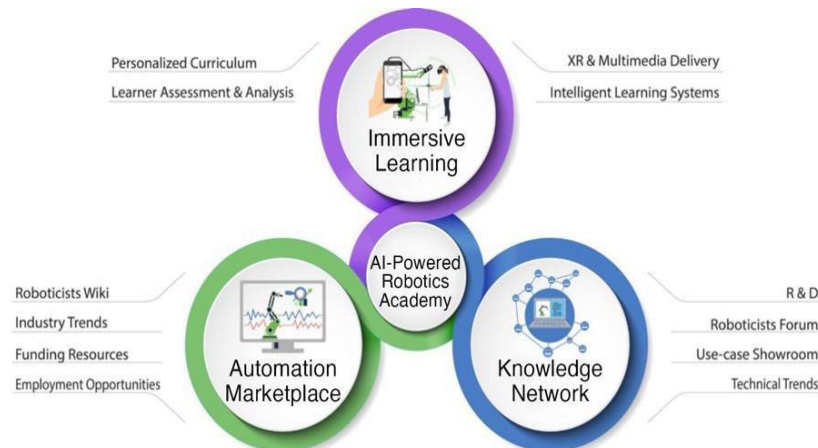
Figure 1. Diagram describing the overall structure of the Robotics Academy.

The Robotics Academy was conceptualized as a cloud-based resource benefiting the AEC workforce, with goals of expanding training access, building a community of AEC roboticists, and connecting employers with skilled professionals. The framework included three components: 1) Immersive Learning with AI-powered curriculum delivered through AR/VR; 2) Open Knowledge Network facilitating information exchange; and 3) Automation Marketplace connecting entrepreneurs, employers, and employees – as illustrated in Figure 1. Following this planning phase, the team developed a VR prototype for the Immersive Learning component. User testing confirmed VR's suitability for introductory and safety topics.[38] The environment, designed for HTC Vive Eye Pro using Unity, simulated an industrial robotics facility with dedicated work cells. Participants navigated at their own pace, interacting with robots, safety videos, and demonstrations on robotic anatomy and terminology – as illustrated in Figure 2.
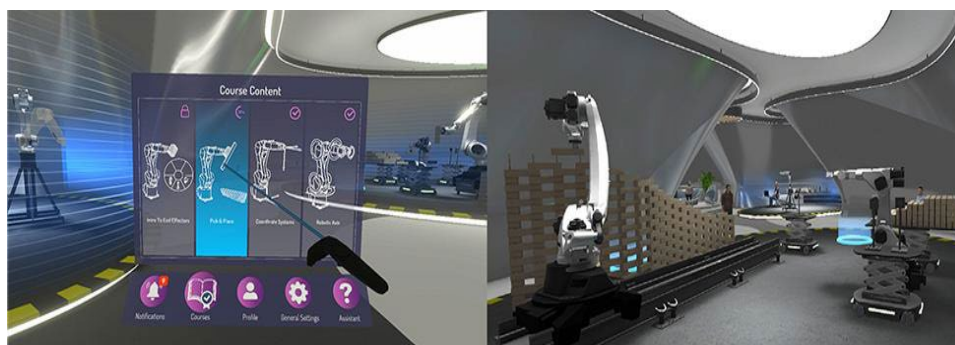
Figure 2. Left: Scene from the VR prototype environment demonstrating the lesson selection user interface. Right: Simulation in the Pick and Place lesson.

VR Curriculum: Intelligent Immersive Environment for Learning Robotics

Building upon the Robotics Academy framework and VR prototype, this NSF-funded project through the Research on Innovative Technologies for Enhanced Learning (RITEL) program creates an adaptive learning environment for industrial robotic arms. The system employs Machine Learning (ML) and Natural Language Processing (NLP) algorithms to personalize the immersive VR curriculum based on individual learning patterns and needs. This technology provides an engaging virtual environment where students can master robotic arm technologies through customized instruction paths.[39,]

The curriculum includes six core modules, covering foundational topics like workplace safety and robotic anatomy, as well as advanced subjects such as calibrating and programming industrial robotic arms. These modules take the form of a learning game, boosting engagement and offering performance-based scoring.[40] To achieve personalization, the adaptive learning system collects various metrics from VR interactions, including time spent, attempts, verbal responses, and quiz results. It also considers student profiles, like backgrounds and skills, to tailor the training experience. This combined data informs an adaptive learning path aligned with individual needs, preferences and progress – as illustrated in Figure 3.
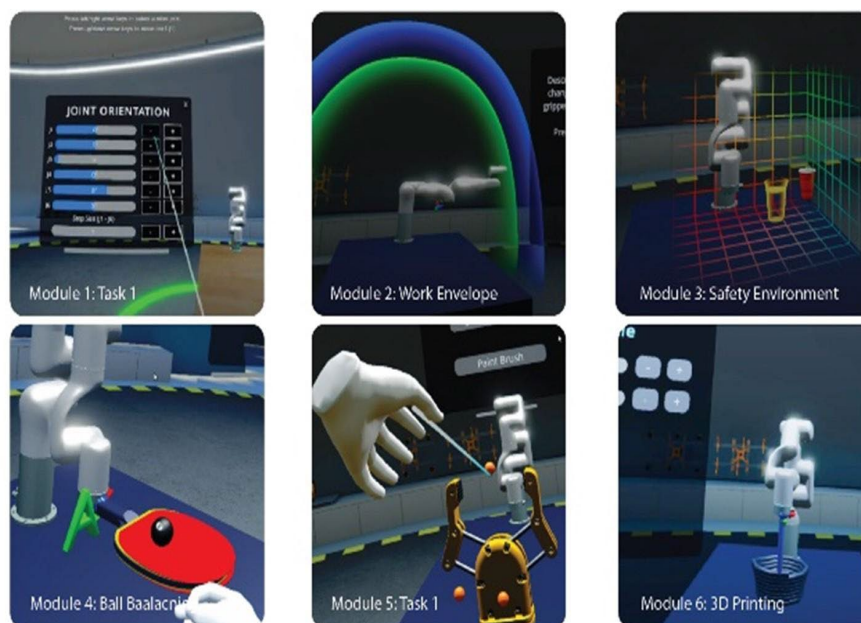
Figure 3. Capture from the six VR modules.

This project addresses a crucial research gap by integrating learning systems with immersive virtual environments to create an adaptive learning experience. While previous research has explored these domains separately, merging these elements to construct a robust personalized learning system represents a novel endeavor. Testing this AI-powered approach within a VR curriculum demonstrates an advanced application of adaptive learning. Furthermore, the curriculum's development by a diverse team and its extensive testing with underrepresented participants safeguard against inherent biases and provide a rich dataset for refining the adaptive learning system.[41]

AR Curriculum: Augmented Learning for Environmental Robotics Technologies

This project, funded by the NSF's Improving Undergraduate STEM Education program, focuses on delivering personalized immersive curriculum focused on learning about environmental robotics technologies. This project, is an educational tool targeting small robotics, emphasizing environmental data collection, analysis, and visualization. The project delivers a specialized curriculum using AR for an immersive learning experience that enhances understanding of environmental data and real-world robotics applications.[42]

Using the project's adaptive learning system, students engage in guided learning activities while wearing an AR headset to work with various "parts kits." In some cases, these kits are physical components that must be assembled in a specific sequence of operations. In other instances, they are snippets of code or blocks of data that can be plugged into one another in various ways to perform actions or to display information. The interactive nature of handling physical components and viewing data with on-demand informational overlays allows learners to explore how the components and data modules can be assembled to create a robot for collecting and viewing data from the environment – as illustrated in Figure 4.

The curriculum comprises three interconnected modules: 1) An introductory module with personalized online lessons introducing environmental robotics concepts, components, and programming; 2) An applied learning module delivered in-person using AR headsets to guide assembly of sensing kits for applications including site condition monitoring, outdoor air and water quality sensing, building comfort and energy monitoring; 3) An exploratory data analysis module, also delivered using AR, covering techniques like understanding datasets, identifying relationships, collaborative visualization, and moving from exploration to action across five subcategories of data cleaning, collaboration, relationships, understanding, and application. This multifaceted curriculum ensures students gain theoretical knowledge, practical skills, and data literacy.
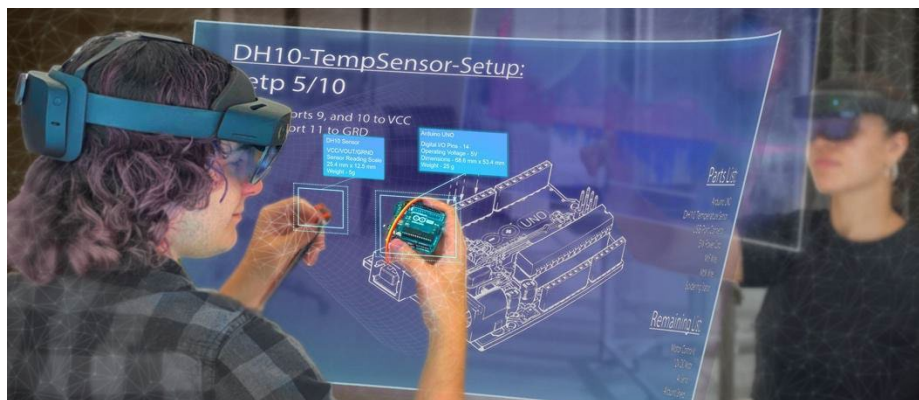
Figure 4. AEC student using the ALERT's AR app to navigate an applied learning module on outdoor air pollution monitoring, assembling a temperature sensing kit with an Arduino microcontroller and a humidity sensor.

In this project, data collection for personalized learning employs various metrics. First, student profile data captures background info and skill levels, setting the initial context for a personalized curriculum. Second, real-time performance in quick quizzes signals comprehension and engagement, enabling instant content adjustments. Third, eye gaze data is biometrics, revealing focus and cognitive load. This nuanced data informs engagement and support needs, enhancing dynamic, responsive learning. These sources contribute to a personalized educational experience for optimized learning outcomes. Like the other projects, this project also leverages technology to foster inclusivity and the

needs of diverse learners. Embracing AR and adaptive learning mechanisms allow for the creation of a learning environment that transcends traditional barriers, accommodating many learning styles and backgrounds.

FUTURE PROSPECTS AND CONCLUSION

The need for diversity and accessibility in robotics training is a concern that demands attention. Historically, robotics education has been constrained by limited resources and specific requirements, limiting its accessibility to a broader range of students. These constraints perpetuate inequality, particularly in minority serving institutions.

Emerging technologies, when implemented ethically and informed by learning science, offer transformative potential to address these issues. Our examination of ongoing projects that originated at Florida International University's Robotics and Digital Fabrication Lab and expanded to Arizona State University and University of Hawaii at Manoa demonstrates how these technologies can democratize robotics education in AEC. These works-in-progress continue to evolve as researchers gather data and respond to emerging challenges.

The case studies illustrate how AI-powered adaptive learning systems when integrated with immersive technologies respond to diverse learning styles, representing both technological advancement and social equity. These initiatives accommodate varied student populations with different educational backgrounds, effectively leveling the educational playing field. These three MSI universities provide ideal environments for developing these systems due to their diverse student populations. Preliminary insights enhance pedagogical approaches and offer frameworks for addressing inclusion challenges throughout the AEC industry.

As this research evolves, AI and XR technologies with inclusive design principles show significant promise for transforming robotics education. By addressing both technological and social barriers, these approaches create accessible pathways for underrepresented groups, driving innovation and producing responsive, ethical technological solutions for our collective future.

ACKNOWLEDGMENTS

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HOW DO GENERATIVE AI TOOLS AS CHATGPT ENHANCE UNIVERSITY STUDENTS LEARNING ABILITY AND CRITICAL THINKING?

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INTRODUCTION

On November 30, 2022, OpenAI launched ChatGPT, a groundbreaking language model that transformed the technology landscape. Artificial intelligence, once seen as a niche concept, quickly gained acceptance across various sectors—including education. The global shift to virtual learning, accelerated by the COVID-19 pandemic, emphasized the need for better digital tools to support teaching and learning. AI, and ChatGPT in particular, has emerged as a potential solution.

In higher education, ChatGPT has attracted significant interest from both students and faculty. However, its effects on student learning and critical thinking are still not well understood and remain under-searched. Therefore, this study aims to examine how AI tools, like ChatGPT, influence student learning and development of critical thinking skills. By analyzing three learning models identified in prior research, the study investigates five key themes: the usage of AI in higher education, the preferred learning methods, the efficiency of the learning process, the use of AI in enhancing learning, and its impact on critical thinking among university students.

LITERATURE REVIEW

Previous research demonstrate, among other things, that AI has the potential to be used in teaching in various ways to strengthen student learning. The digitalization of higher education has brought about an increasing use of artificial intelligence (AI) in teaching contexts. At the same time, there are demands that education should not only convey facts, but also develop students' critical thinking, self-development and collaborative skills.

It is essential to understand that learning is a process and that there are many different methods and strategies that can be used to strengthen and improve the process.[1] The effect of different backgrounds, different experiences and conditions leads to different ways of learning and absorbing new information.[2] There are three different learning models, which gives an understanding of how learning implemented;

• Reception model

• Constructivist model

• Co-constructivist model.[3]

The first reception model means that the learner is a passive receiver of knowledge, which is transferred from the teacher. It fulfills the first two purposes of learning: gain more knowledge as well

as memorize and reproduce.[4] Knowledge is transferred from experts to novices because they are passive recipients of knowledge.[5]

The reception model does not encourage critical thinking in terms of consequences and that the model does not bring out the students' understanding of the subject and their own responsibility for their learning.[6] Other researchers argue that traditional teaching which includes presentation of information and ideas can result in students having difficulty to maintain interest and attention.[7] In addition, the students will define themselves in terms of ability, which can lead to beliefs about inability, when the student is confronted with difficult learning tasks, critical thinking and tasks to evaluate their own or others' learning progress.

The constructivist model means that the best method to gain more knowledge in the subject is through activities such as discussion, constructive criticism and by asking open questions. Duffy and Cunningham[8] emphasize that students must construct their own knowledge by building dialogues and discussions with other students in the course. It's of great importance that students are very engaged in creating content and find meaning in the learning.[9] As pointed out by Rudsberg et al[10] students who are active and engage in discussions are able to construct better arguments as well as questions. In addition, students who participate in argumentation discussions increase the quality as well as the complexity of their arguments. Thus, the constructivist model places less emphasis on taking in information and processing it, but instead puts weight on developing new knowledge and broader understanding, focusing on not only quantity, but also quality of learning.[11]

The third learning model is an expanded version of the constructivist model. It is based on communication, cooperation and collaboration between students, which leads to creating a common understanding.[12] Duffy and Cunningham[13] emphasize that collaboration between students working in groups with each other makes learning a social dialogical process, where group work is used for promoting dialogic exchange between group members.

Carnell and Lodge[14] explain furthermore that it, together with the constructivist model, aims to add a smaller emphasis on taking in information, but instead put focus on presenting and teaching one's knowledge and experiences. By using this model, students can critically observe their own learning including reflection on previous experiences and understanding of learning. Rudsberg et al[15] believe that individuals' previous experiences, knowledge and critical thinking contribute to meaning creation when students interact with each other in discussions.

ChatGPT and student learning

With the help of ChatGPT, students can get answers to most of their questions on one and the same platform with the possibility to ask follow-up questions to get in-depth answers. ChatGPT also enables students to get responses and feedback on their own work as well as suggestions for any changes that should be made to improve their performance. This can enhance student learning by enabling them to get help when they need it and to promote a more continuous and independent learning process. Moreover, ChatGPT uses so-called reinforcement learning to improve its responses, which is done by making continuous use of feedback from human evaluators.[16] ChatGPT makes the amount of information more easily accessible, streamlines and improves students' learning abilities.[17]

Use of AI and critical thinking

The relationship between generative AI tools like ChatGPT and critical thinking is complex, offering both opportunities and challenges for educational development.[18] ChatGPT, as an advanced language model, has the potential to stimulate critical thinking by presenting students with different perspectives and challenging their existing knowledge structures. Through interactions with the AI,

students can engage in dialogues that require them to analyze, evaluate, and synthesize information which are the key components of critical thinking. At the same time, students may become dependent on AI to solve problems and make decisions, which can again lead to a reduced ability to think critically and independently. Another risk is that students may be tempted to use AI to create work that is not their own, which can affect the depth and authenticity of learning.

RESEARCH DESIGN AND DATA COLLECTION

Quantitative method in a form of a survey with mixed type of questions was chosen to collect data and explore student learning and critical thinking through five themes presented below. The anonymous survey was distributed both in electronic and paper format to 134 current students at the Master program in Real estate and construction management at KTH Royal Institute of Technology in Stockholm, Sweden in November 2024. 28 students answered the survey in total, which corresponds to response rate of 20.9%, which lies within the normal interval of 11-100%.[19] There were 34.3% of female respondents, 62.7% male respondents and for the 3% of respondents the gender was unknown. 89.3% of them answered survey online and 10.7% answered in paper format.

RESULTS AND ANALYSIS

Theme 1: Usage of AI tools

All respondents (100%) have confirmed that they have used AI tools like ChatGPT before. 46% of students use AI tools like ChatGPT daily, 32% weekly and 17% monthly. The majority of students use AI tools like ChatGPT for *"explaining complex theories and concepts"* (39%), while others use it *"to get faster answers"* (21%) and *"to practice for exams"* (21%). Less often (4%) of students use AI tools like ChatGPT for performing minor tasks like *"to find sources", "write summaries"* and *"reformulate sentences"*. For 35% of students the interaction with AI tools like ChatGPT looks like *"usually asks a follow-up question and asks it to develop the answer more"* and for 60% of respondents it looks like *"usually ask several follow-up questions to gain a deeper understanding"*. Only 4% percent of students are *"satisfied with the answer provided"* from the first time.

Theme 2: Learning methods

On the question about which learning method is preferred, a majority of the respondents answered that they learn best by discussing with others like, for example, teachers or other students (43%) and by reading course materials like books or articles (9%) which corresponds to constructivist model of learning. Since they have started to use AI tools like ChatGPT in their studies only one fourth of respondents have answered that they feel less need to collaborate and discuss with others.

Theme 3: Efficiency of the learning process

Three fourth of the students confirmed that AI tools like ChatGPT help them to learn in a more efficient way and only 11% feel that the way they learn has become less efficient. First, AI tools like ChatGPT help students to save time (86% of the respondents). Second, their learning process has changed since they started to use AI tools like ChatGPT in their studies. Students mention that even though *"AI quite often doesn't give the complete answers"*, it is still *"something that has helped with studying on top of the increased efficiency."* They *"can get more interesting answers with more extended information"*.

Theme 4: Use of AI for enhancing learning

AI tools like ChatGPT also help to increase efficiency of learning through enhancement of the learning process. It increases communication, cooperation and collaboration not only between students, but also between the student and the "AI friend": *"It is easier to find the answer to specific questions and it's like discussing with a friend sometimes"*. Students mention that *"If AI-tools are used the right way then it is as always having an extra tutor by your side, it can help you understand topics you haven't fully grasped. I do feel like it can truly enhance my studies and learning process"*.

Thus, learning with the help of digital tools happens in line with co-constructivist model where learning is a social dialogue process. When AI tools are integrated in this process, learning is still a social dialogue process, but in a digitalized way. It provides room for response and reflection and allows students to bring their own perspectives and ideas based on constructive insights and suggestions received from "AI friend".

Theme 5: Critical thinking and use of AI

Education with use of AI tools requires evaluation of the information these tools generate through the interaction with students. Results of the survey demonstrate that 50% of the students normally trust the answers provided, and only 15% of the respondents answered that they more distrust than trust or do not trust at all. 36% of respondents were neutral in their answers regarding trustworthiness of AI tools like ChatGPT.

It is worth noting that even if AI tools like ChatGPT provide artificially generated responses, it does stimulate students' critical thinking. Thus, according to survey results, 95% of students have checked if responses generated by AI tools like ChatGPT are correct. 62% of respondents have mentioned that they trust the accuracy of the information provided by other sources of information more than information provided by ChatGPT and 38% trust them equally. 91% of respondents think that it is important for them that AI tools like ChatGPT provide citations or disclose sources of information. It is also important for 81% of respondents that AI tools like ChatGPT proved functionality to be able to validate the information through social sources. 57% of respondents have had difficulty understanding the answers provided by ChatGPT, but only about one fifth them have not thought clarification elsewhere.

DISCUSSION

The results demonstrate that the use of AI tools like Chat GPT in education improves students understanding of the subject or topic as was proven in previous research.[20] However, it seems that it is individual how students' learning is affected in collaboration with AI, as it been also demonstrated in previous studies.[21]

When it comes to learning, the results point to the reception model[22], which implies that students receive information transmitted from teachers or AI and transform it into knowledge. The constructivist model also provides support for the discussion about learning through constructive criticism by asking questions.[23] Enhanced learning with the help of digital tools happens in line with co-constructivist model where learning is becoming a digitalized social dialogue process.

In addition, the results from the study indicate that students are critical of what the AI generates and that they do not trust the tool's ability to generate reliable information. As emphasized in previous research, AI can serve as useful tools to help students develop their critical thinking skills.[24] Moreover, results indicate that students combine different methods to search for information.

Three learning models that this study is based on – the receptive model, the constructivist model and the co-constructivist model – offer a basic understanding of different learning perspectives. AI can

play an important role in supporting these models by adapting learning to the needs of the individual, stimulating reflection and collaboration, and promoting deeper and more critical thinking. However, it is important that AI does not replace the human dimension of learning, but rather acts as a complement that reinforces pedagogical goals. The potential of AI to improve and transform learning lies in its ability to adapt to and facilitate each individual's learning process, but this requires that the technology is used with awareness and pedagogical purpose.

CONCLUSION

Both from theoretical and practical perspectives there are several implications of generative AI tools like ChatGPT on students learning and critical thinking. While AI might be used effectively in all three educational models identified in previous research, its impact on critical thinking varies. In the reception model, AI's role is more passive and may not stimulate critical thinking in the same way. In the constructivist model, AI encourages active engagement, problem solving, and analysis, fostering deeper critical thinking. In the co-constructivist model, AI supports collaborative and social learning, enhancing critical thinking through dialogue, debate, and co-creation of knowledge.

The results of this study demonstrate a generally positive perception of ChatGPT among students. They appreciate its potential benefits to learning and clear explanations such as a starting point for critical reflection. Thus, teachers should work more on continuous integration of AI tools like ChatGPT into teaching for enhanced learning. Further research should be focused on development and practical use of various pedagogical tools that can support continuous improvement of critical thinking among university students in the AI era.

In summary, AI tools such as ChatGPT should not only be used to streamline teaching, but also to create active, engaging and social learning environments. A conscious application of these concepts can contribute to more inclusive, flexible and pedagogically anchored digital classrooms.

NOTES

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TEACHING INFORMATION LITERACY IN A POST-TRUTH SOCIETY

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INTRODUCTION

The term information literacy was coined in a 1974 report for the National Commission on Libraries and Information Science, which stated: "Information is not knowledge; it is concepts or ideas which enter a person's field of perception, are evaluated and assimilated reinforcing or changing the individual's concept of reality and/or ability to act. As beauty is in the eye of the beholder, so information is in the mind of the user."[1] Responsibility for cultivating IL in students became primarily the responsibility of librarians and, for a time, was a central feature of librarian training and academic library service.[2]

It is generally understood, however, that IL instruction has not been a unilateral success and many university students lack basic critical skills, such as the ability to identify appropriate information resources and the ability to recognize an author's bias.[3] Some of this is, no doubt, due to changes in the dissemination of data, but it may also be due to the decreased stature of librarians, who rarely have more time to teach information skills than a "one-shot" session with a class. Many school districts have no access to librarians, particularly those in rural areas or those with a high number of students who are English language learners or living in poverty.[4] The Houston Independent School District, for example, has 23 librarians to serve 274 schools.[5] While people equate the rise of disinformation with the rise of the Internet, one can make the case that it aligns even more closely with the decline of library funding in schools and universities.[6] Librarians are not the only people who could perform this work, but no other group has filled in the gap since librarians stopped being able to teach critical thinking in meaningful ways, which requires more than a single instruction session.[7]

Despite the lack of instruction time spent on IL, the competency standards produced by professional organizations and taught in accredited schools are complicated and time-consuming, which makes it even more unlikely that students will develop IL skills in either K-12 or higher education. The standards are laudable, but their frameworks for teaching insist students scale certain obstacles before using data in academic work. Students have the burden of investigating the authors' authority, objectivity, and credibility. They have to scan for biases, which might mean learning about the author's other work and general circumstances. They should also search for online duplication to make sure they are not using talking points planted in social and news media. They are told to cross-reference the content with other literature to determine currency, consistency, and accuracy. They are sometimes encouraged to seek out primary resources instead of relying exclusively on the secondary

and tertiary sources that summarize them.[8] This approach, compounded with detailed citation requirements, asks for much time and effort, and assumes a maturity of understanding that is unrealistic even for many students in higher education. One may legitimately equate IL instruction with nagging one's children to eat their vegetables. Without a comprehensive program students are not likely to improve their critical analysis of data or their information seeking behavior.

INFORMATION LITERACY AS A LIFE SKILL

This lack of attention begs one to question whether information literacy is important to academic leaders. Is it a right, as some information scientists feel? It is certainly a survival skill. Collectively, misinformation (which is incorrect), disinformation (which is intentionally misleading), and insufficient information (which is ubiquitous) have resulted in political, social, environmental, and personal chaos. Disinformation campaigns have given rise to what has been described as "…an alarming pattern of global democratic regression driven by authoritarian populist leaders."[9] Poor information literacy has led to dangerously poor decision-making regarding health and medical treatment.[10] Widespread misunderstandings about science have led people to ignore earth-destroying dangers.[11] And – to scale down the destructive impact of misinformation to the classroom – some students have failed to understand their subject, which can result in failing grades.

This is unsurprising. The information one receives on a daily basis is overwhelming. People are inundated by more data than their brains can store or even process. The amount of information they see, hear, read, feel, smell, taste, and fleetingly remember is incalculable. Data flood them from both within their bodies and without them. They are only conscious of some of it. Information is usually conceptualized in narrow terms, such as textual statements delivered through media, but even those statements have to work in concert with existing beliefs, emotions, experiences, and all the other data stored in one's brain. Every moment of every day is sculpted by received information. Education systems and parenting methods generally assume people consciously self-actualize and self-determine, but internalized data unconsciously shapes both academic inquiry and personal development. While one might prefer to believe in one's own intellectual autonomy, humans are actually reactive machines who cannot make decisions, form opinions, or consciously initiate action free from the confines of their uniquely received information. For academic work, however, all the tiny bits of information that have attached themselves to a student are unacknowledged and placed in the background. Students rarely engage with more than a simplified data set, unmoored from outside impact to complete an assignment.[12] For many, research is merely the quotation of found statements as solid, inarguable fact, which serve only to prop up a thesis, design, or other output. This is how it has always been. For most of our bibliographic history information has been bifurcated into only two types: truth and falsehood. This simplified definition, however, does not acknowledge that information is personal, experiential, irrational, and interpreted. Failure to address information analysis holistically allows information illiteracy to thrive.

Changes in information access have, obviously, worsened the problem.[13] Information on a digital platform in 2025 is much harder to evaluate than a curated set of library books was in 1925. Users still have to detect the same biases and inaccuracies, but now they also have to check for image manipulation, artificial intelligence, and media manipulation. Reality-based entertainment, social media, and political entertainment, all of which gained massive audiences in recent decades, are not held to the accuracy standards of scholarship and traditionally curated media, like newspapers. When information is used to keep people watching TikTok accounts or cable television it falls into the category of entertainment, not news reporting, and is not, therefore, rigorously vetted. Online "info-tainment" is rarely fact-checked at all. The results are unfortunate and predictable. When researching

a topic, expedience trumps rigor. There is little room for skepticism or nuance. Both researchers and laymen isolate in echo chambers that do not challenge existing beliefs, whether they be social media or scholarly communities.[14]

INFORMATION LITERACY AT ONE INSTITUTION

The William R. Jenkins Architecture, Design, and Art Library is part of the University of Houston's system of libraries. It is embedded in the Gerald D. Hines College of Architecture and Design building, serving the programs of that college, as well as the visual arts programs of the university's Kathrine G. McGovern College of the Arts. The librarian on staff provides both curricular instruction and extracurricular workshops on research skills.

In many ways art and design students have an advantage over those in other disciplines when selecting scholarly sources because of the visual nature of their research. Many prefer to use printed material because of accuracy or ease of viewing and some standard assignments require information like building graphics that are often only available in printed materials collected by their colleges or universities. The vetting of sources is, therefore, already performed by librarians. For this reason, members of the teaching faculty do not typically request IL instruction from the library staff. The content of curricular instruction is typically determined by the professor and a particular assignment. IL may be addressed to a small degree, usually in its most basic form: a recommendation to use scholarly sources and cite them.

In 2023 the library launched a workshop series on research skills that fall outside assignment-based instruction, which provided an opportunity to thoroughly address information literacy. Given the aforementioned challenges of IL instruction, the library staff opted to reverse the standard framework in this workshop. Students are not presented with a method for evaluating data, but, rather, a method of evaluating one's own reaction to the data. The workshop introduces the psychological factors that influence a person to either accept or dismiss information. Participants explore their own critical habits. In an effort to make the content easily digestible and put the students at ease, jargon-free language and common-sense observations are employed to present research on critical thinking and belief systems, such as the work of scholars like sociologist Janja Lalich, who investigates why intelligent people believe the disinformation of high-control groups. The workshop rejects the idea that information is either good or bad and that truth is straight-forward. It is, rather, grounded in the belief that the information itself is far less important than the individual digesting it because the evaluation, acceptance, and rejection of data is highly personal.

The workshops are divided into quarters that tackle the relationship between an individual and information: qualities of information, information and human psychology, methods of disinformation and misinformation, and the role information plays in the life of an individual.

Qualities of information

The first quarter begins with a facilitated discussion on the ways people register transferred information. Students must investigate and define what qualities of information make them believe something and which ones make them disregard it, without mentioning particular opinions. They are not asked, "What is something you believe?" They are asked, "What makes you believe something?"

A typology of terms helps to organize the discussion:
• Information
• Emotional
• Experiential
• Remembered

• Sensory
• Linguistic
• Dis/Misinformation
• Intentional
• Centralized
• Motivated
• Organic
• Decentralized
• Conscious
• Unconscious

Other qualities addressed include: (a) how methods of information exchange impact trust, (b) the effect of hearing something multiples times, (c) how that effect changes depending on the interlocutor, and (d) the role emotion and bias play in their analysis of a datum.

Participants then perform three exercises of increasing depth and personalization. They first list what information they consume in a typical day, both intentionally and passively, as well as the kinds of data they receive from those with whom they interact. After they are shown evidence that sources earn trust for sound reasons, such as education and experience, but also through such superficialities as dress, accent, gesture, and appearance, they must identify the qualities they value most. In the last part of this quarter, the students explore the impact of their personal paradigm, by identifying one closely held belief and then having to rationalize a fact that contradicts that belief. They may find a way to justify it or reject it outright. Even though the fact is from a reputable source, participants are unlikely to change their preexisting belief. By analyzing mundane details like accents and gestures, as well as their response to challenging facts, students can practice analyzing their own process of interpreting data.

Information and human psychology

In the second quarter, students explore the psychological reasons people have accepted information in studies. The goal of this section is to punch holes in the notion that reason governs all decision-making and offer participants a non-judgmental space to consider their own biases, as well as those of other people, so that they will want to look deeper and engage more thoroughly when seeking information.

Major factors in acceptance are discussed:

• Positive reinforcement
o Magnanimity
o Tribalism
• Personal interest
o Convenience
o Previous investment of effort
• Validation
o Exclusivity
o Exploitation of weakness or fear
• Relationship with authority
o Trust of institutions
o Respect for authority
• Spheres of influence

The diverse motivations for accepting information as truth are discussed. Many people, for example, are inclined to accept that which makes them feel generous or important. Some feel comfortable adopting commonly held views, while others are inclined to believe unusual viewpoints, as they think of themselves as being part of an exclusive group. The group is asked to list possible spheres of influence, which might include education, socioeconomic status, language, geography, ability, and infrastructure.

Methods of disinformation and misinformation

In the third section of the workshop, the students' inclination to engage more thoroughly with information should strengthen, as they explore methods of disinformation and misinformation, which were defined and contrasted at the beginning of the workshop. Common methods of misinformation can include:

• Escalation of an idea, or the notion that people can accept falsehoods of increasing intensity if presented gradually

• Appeals to nostalgia, which plays on the normal human resistance to change, as well as emotional attachment

• Isolation from other ideas, as well as people who might have other ideas

• Coded language, which protects the misinformation from critical analysis and prevents the receiver from having to explicitly state distasteful opinions

• Uniformity within a group and conformity to what is perceived as a community standard

• Mutually exchanged misinformation, which gives the impression of consensus and quality standards

The subset of misinformation that is disinformation can use additional methods, such as:

• Disguise of sources, other viewpoints, conflicting data, or agendas

• Engendering feelings of superiority on the part of the receiver

• Entertaining the receiver, so they are more accepting of the source

• Thought-terminating clichés

• Vaguely suggesting a non-existent impartial and authoritative endorsement (i.e. "Critics say…" "Some people are saying…"

At this point participants should be able to face disproven instances of manipulation without shutting out the instruction because of their own preexisting belief systems. They can be shown, for example, the juxtaposition of images designed to evoke an emotional response and make oversimplified comparisons – one news program might consistently show a teenage murderer in their mug shot or their graduation portrait, depending on the story they are trying to tell.

The effect of technology is also presented, including digitally manipulated images, AI-generated content, and use of social media to persuade users. Students are shown how a computer algorithm can overwhelm a user with news that supports a single viewpoint, thus isolating them from opposing viewpoints and giving users a false faith in a non-existent consensus. This is not necessarily done with the goal of persuading them, but with the goal of keeping them angry and, therefore, more likely to stay engaged online. The goal of the disinformation might not be politics, but ad revenue, and the subject can be anything from immigration to Selena Gomez' haircut. The technology has already tracked user engagement and identified what makes them irrationally angry, so it knows what content is needed to keep their eyes on the screen.

Students are also introduced to forms of cultural control, like "thought-terminating clichés," a term coined by Robert Jay Lifton in his book *Thought Reform and the Psychology of Totalism*, published in 1961.[15] These clichés are so ingrained in common discourse that they can instantly quell doubts and

cause someone to stop thinking about a problem. "This too shall pass." "What doesn't kill you makes you stronger." "It could be worse." These are statements designed to make one complacent and accepting.

The role information plays in the life of an individual

The workshop ends by cycling back to the role information plays in people's lives. Worldbuilding is a term used by fiction writers and gamers, which refers to the structural elements of an imaginary world. The creator decides what physical and social rules govern their constructed universe. They determine the culture, belief systems, etc. The concept of worldbuilding is presented to the students as a form of self-actualization. They are encouraged to examine new and old beliefs with healthy skepticism.

Alfred Schutz, who was a social phenomenologist in the mid-20th century, observed that within a community, "the power of socially approved knowledge is so extended that what the whole in-group approves – ways of thinking and acting, such as mores, folkways, habits – is simply taken for granted…although the source of such knowledge remains entirely hidden in its anonymity."[16] Students are encouraged to think critically of both the information they have used to establish their own paradigm, as well as the new information they receive.

Dismantling assumptions and unquestioned beliefs is like a game of Jenga. Students are advised to accept there are certain limitations in their information literacy they cannot alter. They should not, however, limit themselves to information they wish to be true, or that which is agreed upon within their social sphere, or that which is served in a manner that makes them comfortable.

CONCLUSION

The goal of the IL workshop is not to make students able to see through every media manipulation and every bias, nor that they shift their allegiance to the scholarly sources that are most appropriate for university research. The goal is for them to develop a healthy relationship with information, so that they are more critical and more skeptical; so they recognize their knowledge is porous and possibly wrong; so that they are to a degree in control of the information that forms their world.

NOTES

[1] Paul G. Zurkowski, *The Information Service Environment Relationships and Priorities.* (Washington DC: National Commission on Libraries and Information Science, 1974), 4.

[2] Natalie Greene Taylor and Paul T. Jaeger, "Why Libraries?" in *Foundations of Information Literacy*. (Chicago: American Library Association, 2022), 104-108.

[3] Brandee J. Idleman, "Cast a Wider Net: Leveraging Canvas for Asynchronous Information Literacy Learning," *College & Undergraduate Libraries* 29, no. 1/2 (2022): 79. https://doi:10.1080/10691316.2022.2089937.

[4] Melanie Kletter, "Study Finds Fewer School Librarians in Districts that Need Them the Most." *School Library Journal* (July 2021). https://www.slj.com/story/SLIDE-study-fewer-school-librarians-in-districts-that-need-them-most

[5] Nusaiba Mizan, "HISD Has Just 23 Librarians for 274 Schools After Move to Turn Libraries into Discipline Areas." *Houston Chronicle*. May 17, 2025.

[6] Debra E. Kachel, "The Calamity of the Disappearing School Libraries." *The Conversation Blog*. July 13, 2015, accessed March 6, 2025. https://theconversation.com/the-calamity-of-the-disappearing-school-libraries-44498.

[7] Amber Willenborg and Robert Detmering, "'I Don't Think Librarians Can Save Us': The Material Conditions of Information Literacy Instruction in the Misinformation Age" (2025). Faculty Scholarship. 949. https://ir.library.louisville.edu/faculty/949

[8] Association of College and Research Libraries, "Framework for Information Literacy for Higher Education," February 2, 2015, accessed December 20, 2024, https://www.ala.org/acrl/standards/ilframwork.

[9] Pascal Lupien and Lorna E. Rourke, "(Mis)information, Information Literacy, and Democracy: Paths for Pedagogy to Foster Informed Citizenship." *Journal of Information Literacy* 15, no. 3 (2021): 56-81.

[10] Lydia Ogbadu-Oladapo et al., "Information and Health Literacy: Could There Be Any Impact on Health Decision-Making Among Adults – Evidence from North America," *Journal of Public Health* (April 2024). https://doi.org/10.1007/s10389-024-02260-9.

[11] National Oceanic and Atmospheric Administration, "What is Climate Science Literacy?," accessed March 6, 2025, www.climate.gov/teaching/what-is-climate-science-literacy.

[12] Steven Mintz, "Academic Rigor in Retreat: Is Higher Ed Dumbing Down Expectations in a Bid to Increase Completion Rates and Make College More Affordable?," *Inside Higher Ed.,* August 6, 2024. Retrieved from https://www.insidehighered.com/opinion/blogs/higher-ed-gamma/2024/08/06/higher-ed-dumbing-down-expectations-bid-increase

[13] Joshua Greene, "The Dumb Butler," in *Is the Internet Changing the Way You Think?: The Net's Impact on Our Minds and Future*, ed. John Brockman. (New York: Harper Perennial, 2011), 133.

[14] Ilkka Koiranen, Aki Koivula, Sanna Malinen, and Teo Keipi, "Undercurrents of Echo Chambers and Flame Wars: Party Political Correlates of Social Media Behavior," *Journal of Information Technology & Politics* 19, no. 2 (2022): 207-208. doi:10.1080/19331681.2021.1950095.

[15] Robert Jay Lifton, *Thought Reform and the Psychology of Totalism: A Study of "Brainwashing" in China*. (Chapel Hill: University of North Carolina Press, 1989) 429.

[16] Alfred Schutz, "The Well-Informed Citizen: An Essay on the Social Distribution of Knowledge," *Social Research* 13, no. 4 (1946): 463-478.

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GROUNDING VIRTUAL LEARNING EXPERIENCES THROUGH CREATIVE AND LANDS-BASED ASSESSMENTS

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INTRODUCTION

As three university educators who work in distinct fields (Education, Environmental Studies and Sociology) at Athabasca University (AU), we encountered each other through our shared commitment to critical pedagogies that centre students' learning and engagement. We arrived at this focus through different critical traditions, which while distinct, all strive to disrupt the hierarchies implicit to a mainstream colonial knowledge and education system. We share the critique that these hierarchies are fundamentally at odds with the learning, growth and the expansion of ideas needed for foster social change and ultimately more just societies. Traditional testing and assessment practices particularly double down on a "banking model of education"[1] wherein the focus is often on measuring the accuracy with which students reproduce knowledge deposited into them, rather than on a student's capacity to demonstrate their personal learning, critical or creative engagement with curriculum in ways relevant for them.

As faculty at an online university, we also face the unique challenges of engaging and teaching (usually asynchronously) a student body at higher risk of being disembodied in their learning experience, with the potential of feeling more disconnected from the world around them, from others (including their peers and professors), and from themselves as they navigate an all-virtual learning platform and environment. The AU student body is made up of a high number of first generation, Indigenous, Black and students of color, neurodiverse and disabled students - all of whom have been historically marginalized within mainstream post-secondary education. Many of our students are also juggling multiple jobs and taking courses part-time in support of career or work transition. Moreover, our students and colleagues are also living in increasingly expensive cities on precarious contracts and facing climate disasters. More than ever, we believe pedagogical practices need to respond to these challenges by fostering imagination and care.

We each individually found ourselves turning to the power and opportunities that creative and arts-based assessment (ABA) practices offered to us and our students. When we met through our university's faculty-initiated Community of Practice on Alternative Assessment, we found common ground in the question: *How might the learning and overall educational experience of online learners be enhanced through creative and arts-based assessment practices?* We have since embarked in a collaborative research study (underway) that builds on our individual teaching practices and draws

from the growing literature on arts-based learning and assessment practices to understand how other educators in post-secondary institutions (whether online or in person) are utilizing creative and/or ABA in their courses.

This article outlines the literature and theoretical frameworks within which we conceptualize our study. We share practical examples of arts-based and creative assessment tools, considering the relevance of arts-based assessment practices for all educators (especially online educators) in a time of Artificial Intelligence (AI) and moves to diversify, decolonize and disrupt Eurocentric knowledge systems. The main proposition of this paper is that ABA can offer instructors the opportunity to easily and quickly disrupt mainstream pedagogies towards broader decolonial, justice, equity, diversity, inclusion, and critical feminist ethics in the classroom. In support of this argument, we elaborate our theory for transformational systems change, drawing on the work of a range of cultural, feminist, race, Indigenous theorists.

LITERATURE REVIEW

The following literature review weaves together the key literatures we draw upon, organized around the following sub-sections: (i) Critiques of mainstream knowledge and assessment practices within postsecondary institutions; and (ii) Overview of arts-based assessments (ABA). These traditions include critical race, feminist and Indigenous theory, pedagogy and scholarship, as well as "Southern epistemologies", which de Sousa Santos notes do not represent the geographical South, but rather any "excluded, silenced and marginalised populations, such as undocumented immigrants, the unemployed, ethnic or religious minorities, and victims of sexism, homophobia, racism and islamophobia."[2] Key contextual factors we additionally consider include the growing presence and use of AI, and the moves to decolonize and enhance Equity, Diversity and Inclusion (EDI) within post-secondary educational spaces and institutions.

Critiques of mainstream knowledge and assessment practices within postsecondary institutions

Multiple traditions have critiqued the mainstream Western knowledge system as enacted by most post-secondary institutions in North America for its privileging of Eurocentric traditions in ways that have excluded, erased, and subjugated other ways of knowing and other knowledge systems, including Indigenous Traditional Knowledge (ITK). Simpson (notes that Indigenous knowledges are often erased. She writes, "Cognitive imperialism…rears its ugly head in every discipline every time a student is told that no literature or no thinking (is) available on any given topic from within Indigenous intellectual traditions."[3] Further, when Indigenous knowledges are included, it is often done in ways that are only supplementary (or optional readings) to Western texts within post-secondary contexts.[4]

Identified in the literature as a form of epistemicide, the issue extends beyond the issue of content (i.e. which canons and texts are taught and included) to the pedagogies and processes enacted within postsecondary institutions.[5] This includes a range of practices, such as promotion and publishing, which can reinforce and privilege certain worldviews, ways of knowing and perspectives. However, it also critically extends to the practices in the classroom, including the ways in which assessments and grading is conducted. In her chapter on "Land as Pedagogy," Simpson notes that colonial post-secondary educational systems are notable for the complete absence of students' consent: "In postsecondary education, consent [is] coercive: if you want these credentials, this is what you have to do, and this is what you have to endure."[6] For example, not only are the texts and content often pre-determined by the instructor (in ways that often reproduce instructors' own education), but assessment

practices tend to be structured in a way that privileges Western academic writing and arguments, and the reproduction of course content as a form of testing students' learning (e.g. multiple choice exams).

Freire refers to such mainstream educational practices as enacting a "banking model of education"[7] in which knowledge is held by expert instructors and deposited into students who are seen as having less or no knowledge. Assessing students' learning from within this framework is then a process of students proving that they can reproduce what was deposited into them. This implies that students' performance is more likely to be graded according to their *acceptance* of meanings provided by an instructor, rather than their critical or creative engagement with curriculum and concepts introduced. In this way the banking model of education recasts the learner as a capitalistic consumer of knowledge. Rather than education being a practice of freedom,[8] a banking model of education is considered by some to thus constitute a "pedagogy of violence."[9]

Educators theorizing and practicing critical anti-racist, intersectional feminist, and abolitionist pedagogies advocate for reevaluating mainstream university education to challenge systemic inequalities and foster transformative learning.[10] In *Teaching to Transgress*, bell hooks builds on Freire's critique of the "banking model" of education, where students are treated as passive recipients of knowledge. She argues that this approach not only limits critical thinking and creativity but also reinforces heteropatriarchal and white supremacist power structures.[11] The existing assessment model used in higher education institutions is a socially constructed system that reflects specific historical, social, and cultural forms of oppression.[12] Similarly, intersectional feminist and abolitionist educators critique standardized tests and rigid essay formats that devalue students' lived experiences, emotions, and subjective narratives, further entrenching racialized systemic oppression[13]. Additionally, assessment practices that discourage collaboration and participatory learning can perpetuate ableist, classed, racialized, and gendered hierarchies.

Mainstream assessment practices are also increasingly noted as not working in the face of students using ChatGPT, especially in the context of online universities where face-to-face contact between instructor and student is minimal or non-existent. There is a need to move away from traditional types of assessments focused on memorization, which were created in the 7th century towards more adaptive and dynamic evaluations and provided a list of recommendations including more personalized assessments that are more fit to a GenAI era.[14] Even before GenAI, it was recognized that "if learning is to be transferable, assessment must be multiple in mode and context and relate to life outside" the narrow confines of the university.[15] However, with the advent of GenAI, traditional assessments have become even more obsolete. With a tool like ChatGPT, which easily replicates the writing expectations of the dominant group, we risk more than academic honesty and the ability to measure students' learning: we lose the ability to teach to transgress; we lose the ability for unique points of views; and we risk reproducing oppressive ideas and forms. The need for innovative forms of assessment is even greater now.

According to Freire, "critical pedagogy" or "problem-posing education" affirms people "as beings in the process of becoming".[16] As he writes, "no one educates anyone else nor do we educate ourselves, we educate one another in communion in the context of living in this world." Explicitly including the more-than-human as one of the "others" with whom we learn in communion, Flynn uses the term *sympogogy* to describe "the arts of learning (and teaching) with the world." Flynn explains the etymology behind the word, with "Sym" meaning "with, together; as in sym-biotic", " -po" meaning "making", and "-gogy" as referring to "learning, wor(l)ding, storying."[17]

Anti-racist feminist scholars call for abolitionist teaching that dismantles oppressive educational practices. Engaged pedagogy encourages students to develop their voices, engage in active learning,

and integrate their lived experiences into the classroom. hooks envisions the classroom as a feminist space of resistance and liberation, where students—particularly those from historically marginalized backgrounds—feel empowered to challenge dominant narratives and create alternatives.[18] Importantly, hooks emphasizes the role of care, love, and respect in education, asserting that university learning should be a transformative practice where students thrive rather than merely survive. She advocates for pedagogical approaches that challenge traditional power dynamics and promote egalitarian relationships between educators and students. Anti-racist assessment scholars argue against assessment that measures student's ability to replicate prevailing oppressive ideologies and advocate for assessment that enable students to problematize oppressive pedagogies.[19] They are against the "fake neutrality of traditional assessments that only perpetuate white supremacy."[20]

Giving a student choice in how they might demonstrate their learning, growth and engagement is one key way that students can be given more opportunities to consent in the learning process.[21] Consent is also a key principle within knowledge systems based around notions of reciprocity, relational accountability and sympogogy vs. those of individual ownership of knowledge.[22] It is one way to help establish "good relations" that is consistent with a decolonizing approach.[23] Whilst this act of offering alternative assessment practices may not be assumed on its own to "decolonize" knowledge, the classroom or institution, it might be assumed as but one important step in the move towards efforts to decolonize a broader knowledge system. As Green and Malcolm state very clearly the "movement to decolonize the curriculum be accompanied by a rigorous re-evaluation of the assessment criteria themselves."[24] Alternative assessments allow us to step away from academic English and the hidden curriculum to a space where students are listened to even if they use a language that is different from that of the dominant group.[25]

A Freirean approach to assessment requires inclusive measures of performance while being aware that any assessment holds bias. It also accounts for feelings and emotions in the assessment process. There are various examples of how researchers and educators apply Freirian approaches to assessment. Patton wrote about ten principles that can be used to apply Freirean critical pedagogy in evaluation, highlighting the importance of co-design and fostering student self-awareness regarding where and how learning takes place.[26] Examples of this approach as applied to assessment include: DeWaard and Roberts, who use the ten principles to design an assessment based on blogging;[27] DeWaard, Forsythe and Baff, who propose sketchnoting to allow for sensemaking;[28] Macapugay and Nakamura, who use an advocacy letter as a liberating assessment strategy;[29] and Nerantzi and Corti, who use a collaborative picture book to invite students to engage in creative assessment.[30] These combined Freirean approaches to assessment encourage educators to be open to alternative ways of assessing students that allow them to develop critical consciousness of the world in addition to allowing them to engage different ways of knowing, including their feelings and emotions.

Overview of Arts-Based Assessments (ABA)

Interest in arts-based assessments (ABA) has been growing across the arts, sciences, social sciences and humanities. ABA is an umbrella term that refers to a wide array of assessments that in some way incorporate artistic practices and/or creative materials to evaluate students' learning. Such approaches might include (but are not limited to): photovoice, collage, podcasts, slam poetry, storytelling, carving, mapping, etc. Applicable to both in-person and online classroom settings (asynchronous or synchronous), ABA assessments can be offered as a supplementary or alternative way for students to innovatively engage with topics and course content beyond the conventional methods of essay writing and reflective writing. These modes of analysis enable learners to move beyond text-based - "oral or written" – methods, as advocated for in the decolonizing literature.[31] ABA are said to provoke

different types of inquiry and observations amongst learners because of accessing their visual, sensory, embodied knowledge and experiences rather than an exclusively verbal-based rationality approach that is most commonly used in traditional assessments. These types of methods enable participants to express alternate ways of knowing (e.g. embodied, relational, intuitive, ancestral, etc.) and convey subjective experience in unique, non-traditional ways.[32] This can generate new insights for learners, empower them by increasing their consent and choice whilst better meeting accessibility needs, and decolonizing a Eurocentric valorization of written text and rational knowledge as the highest form of knowledge.[33]

As we imagine possibilities for ABAs, we can draw inspiration from anti-racist, anti-colonial, queer and feminist educators working within and outside mainstream university institutions. For example, movement facilitator, somatic practitioner and pleasure activist, adrienne maree brown writes of the rich potential of sensory, somatic, text-based, visual and intellectual engagement with course subject matter as strategies to foster pleasure or joy in our classrooms.[34] brown claims that joy is a vital emotion for sparking wonder and aliveness in students as they investigate challenging topics. Furthermore, she claims that pleasurable learning can build students' confidence and encourage them to engage fully in the world, as well as critically assess the systems and structures currently threatening the earth's vibrancy. Similarly, bell hooks and Joana Macy both contend, joyful learning opportunities can foster a sense of connection and empathy for students both in the classroom and in their communities in a context where dominant white supremacist, settler colonial, and neoliberal systems and structures promote extractive cultures of individualism, competition, consumption and individualism.[35]

Furthermore, ABA encourage students to apply concepts or theories explored in coursework to creative, embodied and place-based activities, which can support students to unsettle colonialist knowledge hierarchies that continue to separate theory from practice, whilst disrupting default colonial and anthropocentric worldviews.[36] ABA provides a way to engage in relationship-building and practice relational accountability, as outlined by Opaskwayak Cree researcher and educator Shawn Wilson. He notes that research is a form of ceremony in Indigenous Traditional Knowledge (ITK), and that the choices about what we research and how we share this both in and out of the classroom is an important step towards decolonizing knowledge systems.[37]

In practical terms, ABA are pedagogical tools that prioritize learner choice in how to demonstrate their engagement with course content through the incorporation of creativity, artistic experience or materials into the assessment process. Traditional research papers or essays, multiple choice and closed book exams value memorization, Eurocentric rationality, academic writing and textual forms of knowledge and engagement. Offering alternatives to this, ABAs can offer students strategies for engaging multiple learning styles and forms of expression. ABAs provide alternative pathways for students who might struggle with conventional tests and research papers. Moreover, ABAs can encourage innovation and creativity and strengthen communication skills, multimodal literacy and knowledge mobilization, or sharing learning with multiple publics. Examples of ABA include: visual representations (infographics, graphic novels, zines, posters and concept maps to illustrate course themes); theatrical activities to reflect on historical events or social issues through performance; creative writing and poetry to reflect on course themes; music or sound based projects, including podcasts, to share concepts; movement-based responses, including dance, to somatically investigate and reflect on embodied knowledge, identity and power dynamics; visual art practices, including collage, to juxtapose images and to explore content in dynamic and holistic ways.[38]

When using ABAs in courses, it is important that instructors provide students with clear and supportive expectations and structure. For example, accessible rubrics and marking schemes that lay

out expectations for analysis, originality and connection to course concepts and themes can provide clarity for students who may be new to expressing their ideas with these pedagogical styles. Accessible marking schemes that demystify Eurocentric and mainstream notions of artistic or creative success can also reduce power asymmetries in the classroom. Students who are comfortable engaging in ABAs might come from families or backgrounds with access to the social, economic and cultural capital to participate in what mainstream culture designates as the arts. In response, provide rubrics that value creativity broadly to include a broad range of expressive and embodied practices – this term can mean crafts, woodwork, walking practices, sports, car repair, cooking and more. When grading arts-based assessments, instructors should emphasize process over product, or assess how the students engaged in creativity and depth of thought rather than assessing technical merit or artistic skill. Pairing an artist statement, reflective journal or short paragraph with the assessment provides a way for students to communicate their analytical and embodied process. Moreover, offering students the option to either complete an ABA or a traditional academic essay ensures consent and supports students who do not wish to participate in ABA.

ABA also offers critical opportunities in the context of GenAI. First, ABA are an opportunity to engage students in embodied opportunities of learning and engagement beyond writing. Second, they represent an opportunity to prepare students for GenAI-integrated learning through the use of GenAI in their artful expressions. Additionally, ABA significantly promotes academic honesty among students in the context of an educational environment influenced by GenAI. As an assessment method, ABA allows for a critical reflection of student work, encouraging originality and personal expression that are integral to genuine academic effort. By engaging students in creative processes, ABA not only align with educational principles of integrity but also fuses assessment with motivation and ethical considerations essential in a digital age. One primary way ABA uphold academic honesty is by shifting the focus from traditional rote memorization to the demonstration of knowledge through personal creativity, critical engagement and interpretation. Moreover, the arts foster a sense of authenticity and personal investment in academic endeavors. Sugiarti and Husain emphasize that a context enriched with discovery learning promotes academic honesty by encouraging curiosity and personal exploration in learning, which aligns well with the ethos of arts education.[39] When students express their understanding artistically, they are more likely to engage thoughtfully with the material rather than resorting to dishonest practices. When assessments are designed to be authentic and reflective of personal engagement, students also feel more accountable for their submissions.[40]

Additionally, the integration of ABA within a GenAI framework presents a rich opportunity for educational transformation. It enhances student engagement, personalizes learning experiences, and challenges preconceived notions of both creativity and academic assessment.

Current discussions regarding AI and artistic creation raise pertinent questions about ownership, authorship, and the potential biases embedded in AI systems.[41] These discussions enable students to engage with the ethical dilemmas of technology, preparing them to navigate complexities in the digital landscape.[42] Additionally, educators are encouraged to adopt an integrated approach that blends technology with traditional pedagogical methods, thus preserving academic integrity while maximizing the benefits of GenAI.[43] By employing ABA, educators offer students opportunities to reflect on their creative outputs and the AI technologies that inform their artistic practices, leading to a more nuanced understanding of creativity in the GenAI era.[44]

PROMISING PATHWAYS: ABA AS ONE MEANS TO DISRUPT MAINSTREAM ASSESSMENT PRACTICES WITHIN POST-SECONDARY INSTITUTIONS

To foster well rounded, holistic online post-secondary learning, educators need diverse pedagogical approaches. With the emergence of GenAI, the focus on decolonizing, or Indigenizing higher education, efforts aimed at enhancing Diversity, Equity and Inclusion (DEI), and the rapid, ongoing changes in higher education, educators are being pushed to reimagine their assessment practices in radically new ways. Such re-thinking not only supports online educators to better align with and meet students' diverse learning needs, but also address the critical commitments post-secondary institutions have to enhancing DEI and decolonizing knowledge, in response to the Truth and Reconciliation Commission's (TRC) call to action for "teachers…to integrate Indigenous knowledge and teaching methods into classrooms."[45]

ABAs offer pathways for practicing feminist pedagogical praxis in the classroom by encouraging students to activate their diverse styles of learning and to draw from their own unique and embodied experiences in the world.[46] Such assessment strategies put feminist values into practice in the classroom because they encourage students to experiment with ideas, follow curiosity and, with collaborative projects, co-create with other students or their communities. These relational and creative assessment approaches that foster curiosity and experimentation also offer alternatives to exams or essays where the student must demonstrate a masculinist sense of mastery over a topic. In some ways, ABAs offer students the opportunity to practice what Ahmed refers to as "'sweaty concepts'…concepts that show the bodily work or effort of their making."[47] Moreover, ABAs involving poetry, collage and movement practices can also provide strategies for bringing feminist surrealist art traditions into learning activities. For example, collage is a powerful medium in feminist surrealism because it is an art form that deconstructs and reassembles images in ways that unsettle traditional representations of gender, race, class and other identity categories. Historically, feminist surrealists employed collage to challenge patriarchal norms, investigate subconscious desires and the male or white supremacist gaze and to reimagine the female body outside of objectification.[48] Emphasizing multiplicity, fluidity and resistance, feminist collage practice also emphasizes accessibility and rejects masculinist and colonial male dominated art traditions.[49]

Research on the role of ABA in STEM (science, technology, engineering and mathematics) also demonstrates the benefits of creative assessment these learning strategies.[50] Engagement with complex socio-scientific issues (e.g., public health crises or global climate change) requires students to learn to become scientifically literate, as well as equitably educated. However, student assignments in STEM learning often incorporate traditional assessment practices that can reproduce exclusionary learning environments for historically excluded Indigenous and Black students, students of color, low income students, and first- generation students.[51] To address these inequities, students require assessments that integrate arts practices in STEM education, sciences, technology, engineering, arts and mathematics: STEAM. Research demonstrates that STEAM assessments that require students to apply theories and concepts in their home, community, and workplace, as well as relate their learning to their everyday lives and local contexts, can encourage interdisciplinary thinking, cross-disciplinary recognition, and application of STEM concepts to real-world contexts.[52]

Meanwhile, environmental studies education researchers show how ABAs incorporating drawing, collage, mapping, painting, sound walks, movement and more, hold the potential to move students beyond their habitual learning comfort zones, ways of thinking, and perceiving (Susplace).[53] Such assessment strategies provide students with opportunities to reflect on and investigate the inner dimensions of sustainability, engage with their emotions, reflect on their diverse cultural narratives and worldviews, and create projects to share with diverse audiences.[54] Finally, Perry & Edwards note

that ABA encourages interaction, enhances social presence, and facilitates community building for students learning in online environments. ABA "...humanize[s] the online learning environment that some students find socially isolating."[55]

Whilst, ABA can strengthen students' ability to think and create in innovative ways and build their capacity to learn about and respond to challenging topics, there are significant challenges to using ABA in classrooms, including: challenges around how to assess the quality and effectiveness of students' learning; the devaluation by many educators of ABA as not rigorous or serious; some students' sense of intimidation around ABA; the potential reproduction of racialized, gendered, classed, ableist power asymmetries when students feel intimidated; and the lack of capacities amongst educators for how to design ABA. [56]

EXAMPLES OF ABA

In this section, we share two examples of ABA – for either in-person and/or online learners. These assessment examples were adapted from "Arts-based Methods for Transformative Engagement: A Toolkit", and encourage students to break from habituated ways of thinking and perceiving, to engage with emotions, and foster a shift in their narratives and worldviews about sustainability towards the "inner-dimensions of sustainability" in their everyday lives.[57] Through these activities, students are invited to engage in interpersonal and community change, foster care connection and responsibility for a certain place or more-than-human kin. Such activities are conducive to socio-ecological innovation and course content.

Example 1: Sensory contemplation practice

Inspired by Rachel Carson who wrote, "the more clearly we focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction,"[58] this assessment activity supports students to engage in embodied and intuitive problem solving. For this assessment, students are asked to formulate an important question about a core dilemma they are facing in relation to a course topic. They are then asked to take time to closely pay attention to their surroundings and to consider what insights or wisdom emerge from their observations. In the assessment instructions, the instructor encourages the student to leave their desk and the building that they are working in and to sit quietly and notice what goes on around them, whilst engaging any of their senses – sound, touch, smell, sight, taste and more. The instructions also ask the student to notice what stands out to their senses (for example, the sound of a leaf blower, the smell of compost or some nearby flower blossoms), then relate the sensation to the question they are asking. It's important to point out in the instructions that any connections the student makes do not have to be logical or rational. Instead, the student is asked to return to where they were working, take a few minutes to write down what stood out for them, and then reflect on what insights emerge with respect to how these things relate to the dilemma and question they posed initially. It should additionally be noted that this exercise does not require that students to have access to all senses. For example, a visually impaired student can still engage in this exercise, drawing out the senses that they do have access to. In an in-person, synchronous group learning context, this exercise can be followed up with small group work in pairs to enable peer-peer learning and sharing. In an online environment, such sharing can still take place either in virtual meeting rooms (for synchronous learning) and/or in an online classroom forum (for asynchronous learning).

Example 2: Expanding Time

This assessment practice encourages students to disrupt mainstream Eurocentric and anthropocentric worldviews through problem-solving activities. In particular, the aim of this ABA is to provide students with a learning tool that unsettles settler colonial and capitalist perceptions of time that can reproduce scarcity thinking and short-term goal-making. Humans only live on earth for a maximum of 100 years. Meanwhile, our modern world encourages short-term goals and institutional quarterly returns. This restrictive Eurocentric and settler colonial sense of time can impede our ability to prioritize actions that can make positive impacts beyond our personal lifespans. Responding to these narrow notions of time, the goal of this assessment is to provide students with a tool to contemplate alternative, even surrealistic time frames and encourage them to understand time in radically different ways. In this activity, students focus on the life spaces of various non-human beings or entities, to imagine their different experiences of time, and to consider a character or element that represents different time horizons.

To facilitate this assessment, instructors provide students with a few examples of different time horizons that introduce them to different time scales. These examples might include a mountain that can exist for more than 30 million years, a building that survives 200-300 years, a wolf with a life expectancy of roughly 7 years, and a butterfly that can live up to a month. Then, ask students to focus on one character that they feel an affinity with and to spend five minutes contemplating what can be learned from this character and the alternate time that they exist in. Then ask them to reflect on how this character's alternate time relates to an issue in the course, (for example, climate change or gentrification). Ask the student to close their eyes for a minute and ask the character sitting with them what advice they can give about the issue if they could communicate with a human student. The student is asked to spend five minutes writing down their thoughts, images and ideas that come up. They should be reminded that their thoughts do not have to make rational sense, and that they can jot down whatever comes to their minds. In an in-person classroom setting, students write down their ideas in pairs, then share them. In an online environment, such sharing can still take place either in virtual meeting rooms (for synchronous learning) and/or in an online classroom forum (for asynchronous learning).

This assessment is an opportunity for learners to suspend their default judgments, discernments and decision-making and instead center intuitive, creative processes. In turn, these activities can encourage students to access spaces of possibility, or physical and mental spaces that have the potential to expand a student's perceived opportunities or action or point to ways of being ways of thinking that were previously not as obvious.

Rubrics: How to assess ABA

In the same way that ABA seek to centre the student, grading these types of assessment needs to also centre the student. Such grading frameworks must value creativity, critical engagement and individual perspectives, thus moving beyond standardization towards a more personalized assessment methodology. This approach to assessment includes how much did this work change you as a student in relation to the topic of study. If the student is creating an illustration of their learning, they need to explain how the process of creating that illustration changed them. Many rubrics call for students to provide reflections on their work. These reflections should demonstrate insights that articulate the direct and indirect connections of the artistic choices to the curriculum.

A student-centered approach to grading also includes asking students to draw connections between their work and broader themes.[59] Instructors then evaluate how well students situate their work within historical, cultural, or social contexts of the course materials. The ability of students to convey themes

or concepts through their creative engagement is another crucial criterion for assessing arts-based work.

One useful approach to such frameworks is *ungrading*. Ungrading has been identified as an important way to address top-down practices within colonial education systems. As a tool for social justice, ungrading supplements alternative ways of assessment and allows instructors to decolonize grading by inviting students to share power, challenging potential disempowerment or oppression.[60] In addition, ungrading empowers learners and gives them agency to define and defend their learning. In this approach, grading becomes a negotiation between the instructors and the student in which the student has a responsibility to demonstrate their learning, and judging a student's performance is not a subjective activity that the instructor does on their own.

Overall, ABA requires intentional and continuous feedback to help facilitate relationship-building with the student and provide them with the necessary support. Regardless of how grading is done, it should be transparent and expectations should be made clear to students, especially as many students have limited experience with ABA.

CONCLUSION, ONGOING AND FUTURE RESEARCH

In this article, we have identified ABA as a particularly promising way for educators to disrupt mainstream Eurocentric knowledge traditions. This notwithstanding, the literature on ABA, its value in the context of AI, decolonizing and DEI efforts remains limited – especially in the context of online learning environments. While the growing body of research demonstrates that these aesthetic and embodied creative learning practices can benefit learners and learning environments in a multitude of ways, there is a need for more research on the opportunities, challenges and strengths of using ABA, particularly in online learning environments. As university educators with backgrounds in ABA and alternative assessment practices, we are collaboratively working together to address this pedagogical lacuna with a view to making a critical contribution to the field of ABA in online educational settings. Through this collaborative research project on ABA, we hope to generate new insights on how ABA might enhance choice, learning and success for a diversity of learners, whilst addressing some of the most significant challenges educators are facing within the contemporary context of higher education. This research is rooted in emancipatory social change theories that promote that an alternative world is not only possible, it is already actual.[61] Exploring the potentiality of alternative assessment practices is a practice of hope in the face of hegemonic systems that can overwhelm.[62] Drawing on the theories of thinkers like Ahmed, Tully and La paperson, we propose that everyday habits and practices by people within a system are a key means by which systems change can be actualized today.[63] By simply "acting otherwise" within the rules of a system, we enact a form of civic citizenship that shows that institutions are less sedimented than we sometimes perceive them to be. Shifting the experiences of those within a given system is one way that the horizon of what is possible can change for all.[64]

How are we putting our theory of change into practice? For the first phase of our ABA research, we are interviewing scholars about the possibilities and pitfalls of ABA, critically reflecting on and sharing our own experiences practicing ABA in in-person and online settings. Future stages of research will assess the student experience, whilst exploring contributions ABA may make to shifting educational and pedagogical cultures within post-secondary contexts. Our longer-term objective through this work is to explore how ABA might contribute to a broader shift in the culture of assessment and mainstream banking-style approaches to education that persist in most post-secondary institutions today. We hope the research will not only benefit us as educators, but also our online educational community (faculty and students) at Athabasca University, and beyond.

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THE SIFTER: A CONCEPTUAL MODEL FOR CRITICAL THINKING AMONG PRESCHOOL TEACHERS IN SINGAPORE

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INTRODUCTION

As Singapore's early childhood educators learn to feed young children, they are taught by both mentor teachers at their workplaces, and lecturers at universities. Neither colleagues' vernacular wisdom nor instructors' textbook knowledge can be adopted wholesale. After all, local feeding traditions—taught by more experienced practitioners—can be overly controlling. Simultaneously, teaching by university instructors may be misaligned with the local context as it tends to be based on the predominantly Western extant literature. Thus, pre- and in-service educators must be critical of both sources of teaching to develop an integrated view of preschool mealtimes. To investigate how educators develop these critical thinking skills, I describe how analysis of data from a two-cycle action research project yielded a conceptual "Sifter Model" of preschool teachers' critical thinking process regarding mealtime issues in Singapore. I argue that preschool teachers learn to think critically about mealtimes by using their personal ideals to guide evaluation of their feeding practices.

Challenging child-feeding decisions

My understanding of the challenge that preschool teachers face in integrating diverse views about child-feeding is informed by the extant literature. Child-feeding decisions are morally- and value-laden.[1] And values vary across social, cultural and historical contexts.[2] They may differ depending on culture, class and gender.[3] Since most literature on child-feeding is from the West, it may view non-Western feeding practices as at deficit.[4] It can be challenging for preschool teachers in Singapore to trust in such advice as the existing guidance can be dissonant from their local ideals. After all, each preschool teacher's personal beliefs are shaped by their experiences as a child, student-teacher and professional educator in the society where they live.[5] When teachers are forced to enact practices in conflict with their ideals, they risk moral injury (that is, trauma from transgressing their internal moral code).[6] Thus, strength-based approaches (which also leverage local teachers' culturally specific wisdom) to child-feeding may be necessary.

Yet, local feeding practices have their limitations. In Singapore, child-feeding projects (e.g., the national Trim and Fit Program) have historically been implemented by teachers without preparatory training in children's emotional health,[7] stigmatized heavier children by withholding food,[8] and have been linked with the later onset of disordered eating among learners.[9] Certainly, Asian caregivers'

feeding practices have long been acknowledged as more controlling than those of their Western counterparts.[10]

Restrictive feeding practices are dissonant from child-feeding "best practices" described in the extant research, which tends to prioritize sociality and eating together,[11] joy from pleasurable dining experiences,[12] and self-awareness through supporting children's innate understanding of their own hunger and satiety.[13] Hence, early childhood educators can struggle to reconcile textbook knowledge with local traditions. Tensions between caregivers' cultural views and the prevailing wisdom on child-feeding may be barriers to the implementation of appropriate child-feeding practices.[14]

Positionality

Besides the extant literature, my understanding of the challenge preschool teachers face in integrating both child-feeding perspectives has been shaped by my professional experiences as an insider at a university in Singapore. In my role as an early childhood education lecturer, I have heard student-teachers express anxiety about enacting research-backed feeding practices (e.g., empowering children to serve themselves food, decide how much they eat, and engage in conversations during mealtimes) in their practicum classrooms. They shared that mentor teachers may disapprove of such actions, enforcing avoidance of mess, obedience and silence among children at mealtimes.

I too have worked as a preschool teacher in the local context and experienced similar pushback when attempting to enact responsive, research-backed feeding practices in my own classroom. Yet, having completed my tertiary education in the West, I recognize that I am an outsider-within at the local research site and must demonstrate sensitivity in interactions.[15] My own teacher training was based on Western research, which recommends feeding practices that support children's independence at mealtimes. Understandably, experienced local teachers may express culturally informed resistance to my advocated feeding actions and behaviors.

Context

The context of this research was a university that caters to both traditional (full-time students, under the age of 25) and non-traditional university students (part-time students and working adults, usually older than 30 years) in Singapore. The organization places particular emphasis on practicum teaching experiences and experiential learning. Accordingly, traditional student-teachers are routinely pushed to reconcile lecturers' and mentor teachers' teachings. Furthermore, more experienced, non-traditional students—who are already working preschool teachers—connected to the university have ample existing knowledge, which can conflict with textbook knowledge.

FIRST CYCLE RESEARCH

To feed young children in Singapore, preschool teachers must think critically about what they are taught by both lecturers and mentor teachers or risk deep confusion about facilitating mealtimes. The extant research and my lived experiences hence solidified my belief that supporting preschool teachers' critical thinking skills is key to promoting their confidence in facilitating mealtimes with young children.

In this study, critical thinking was defined as thoughtful, reflective thinking.[16] It involves questioning, prioritization, decision making and planning. I asked the research question, "How do preschool teachers learn to think critically about child-feeding knowledge taught by university faculty and workplace mentors in Singapore?"

To respond to the research question, I engaged twelve preschool teachers—selected via purposeful sampling—as first cycle participants. These educators were or had been: (a) preschool teachers in

Singapore; (b) responsible for in-class mealtimes; and (c) assigned to classes with children aged between one and six years. I gathered data through interviews with the twelve preschool teachers, observations of five preschool mealtimes, and review of five preschool menu documents.

To analyze the data, I coded the interview transcripts, observation field notes as well as menu documents concurrently and manually. I used process coding and values coding across all three data sources. I coded conceptual and observable child-feeding actions (e.g., sharing information, cleaning up) as process codes. I employed values coding to examine preschool teachers' cultural values, attitudes and beliefs regarding mealtimes. It thus emerged that participants shared values like autonomy, awareness, responsibility, consistency and enjoyment, beliefs such as intrinsic motivation and children are different, and attitudes like dislike of forcing when it came to feeding young children. Through the data analysis process, I clustered forty-two first level codes into twelve second level codes, which were then condensed into seven categories and summarized as six themes. These   six themes were (a) cooperating with adults; (b) supporting children; (c) benefiting both; (d) tuning into ideals, (e) diverging actions; and (f) seeking solutions.

Data analysis revealed that preschool teachers have social knowledge, which supports meaningful relationships with adults (e.g., mentor teachers, lecturers), children, as well as both adults and children at preschool mealtimes. It also revealed the process through which preschool teachers learn to think critically. In essence, both lecturers and mentor teachers recommend child-feeding actions to preschool teachers. By tuning into their own personal ideals, preschool teachers can identify diverging actions (that is, those that conflict with their expressed ideals) taught to them about mealtimes. This, in turn, prompts preschool teachers to start seeking solutions to dissonant child-feeding feelings and actions. In this manner, appropriate child-feeding decisions are revealed. I presented the connections among the six themes in a Sifter Visual Display – as illustrated in Figure 1.
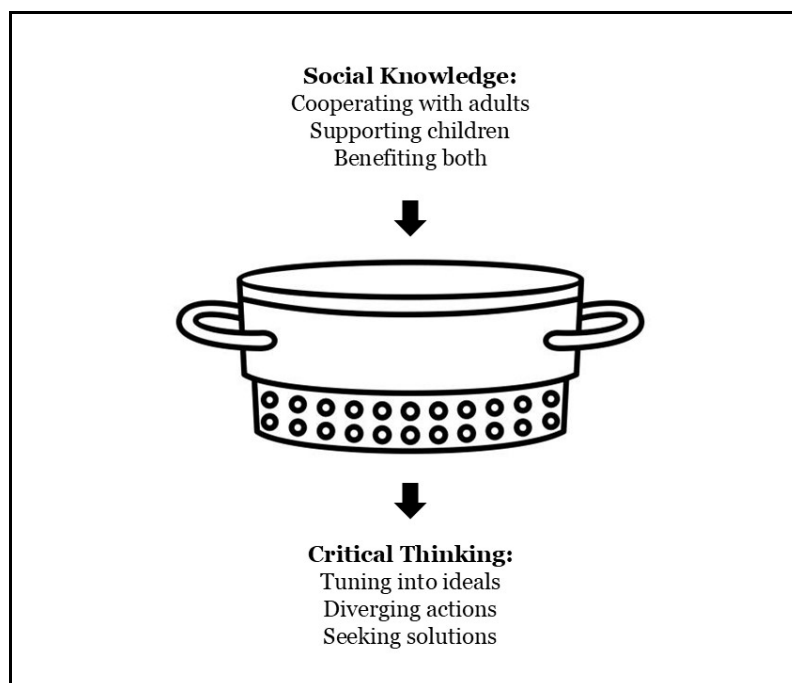

Figure 1. Sifter visual display depicting the six themes

I shared this Sifter Visual Display with participants to enable member checking. The display uses the symbol of a sifter as a play on the expression to "sift through" ideas. The sifter represents

participants' values, attitudes and beliefs. This display shows how preschool teachers use their ideals to "sift through" their socially derived mealtime knowledge to think critically about child-feeding. Participants' voices provided evidence of this sifting process. They questioned vernacular knowledge, filtering it though personal values (e.g., valuing children's autonomy) while planning future child-feeding actions. One participant said, "On one hand, there is that part of being in an Asian society that makes it important for both schools and households to enforce the finishing everything on your plate. But what I've learned is that should take a backseat to what the child feels is most natural for them." Evidently, she weighed the traditional value of obedience (in cleaning one's plate) against her personal value of autonomy to make critical decisions about feeding the children in her class.

SECOND CYCLE ACTION STEP

The first cycle data and extant literature indicated that facilitating participants' reflective critical thinking could enable them to integrate varied viewpoints to develop confidence in child feeding. The purpose of the action step was thus to construct and pilot a child-feeding teacher reflection tool for preschool teachers. The teacher reflection tool was inspired by the introspective theme of tuning into ideals. After all, the growth process of identifying diverging actions and seeking solutions to child-feeding issues hinged upon participants' capacity to tune into their ideals.

The developed teacher reflection tool included 15 child-feeding practices upon which preschool teachers were invited to critically reflect. I drafted these practices based on participants' expressed ideals and reported child-feeding actions, which were derived from my first cycle process and values codes. For instance, one practice (i.e., "I learn from children about their dietary practices at home") in the teacher reflection tool derived from the process code "sharing information" and the values code "children are different."

Another practice (i.e., "I arrange the dining environment so that it is pleasant, clean, relaxed and free of distractions") derived from the process code "cleaning up" and the values codes "enjoyment" and "awareness." Synthesizing and building on these participant ideals and strengths, the teacher reflection tool empowered early childhood educators to critically assess if their mealtime actions aligned with their own beliefs. Figure 2 shows a sample page from the child-feeding teacher reflection tool.

Figure 2. Sample page from the child-feeding teacher reflection tool

Action step goals and objectives

The goal of the teacher reflection tool was to support preschool teachers' capacity of tuning in to their ideals to make mealtime decisions. And the objective of the teacher reflection tool was to help participants critically reflect on the alignment between their ideals and actions at mealtimes. In the second cycle, I engaged eleven preschool teachers as participants. To assess the teacher reflection tool's effectiveness, I generated second cycle data through semi-structured interviews, mind maps, review of participants' personal reflection documents, as well as field notes and analytic memos.

Second cycle themes

In the second cycle, I coded the generated data using process and emotion coding. This yielded 114 first level codes, thirty-three second level codes and fourteen categories, which I summarized into four themes: (a) funds of knowledge; (b) clogging up; (c) sifting for growth opportunities; and (d) knowing more. Based on new discoveries, I expanded the Sifter Visual Display into a "Sifter Model" with the four themes and fourteen associated categories – as illustrated in Figure 3.
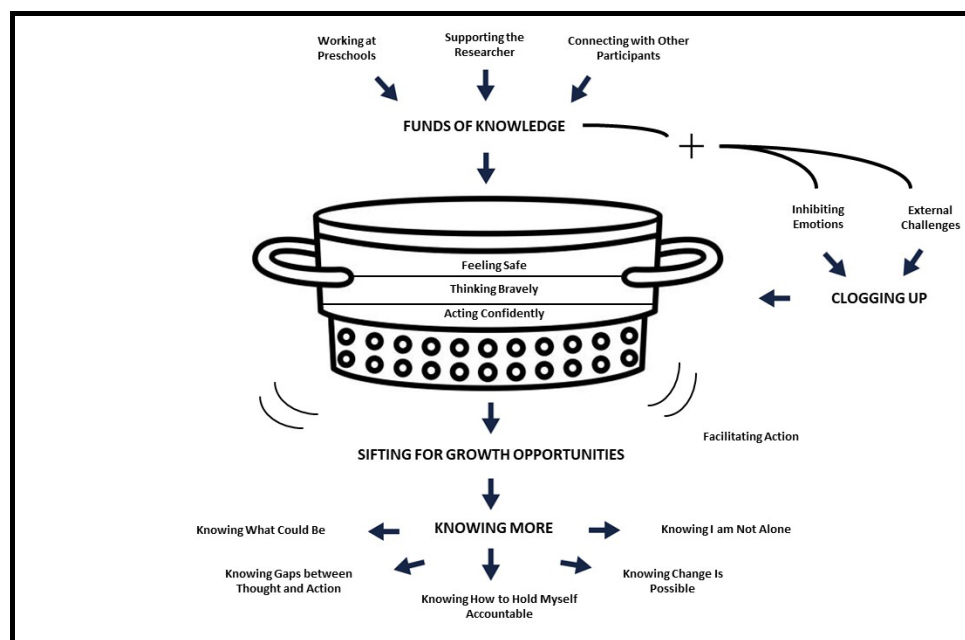
Figure 3. "Sifter Model" with second cycle updates

The extended "Sifter Model" illustrates the connections between the themes (shown in capital letters). It also includes fourteen categories (shown in title case). The three categories (working at preschools, supporting the researcher and connecting with other participants) at the top of the model constitute the types of knowledge teachers integrate as they learn about child feeding. "Working at preschools" refers to the knowledge learned from mentors due to participants' presence at preschools. "Supporting the researcher" encompasses knowledge from extant literature, which supports my (i.e., the researcher's) point of view. The category "connecting with other participants" refers to knowledge that came from participants' peers (this was considered in the larger study but is outside the scope of this specific paper).

The three categories shown within the sifter (feeling safe, thinking bravely and acting confidently) represent the layers of emotion preschool teachers pass through as they sift through their funds of knowledge related to feeding. The two categories to the right of the model (inhibiting emotions,

external challenges) are types of barriers to learning about child-feeding. The category at the bottom right of the sifter (facilitating action) relates to my own role as a scholar-practitioner in shaking the sifter to facilitate participants' reflection and critical thinking. The five categories at the bottom of the model (knowing what could be, knowing gaps between thought and action, knowing how to hold myself accountable, knowing change is possible, and knowing I am not alone) represent the kinds of subjective knowledge that might be gained through thinking critically about child feeding.

Ideals guide evaluation of feeding practices

In connecting the study's themes with the extant literature, a key finding emerged to address the overarching research question: Ideals guide evaluation of feeding practices, and participants' overall critical thinking process. Preschool teachers' values, attitudes and beliefs enabled them to decide what feeding knowledge to accept or reject. This finding aligns well with the extant literature which indicates that child-feeding decisions are morally- and value-laden.[17]

Accept

Through the first cycle, I discovered that participants had shared values (autonomy, awareness, responsibility, consistency, enjoyment), beliefs (intrinsic motivation, children are different), and attitudes (dislikes forcing). Throughout both first and second cycles, I saw how they used these ideals to evaluate or "sift through" their knowledge on child feeding. In other words, the feeding knowledge and practices which participants eventually integrated into their work had to align with their ideals. For instance, after hearing from a lecturer about the importance of pleasurable meals, a participant with two years of teaching experience (whose chosen pseudonym was Tony) wanted to adopt the practice of enabling children to have conversations at mealtimes. While it was not the norm at her preschool setting, she felt mealtime conversations had the potential to make the children "feel happier." The practice of enabling mealtime dialogue matched up with her value of enjoyment and thus passed through the metaphorical sifter, becoming part of her teaching repertoire.

Reject

When feeding practices were mismatched with their ideals, preschool teachers experienced dissonance. They were reluctant to adopt value-incompatible practices. This is consistent with the extant research, which indicates that teachers may resist proposed change because it conflicts with their values and beliefs.[18] Value-misaligned practices did not pass through the metaphorical sifter. For example, a practicum student—whose pseudonym was Giraffe—experienced dissonance when a young girl's parents instructed her to limit their child to just two scoops of lunch. The parents feared if their child ate more, she would "develop too fast." Mentor teachers encouraged Giraffe to follow the parents' instructions. However, the practice of controlling the child's food intake was fundamentally misaligned with Giraffe's values of supporting children's autonomy and awareness.

Believing in autonomy meant that Giraffe felt the child should decide how much she ate independently. Valuing awareness meant that Giraffe thought the child's own awareness of personal hunger cues should dictate how much food the child ate. To Giraffe's mind, it was not the role of adults to prevent a child from eating to the point of satiety. Hence, the feeding practice of restricting the quantity of food a child could eat felt "weird" to Giraffe. The preschool teacher felt conflicted and "didn't really know what to say about it." She resisted by covertly offering the child larger-sized scoops of food (while still limiting the child to two scoops). Her actions demonstrated both a tradition-based deference to parents' and mentor teachers' child-feeding wishes while also

incorporating elements of research-backed practice. Combining the two required critical reflection on her own ideals.

Second cycle action step evaluation

Post-action step, participants reported knowing more about child-feeding. They acquired five broad types of subjective knowledge: (a) knowing what could be; (b) knowing gaps between thought and action; (c) knowing how to hold myself accountable; (d) knowing change is possible; and (e) knowing I am not alone. They also grew more confident. As I facilitated learning through the child-feeding teacher reflection tool, some participants moved from feeling safe to thinking bravely and then acting confidently at preschool mealtimes.

The courage to act confidently at mealtimes came from being sure of the ideals that guided one's own feeding practices. Ultimately, participants were confident only when they thought critically about why they were doing what they were doing at mealtimes. The reflexivity supported by the child-feeding teacher reflection tool was particularly helpful in this regard. A participant with a year of teaching experience (pseudonym: Teacher T) shared, "Without the categorizing of what is ideal versus what I'm doing now…I might just be thinking, I am doing this because this is how everyone else in the center is doing it. And the conversation ends there. But with the reflection tool, I can kind of go, okay, I know that this is the ideal, but I also know that I am limited by this constraint. And I can feel more confident about what child-feeding decisions I'm making. Because I know, because I'm thinking about, the 'why'?"

Recommendations

Moving forward, preschool teachers may use the "Sifter Model" developed in this study to support peer-to-peer learning in their communities (either based in the workplace or in more dispersed online interest groups). After all, the model provides early childhood educator communities with a starting point from which to critically reflect on their current feeding knowledge and practices. It offers a common framework for preschool teachers to discuss the similarities and differences between their own practices, new research innovations and traditional cultural wisdom.

Furthermore, it empowers preschool teachers to see how new practices can build on and be integrated into their existing ideals, thus providing compelling reasons to change. Using the model for reflection, preschool teachers could raise their own metacognitive awareness about their assumptions, which is vital to transformative learning.[19]

CONCLUSION

In summary, this study reveals how preschool teachers use their values, attitudes and beliefs to sift through traditional- and research-backed child-feeding advice. Through this process, they think critically about appropriate child-feeding actions for their specific context, empowering them to decide which ideas to adopt and which to reject. When preschool teachers intentionally reflect on advice from mentor teachers and lecturers (e.g., using a systematic tool), they feel more knowledgeable about and confident in their own child-feeding approach. In the long run, critical thinking thus has the potential to benefit teacher self-efficacy and wellbeing.

NOTES

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POWER DYNAMICS IN PERFORMANCE EDUCATION: EXPLORING THE IMPACT OF DIALOGIC PEDAGOGY IN HIGHER EDUCATION MUSIC

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INTRODUCTION

Within popular music education (PME) there has been a movement towards self-directed learning in creative collaboration. The question of how to facilitate this is an under-researched area. While a move toward student autonomy is to be welcomed, it raises questions about inclusion. This paper reports on a case study examining the impact of dialogic pedagogy in musicianship classes for final year popular music undergraduates. It sets out the rationale and discusses the role of facilitation in enhancing inclusion. It considers whether, in an industry where discriminatory working practices are well documented,[1] there is a role within education to go beyond the building of technical skills, to equip students for a fuller chance of agency within their professional lives.

Popular music pedagogy: the question of facilitation

PME has been at the forefront of a move within music from a Master-Apprentice model[2] of instrumental instruction to learning that is student led. Green, arguably the most influential theorist in the field, describes the optimal role of the teacher[3] as "inactive",[4] although it is reported that in conversation, Green takes the view that formal elements have their place.[5]

The formal/informal labels are often defined as a dichotomy of planned teaching versus autonomous creative development.[6] However, the focus here is on whether there is a "formal" facilitation role within "informal" creative collaboration.[7]

It has been suggested that, within groups, there is a risk that an emphasis on consensus, rather than a synthesis of diverse perspectives, suppresses creativity,[8] and can even equate to a process of assimilation.[9] When considering whether students are empowered to contribute equally, it might not be obvious that established practices represent one perspective. Dominant practices or "somatic norms" are perceived as the neutral position;[10] with a negative impact on inclusion within the creative industries.[11] Consensus might be prioritised within education contexts due to the need to create outputs efficiently. Understanding how to build an effective synthesis takes time, and perhaps facilitation.

There is little literature investigating the intersection of collaborative band work and inclusion. Within the music facilitation literature, there is mention of the drawbacks of traditional garage-band models

for diversifying and decolonising perspectives, and how the building of a collective identity requires "the conscious planning and nurturing by a highly competent music teacher."[12] Some within PME warn of the dangers of no teacher intervention such as unfocussed learning, and the "hegemonic valorization of certain types of music."[13] Another study stresses the importance of "providing stimulating pre-conditions in order to establish a collaborative environment."[14] It is not clear whether all the teaching skills and interventions mentioned require technical mastery and/or facilitation expertise. There is also the question of whether the HE setting changes the emphasis, as much of the PME literature concerns schools. Creech and Hallam, in their influential paper on music facilitation, do not draw on research directly concerned with facilitation of creativity in small musical groups: "There is a dearth of research about how best to facilitate small musical ensembles, and even less is focused on promoting creativity and collaborative approaches in such groups."[15]

Dialogic pedagogy

Peer learning is a feature of PME,[16] which could be considered a type of Community of Practice.[17] Lave and Wenger warn that: "The Concept of 'Community of Practice'…requires a more rigorous treatment. In particular, unequal relations of power must be included more systematically."[18] Wenger later wrote: "If an institutional setting for learning does not offer new forms of identification and negotiability – that is, meaningful forms of membership and empowering forms of ownership of meaning – then it will mostly reproduce the communities and economies of meaning outside of it."[19]

Dialogic pedagogy has potential to address this identification and negotiability. A key figure in its lineage is Freire who critiques the "banking model" of education.[20] Instead of students being perceived as empty vessels to be filled with predetermined knowledge, the knowledge already present is valued, aligning with aspects of popular music pedagogy.[21] Having made this connection it is important to acknowledge that studies of dialogic pedagogy in the literature are from other disciplines, and it is a new approach to consider this a form of musical facilitation.

In dialogic pedagogy students tap into their cultural and lived experience and connect it to socio-economic themes to identify what is inhibiting their participation. Dialogue as pedagogical practice "serves to enliven, motivate, and reinforce creativity",[22] acknowledging the role of culture in learning, and the relationship between talk and culture.[23]

Dialogic pedagogy has characteristics designed to address power dynamics; teachers pose open-ended questions to encourage students to make connections to affect change.[24] hooks refers to this type of education as the practice of freedom[25] asserting that the conversation-based model of learning is especially useful in diverse cohorts as this mode of interaction has the potential to bridge difference and open minds.[26] Within the field of PME, Hooper argues that it is important to give students "the tools to be sociologically active and aware",[27] with Woodward underlining the need for a social justice element in the curriculum.[28] Other studies suggest the need to facilitate the consideration of student identities in relation to music within the curriculum.[29] This type of work to consider structural issues affecting musicians, while making connections with their self-defined identities, ran throughout the musicianship module in this case study.

Dialogic pedagogy is not a single method, but a repertoire of approaches underpinned by certain principles.[30] In this context Alexander's dialogic principles: to be collective, reciprocal, cumulative, supportive and purposeful,[31] were considered in the design of the environment, teaching practices and assessments.[32]

METHODOLOGY

Four semi-structured interviews were undertaken,[33] with questionnaires available to give students not chosen for interview the opportunity to contribute. This was influenced by a transformative paradigm where it is argued that western research paradigms need to be interrogated and the learning from decolonised perspectives used to transform all qualitative research methodologies.[34] In this context, the reflexive process[35] incorporating consideration of power dynamics[36] was underpinned by the belief that all research participants should be given a voice, with the aim being to make real-world improvements. Observations during collaborations served as triangulation.

The focus was two weeks where dialogic methods were taken to the "extreme". There were no starter materials, only an invitation in week one to discuss the challenges and opportunities of collaborative working before band work, and in week two to consider how intentions had played out and make adjustments.

Purposive heterogeneous sampling[37] was chosen in order to gather diverse perspectives shared with full consent for research purposes, ensuring a gender mix while capturing various perspectives including participants who self-identified as working-class, queer, neurodivergent and not born in Scotland.[38]

Reflexive Thematic Analysis[39] was used, with an inductive approach to coding.[40]

In regard to the investigation of inclusion, the study was limited by existing demographics. Being a case study, it was not designed to develop an exhaustive list of themes pertinent to all potential student identities, but to inform reflections on current practice and suggest areas for future research.

EXPERIMENTATION, PROCESS AND MOTIVATION – "I HAVEN'T FELT THAT IN A WHILE"

Leaving the comfort zone

In previous modules, collaborative creation featured self-directed work to create a set amount of assessed music. The creative collaboration in this module focused on process with no stipulation on the quantity or type of music to be created, with students able to vary collaborative partnerships, roles and identities. The dialogic weeks encouraged this further, and the data contains many references to openness, experimentation, process focus and a movement away from stress towards fun. A phrase that recurred was previously "staying in my lane" but overcoming fear to move into new directions:

- *"It's really scary, because there's a big part of me that is like, you probably couldn't do that...I've been really working on trying to notice when I'm doing unhealthy thoughts and be like, don't listen to that. Just say yes to the thing that you want to be a part of, and you can work it out along the way."*

- *"I put myself to what I feared doing because of my confidence and that little voice in your head telling you how what you're doing is wrong. It was very scary and even a bit overwhelming but it was definitely worth it to realise that I can actually do it."*

When students might be scared as part of the process, building a supportive environment is vital (see theme three).

Combatting perfectionism

Some responses contrasted this openness with the inhibitory impact of perfectionism on creativity:

- *"I always have a voice in my head...you need to do this well, you need to impress them, because you don't know how they're gonna work with you later on, you don't know what opportunities they can give you. Whereas if you go in with an open mind, you can get more out of it."*

Rediscovering motivation

Previously, when music was perceived as an assessment chore, students lost the vision of what originally motivated them. Their most accomplished skill had brought them the best results, inhibiting development of skills that risked lowering marks. The process-focus helped students to rediscover their passion and expand into new directions, resonating with the motivation model of Ryan and Deci.[41]

- *"Experimenting with what does and doesn't work...I haven't felt that in a while. So it's been nice to re-establish that and be like, it's fun coming up with things together. It's fun."*

- *"I was able to think about the things that I want to work on, the things that I enjoy doing with music and the things that kind of make up the music that I make, like, why do I make the music the way I do? And it kind of brought it back to the roots of why that is."*

Negotiating boundaries, preparing for the real-world

A neurodivergent student felt a process focus was the solution to the extreme anxiety that had caused absenteeism in lower years in band work. The message that we should be preparing students for the "real-world" of the industry can lead to high pressure environments. If "normal" professional environments are problematic, as set out for example in the 2024 UK Parliament Misogyny in Music report,[42] then perhaps, as well as critiquing these norms, taking a gentler, long-view educational approach can lead to enhanced self-awareness and the growth of confidence necessary for navigating the difficulties of professional work environments:

- *"Being aware of my own personal needs, has made me a better collaborator, because I'm able to communicate them, and therefore create this understanding between me and other band members."*

REFLECTIVE PRACTICE AND SELF-EFFICACY – "BACK TO THE ROOTS OF WHY"
Levelling the playing field

Previous modules often used blogs to capture process. Respondents discussed the greater depth of their current reflective work, enhanced by group reflection, leading to increased confidence in collaboration. Reflective work is necessarily often accompanied by discomfort, thus it is unlikely that students will push beyond the surface level without encouragement and knowledge that others are experiencing similar issues. The benefits of doing so can be substantial:

- *"I held everybody in such a high regard, because they're all such talented people. But they were also feeling the same things that I was feeling. And then that made me also feel on the same level, like a level playing field with everybody. And I was like, oh, this must be just things that I can work on personally, as opposed to, I'm not good. I am good enough but it's just the way I'm viewing myself. And, yeah, each week, I've seen that change. And I've grown more confident."*

- *"It was nice to trace back certain thought processes and feelings...I came into uni being like, I'm very undeserving of my place...Lately, I feel like a musician. And it's nice seeing what's changed throughout that whole process. And definitely, looking into my upbringing, coming from a working-class family...and just following those kinds of pieces...the things that we aren't actively stopping ourselves from doing but we subconsciously do...And the more I practice that, throughout this year, the more I've realised that I've been catching those moments and talking myself out of that headspace."*

Questions as facilitation

All students identified a role for the lecturer in facilitating discussions. Posing questions that spark reflection was seen as effective in contrast to an expert providing solutions, but often they only understood this later on in the process, initially wanting directive answers.[43]

- *"If that hadn't been asked I probably wouldn't really have tried to explore it within myself."*
- *"You have to know yourself before you can work effectively with other people."*

VULNERABILITY AND THE SAFER SPACE – "THEY WERE ALSO FEELING THE SAME THINGS THAT I WAS FEELING"

Many participants discussed the inherent vulnerability in creative collaboration and its cumulative evolution from difficult to useful, even pleasurable:

- *"Anything creative, it's coming from a personal perspective, it's coming from someone's, you know, aspirations and feelings and sense of self."*
- *"I think music is so vulnerable: if you're creating with someone and you don't feel that comfortable or understood by the person that you're with, you're not going to create something that you feel proud of."*
- *"Being comfortable with being uncomfortable is a really important skill, especially as a musician… Sometimes you have to be a little bit uncomfortable to be able to grow."*
- *"…it was just a nice feeling to be…vulnerable I guess."*

Safer space and support

A neurodivergent respondent pointed out that although sharing was helpful, not everyone wants to share, but co-created safer/brave space rules established in week one of the module helped.[44] It is important that sharing is never compulsory. Where an important principle needed to be discussed, and student perspectives were not forthcoming, it proved helpful for a lecturer to share experiences. This should be done carefully, the risk being that a lecturer's perspective can seem like the "right" answer and inhibit discussion.

- *"You* [lecturer] *would mention something and then I'd identify with that and then I would mention something and it just sparked a really good discussion."*

Respondents discussed how discussion fed into collaboration, becoming a valued aspect of creative facilitation, enhancing peer awareness and supportiveness within the group.

- *"Working with the really hard stuff in class before and then you'd go in and you'd be thinking about that and you'd be more aware of everybody else around you and their feelings and how collaboration works as a whole."*
- *"It felt like peers were more helpful and supportive opposed to creative ensemble work in the past when it was straight into a rehearsal room without any sort of dialogic method being used."*

Equity

It was striking to hear that othering can occur for some students even when they like their collaborators, with implications for inclusion:

- *"I know that it's probably, or at least in part because of being neurodivergent, that I do end up feeling really awkward in certain situations. And I do feel like I don't fit in. And it's, I think it's especially hard when it's with people that you do like, and you really value, when you like what they're doing, and you enjoy being around them."*

All respondents, even those who identified as predominantly solitary musicians, valued the learning that had come through this experience of collaboration, with class discussion the recurring suggestion

as to what made it work. While some students might not need this process to thrive in collaborations, there is an equity consideration.

Trust

Interviewees talked about trust in the lecturer being vital for trusting peers:
- *"Having the trust with them [lecturers] first, would then lead to trust with everyone else."*
- *"Because we all trust you, we're also able to trust each other."*

The "pure" dialogic approach in this two-week study, where rich discussion was student generated, could only emerge from having built a cumulative relationship of trust within the cohort.

CONCLUSION

Inclusion does not just happen by inviting people to participate.[45] Personality clashes and non-aligned interests will occur when people are brought together solely through enrolment. Resolving this is not about reacting to issues so much as allowing students to embrace process, set intentions and co-create an environment that will facilitate the actioning of their plans. When students negotiate discomfort together, supported by the safer space underpinned by dialogic principles, the playing field is levelled to some extent. This has a helpful effect on the power dynamics of the cohort with a resulting positive impact on inclusion. Students were observed noticing and helping peers who were struggling even on different instruments to their own. In a time of isolation, social network bubbles and oppositional interactions online, these holistic skills are not automatically in place. It is also notable that all students expressed that they found value in dialogic working; it was not simply of benefit to those who might more often be marginalised.

The dialogic allows for disagreement, but instead of direct contradictions, questions posed require students to interrogate their position critically. Whilst cohorts at some institutions may be confident in participating in a more oppositional approach, this could be exclusionary for students from certain demographics. This co-creation of learning, is no less rigorous when done properly, but is perhaps more likely to lead to bridging[46] and growth when addressing difficult topics; for instance when students discuss problematic narratives formed through their families and social networks.

Trusting students to lead the discussion is only possible after cumulative trust building. The educator's reflective practice is vital to establish and maintain trust, navigating fast moving discussions using facilitation skills that might go unnoticed. Skill is also needed in facilitating critical thinking within difficult topics,[47] areas that may need to be addressed in training.[48]

During the "pure" dialogic sessions, the groups' artistic outputs accelerated, perhaps due to the enhanced communication and intentionality for collaborative work. This was not anticipated, in fact, one student suggested that to aid exploration they should dispense with expectations for creating a song quickly. However, as this was a case study this finding would require further research.

The dialogic approach is more than discussion, requiring consideration of the environment,[49] for example the circular seating layout used in this study, which might not always be possible to replicate. Certain elements could translate to larger cohorts: peer reflection and support can be enabled via the creation of action learning sets,[50] and assessments designed to capture process and enable autonomy will, alongside other potential benefits discussed earlier, allow students to explore what is culturally relevant to them. It is important though to note that assessment topic divergence does not equate to an end to the usefulness of peer working.

With identities being plural and fluid, learning that allows self-determination, while facilitating trust and awareness, can help to guard against accidental exclusion. When students felt included, even students who felt it was not their preferred creative habitat found benefit in collaboration. There will

always be a place for technical training and access to expertise within music education, but as an element within the wider course offering, dialogic pedagogy can be invaluable.

Further research is needed in the field of facilitation of ensembles, within both popular and classical music, examining the holistic elements and approaches that could enhance inclusive creative collaboration.

Although there are studies in dialogic pedagogy in some other disciplines, there is still much to explore and comparisons to be made. In this form dialogic pedagogy is a strand in belonging as pedagogical practice. This small study suggests that it has the potential to enhance inclusion and attainment both within education and beyond into professional practice, making it an area worthy of wider attention.

NOTES

[1] Sally Anne Gross and George Musgrave, *Can Music Make You Sick? Measuring the Price of Musical Ambition* (London: University of Westminster Press, 2020).

[2] Helena Gaunt, "Apprenticeship and Empowerment: The Role of One-to-One Lessons" in *Musicians in the Making: Pathways to Creative Performance*, ed. Jane Rink, Helena Gaunt, and Aaron Williamon. (New York: Oxford Academic, 2017): 28-56. https://doi.org/10.1093/acprof:oso/9780199346677.003.0003.

[3] Where teacher is used rather than lecturer, it generally refers to a schools context in the literature. However terms like teacher, tutor and lecturer are all used somewhat interchangeably within the context of the popular music department at UHI Perth.

[4] Lucy Green, *How Popular Musicians Learn: A Way Ahead for Music Education* (Abingdon: Taylor & Francis Group, 2017), 186.

[5] Rupert Till "Popular Music Education: A Step into the Light." In *The Routledge Research Companion to Popular Music Education*, ed. Gareth Smith et al. (Abingdon: Routledge, 2017), 24.

[6] Green's definition categorizes the informal as self/peer taught in opposition to "traditional" taught models of music education. Green, *How Popular Musicians Learn,* 5.
Folkestad gives a related definition: formal is sequenced beforehand, informal is not. Göran Folkestad, "Formal and Informal Learning Situations or Practices vs Formal and Informal Ways of Learning", *British Journal of Music Education* 23, no. 2 (2006): 141. https://doi.org/10.1017/S0265051706006887

[7] Folkestad argues that while learning can be informal, teaching in whatever capacity is always formal. Folkestad, 142.

[8] Seana Moran, and Vera John-Steiner. "How Collaboration in Creative Work Impacts Identity and Motivation." in *Collaborative Creativity: Contemporary Perspectives*, ed. Dorothy Miell and Karen Littleton (London: Free Association Books, 2004), 19-20.

[9] Antonia Darder. *Reinventing Paulo Freire: A Pedagogy of Love*. (New York and London: Routledge, 2017).

[10] Nirmal Puwar. *Space Invaders: Race, Gender and Bodies Out of Place*. (Oxford: Berg, 2004).

[11] Orian Brook, David O'Brien, and Mark Taylor. *Culture is Bad for You.* (Manchester: Manchester University Press, 2020).

[12] Heidi Westerlund, Heidi Partti, and Sidsel Karlsen "Identity Formation and Agency in the Diverse Music Classroom" in *Handbook of Musical Identities*, ed. Raymond MacDonald, David J. Hargreaves, and Dorothy Miell (Oxford: Oxford University Press. 2017), 505. https://doi.org/10.1093/acprof:oso/9780199679485.003.0027.

[13] Ian Axtell et al. "Popular music meta-pedagogy in music teacher education", in *The Routledge Research Companion to Popular Music Education*, ed. Gareth Smith et al. (London: Routledge, 2016), 360.

[14] Tamara W. Rumiantsev, Annemarie Maas, and Wilfried Admiraal "Collaborative Learning in Two Vocal Conservatoire Courses", *Music Education Research* 19, no. 4 (2017): 381.
https://doi.org/10.1080/14613808.2016.1249363.

[15] Andrea Creech, and Susan Hallam. "Facilitating Learning in Small Groups: Interpersonal Dynamics and Task Dimensions." in *Musicians in the Making: Pathways to Creative Performance*, ed. Jane Rink, Helena Gaunt, and Aaron Williamon, (Oxford: Oxford University Press, 2017), 72.
https://doi.org/10.1093/acprof:oso/9780199346677.003.0004.

[16] According to Green, young popular music learners do not tend to have a community of adult musicians to learn from, instead acquiring skills by themselves and forming a type of Community of Practice made up of peers. Green, *How Popular Musicians Learn,* 16.

[17] Wenger defines a Community of Practice as 'people who engage in a process of collective learning in a shared domain of human endeavour' in Etienne Wenger, *Communities of Practice: A Brief Introduction* (Alexandria: National Science Foundation, 2011): 1. https://hdl.handle.net/1794/11736

[18] Jean Lave, and Etienne Wenger. *Situated Learning: Legitimate Peripheral Participation*. (Cambridge: Cambridge University Press, 1991), 42.

[19] Etienne Wenger, *Communities of Practice: Learning, Meaning and Identity*. (Cambridge: Cambridge University Press, 1998), 269.

[20] Paulo Freire. *Pedagogy of the Oppressed*. 30th anniversary ed. New York: Continuum, 2000.

[21] Lucy Green, *Music, Informal Learning and the School: A New Classroom Pedagogy*. (Aldershot: Ashgate, 2008).

[22] Antonia Darder, *Reinventing Paulo Freire: A Pedagogy of Love* (New York and London: Routledge, 2017), 102.

[23] Min-Young Kim, and Ian A.G. Wilkinson. "What is Dialogic Teaching? Constructing, Deconstructing, and Reconstructing a Pedagogy of Classroom Talk" in *Learning, Culture and Social Interaction* 21 (2019): 83. https://doi.org/10.1016/j.lcsi.2019.02.003

[24] Darder, Reinventing Paulo Freire.

[25] hooks emphasizes that this freedom goes in both directions as the teacher also grows: bell hooks, *Teaching to Transgress* (New York and London: Routledge, 1994), 21.

[26] bell hooks, *Teaching Critical Thinking* (New York and London: Routledge, 2010), 45.

[27] Emma Hooper, "Do the Stars Know Why They Shine?" in *The Routledge Research Companion to Popular Music Education*, ed. Gareth Smith et al. (London: Routledge, 2016), 163.

[28] Sheila C. Woodward, "Social justice and popular music education: building a generation of artists impacting social change," in *The Routledge Research Companion to Popular Music Education*, ed. Gareth Smith et al. (London: Routledge, 2016), 395-411.

[29] Both these sources concern global majority students, but by extension this assertion has relevance for any marginalized identity: Maria C. Fiorentino "Exploring Citizenship and Belonging with Two College Music Students of Marginalized Identities" *Music Education Research* 22, no. 2 (2020) 145-158. https://doi.org/10.1080/14613808.2020.1719991.

Nathan Holder *If I were a Racist: Exploring Racism in Music Teaching*. (London: Holders Hill Publishing, 2024), 16-17.

[30] For discussion of the repertoires of dialogic pedagogy see Kim and Wilkinson *What is Dialogic Teaching?* 72.

[31] Robin Alexander. *Towards Dialogic Teaching: Rethinking Classroom Talk*. Thirsk: Dialogos, 2017, (40-44).

[32] Word count prevents expansion on how assessment aligns with dialogic teaching in the module. In brief, some key aspects to assignment design include capturing process instead of outputs, allowing for divergence through a rubric that measures the "how" instead of the "what", embedding the peer discussion element, and a variety of assessment modes.

[33] Virginia Braun, and Victoria Clarke. *Successful Qualitative Research: A Practical Guide for Beginners*. (London: Sage, 2013), 17.

[34] Vivetha Thambinathan and Elizabeth Anne Kinsella "Decolonizing Methodologies in Qualitative Research: Creating Spaces for Transformative Praxis", *International Journal of Qualitative Methods* 20, (2021): 2. https://doi.org/10.1177/16094069211014766

[35] Thambinathan and Kinsella, 2021, 3.

[36] Linda Tuhiwai Smith, *Decolonizing Methodologies* (New York: Palgrave, 1999), 176.

[37] Kassiani Nikolopoulou "What Is Purposive Sampling?", Scribbr (2022), accessed March 14, 2025. https://www.scribbr.com/methodology/purposive-sampling/#:~:text=Maximum%20variation%20sampling%2C%20also%20known,are%20more%20extreme%20in%20nature

[38] As a woman of colour with other intersectional identities, my lived experience informs my interest in inclusion. Whilst guarding against projecting my experiences on to students, the reflective duty of any educator and researcher, this gives insights into unconscious bias and somatic norms.

[39] Virginia Braun and Victoria Clarke. *Thematic Analysis: A Practical Guide* (Los Angeles: SAGE, 2022).

[40] Tom Clark et al. *Bryman's Social Research Methods*. 6th ed. (Oxford: OUP, 2021).

[41] Richard M. Ryan, & Edward L. Deci, "Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions", *Contemporary Educational Psychology 25*, 1 (2000), 65. https://doi.org/10.1006/ceps.1999.1020

[42] UK Parliament Women and Equalities Committee, *Misogyny in Music* (London: House of Commons, 2024). https://publications.parliament.uk/pa/cm5804/cmselect/cmwomeq/129/report.html.

[43] Explaining the inherent confusion during the early part of an effective learning journey using a theoretical model such as the "Learning Pit" can be helpful for students: James Nottingham, *The Learning Pit*. (2023), accessed March 14, 2025. https://www.learningpit.org/wp-content/uploads/2022/10/Learning-Pit-Overview-Guide-NonAd.pdf

[44] Brian Arao, and Kristi Clemens. "From Safe Spaces to Brave Spaces: A New Way to Frame Dialogue Around Diversity and Social Justice," in *The Art of Effective Facilitation: Reflections from Social Justice Educators*, ed. Lisa M. Landreman and Valerie A. Sterling, (VA: Stylus, 2013), 135-150. https://doi.org/10.4324/9781003447580

[45] john a. powell and Stephen Menendian, *Belonging without Othering: How We Save Ourselves and the World* (Stanford: Stanford University Press, 2024), 135.

[46] powell and Menendian, *Belonging without Othering*, 174-175.

[47] Holder *If I were a Racist,* 17.

48 Woodward, *Social Justice and popular music*, 407.
49 Kim and Wilkinson, *What is Dialogic Teaching?,* 82.
50 "*Action Learning Sets,*" MindTools, accessed March 13, 2025, https://www.mindtools.com/anbk5zv/action-learning-sets

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ECOLOGICAL ATTENTION AS ETHICAL PRACTICE: SIT SPOTS AS PERSONAL AND PEDAGOGICAL RESOURCE

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INTRODUCTION

This paper outlines moral components involved in attention and attentiveness. In particular, it maintains that attentiveness to the natural world can challenge anthropocentric modes of perception and biases and aid in generating robust experiences of ecological belonging and connectivity. To ground the theoretical analysis, the paper argues that the emerging practice of sit spots represents one example of ecological attention that has potential as both a personal and pedagogical resource. The paper concludes by highlighting the possibility for sit spots to be revised to better acknowledge and enact attentiveness as a reciprocal rather than unidirectional activity.

Moral Attention

Mainstream ethical theories have traditionally overlooked the moral force of attention. There has instead been a preoccupation with developing universal ethical rules which oversee action. Popular examples of this can be witnessed in Utilitarianism, which maintains that all actions or rules must align with the utility principle, as well as in Deontological ethics, which, in its secular form, is founded upon the Kantian categorical imperative, and its religious configurations, tend to be associated with top-down commandment-style mandates. In both instances, what or who is being attended to in each context, and the quality of attention involved, is not regarded as a particularly relevant dimension of moral action.

Notwithstanding the above tendencies, attention does appear to have an underappreciated centrality in the context of moral life and moral experience. It is noteworthy that the reality of certain practices, such as factory farming and mineral mining, are often intentionally hidden from sight from the consumers of their products. Conversely, it is intuitive that the more one attends to something or someone, the more likely it is that a meaningful relationship will develop. As feminist and virtue ethicists have also noted, attentiveness has close ties to effective care. Joan Tronto, for example, articulates attention as first among the four elements of care, defining attentiveness as a simple practice of "recognizing the needs of those around us" through the suspension of "one's own goals, ambitions, plans of life, and concerns."[1]

Iris Murdoch and Simone Weil on Attention

Beyond instances in feminist and virtue ethicists, it is philosophers Iris Murdoch and Simone Weil who have provided perhaps the most robust analysis of moral attention. For Weil and Murdoch, and against the current of much traditional ethical philosophy, morality does not centre upon choice, action or intention, but rather the quality of attention one pays to another. It is how one perceives the world that matters. Underlying this understanding of attention is a moral realism which conceptualizes moral progress as coterminous with the grasping of an objective reality. Morality, in other words, depends upon clear vision.

But, how to attend in such a way that accurate perception can be developed? Weil and Murdoch contend that the ultimate aim is to cultivate a deep receptivity to the world that transcends egoism. The problem, as they see it, is that humans have a natural tendency to be selfish, to perceive the external world and others through a filter of self-oriented desires and intentions. This results in not really seeing. In one famous example, Murdoch notes the mother-in-law who was so blinded by prejudice that she distorted the reality of her daughter-in-law, perceiving her as rude and juvenile, when she was, in fact, spontaneous and youthful.[2] One can think of other similar instances: not listening to your friend's troubles because you are thinking of what you want to eat for lunch, failing to notice the homeless person on the street, unfairly judging your neighbour because of their choice of car. In each case, the inner world colonises the reality of the outer world, resulting in a lack of clarity and an associated deficiency of relevant moral qualities, such as empathy and understanding.

In contrast, true attention, as conceptualized by Murdoch and Weil, is the process of perceiving the world as it really is, beyond the influence of such distorting conceptual activities. As such, it involves an active practice of passivity. Weil says that "the I must become passive" in attention.[3] In what Murdoch terms 'unselfing,' she similarly contends that the "direction of attention is contrary to human nature, away from the self, and onto the surprising variety of the world."[4] Attending to another in such a self-erasing manner is not easy to achieve, however. It requires habitual practice, virtues of openness, patience, and sensitivity, as well as the intention to see reality clearly. Despite this difficulty, it remains an essential and necessary dimension of moral life according to both Weil and Murdoch. It is only when we perceive correctly that ethical action can follow. As Weil states, for example, "to know that this man who is hungry and thirsty really exists as much as I do—that is enough, the rest follows of itself."[5]

Ecological Attention

While Murdoch and Weil's accounts were focused on human-human relations, recent analyses have considered how this normative understanding of attention can relate and be practiced beyond human communities. It is indeed reasonable to suggest that animals and the natural world more broadly may be especially subject to the tendency to be reduced and consumed by processes of human hubris, egoism, and desire. It is also the case that animals and other ecological entities tend to be routinely not noticed. Ecological literacy is low in many communities, and common phenomena such as 'plant blindness' demonstrate what Baptiste Morizot has called a "crisis in sensibility," in which skills and habits of close ecological attention to are radically reduced alongside, and in tandem with, the depletion of biological diversity.[6]

Along this vein, scholars such as Eliza Aaltola and Josephine Donovan have drawn upon Murdochian philosophy to maintain that a purposeful attentiveness to animals, and especially animal suffering, can play an important role in countering anthropocentric bias which reduces nonhuman lives into resources and consequently hinders empathetic responses.[7] They argue that the tendency to see an animal as a mere thing is more difficult to uphold when an effort is made to attend to animal reality

beyond human projection, or as Paul Taylor says, "as it is in itself, not as we want it to be."[8] Interestingly, other scholars make similar points even in the context of abiotic organisms. In Tom Birch's concept of universal consideration, for example, he posits that in order to get beyond preconceived biases about what or whom ought to receive moral consideration—a deliberative process which he argues has traditionally been entrenched with human exceptionalism—one should adopt a simple practice of "thoughtful, reflective, meditative attentiveness" in relation to the natural world.[9] Resonating with Murdoch and Weil's unselfed approach, Birch maintains that this practice of attentiveness ought to be achieved with a state of mind that is "clean of any *a priori* criterion or respect and positive value."[10] This can then elicit what he calls a 'deontic experience,' an organic normative response which both reveals the value of the attended-to while also generating an affective reaction of care and compassion. As Birch writes, "looking, watching, attending to others of all sorts can become epiphanic moments" in which "one realizes part of what it is to be a human being."[11]

Yet, while ecological attention seems intuitive and applicable here in these examples, there are questions that remain. For one thing, what does a practice of ecological attention actually look like such that the above normative benefits are accrued? Furthermore, are there already practical examples of ecological attention that connect with the above theoretical dimensions? To respond to these points, and to attempt to make more concrete the philosophical elements of the above accounts, the following section turns to analyse the use of sit spots.

The Practice of Sit Spots

The practice of sit spots refers to a relatively simple act of sitting outside for a period of time while attending to the surrounding environment. While this is a basic process of observation that humans have always done, as a stand-alone practice used in pedagogical and personal contexts, the formal practice of sit spots have grown in popularity in recent times, largely inspired by writers such as Ellen Haas, Evan McGown, Scott Sampson, as well as Jon Young, whose work I will focus on predominantly here.

In *What the Robin Knows,* Young describes the practice in the following way: "Simply go into the woods, sit there, pay attention, otherwise do nothing."[12] He outlines guiding rules for the activity. Ideally, the sit spot should be the same place, and the practitioner should go there every day or with some kind of regularity. The sit spot location should also be accessible and close to either the house, school, or institution. Furthermore, the practitioner should spend a significant amount of time spent there. Young recommends 30-45 minutes, but it can be less or more. Beyond that, the goal is simply to slow down and pay attention to who and what is there using a combination of senses that gradually gain in sensitivity over time.

Although Young's primary motivation is in using sit spots to learn bird language, sit spots are now increasingly incorporated in nature connection and outdoor education programs more generally, as well as in schools and other traditional educational contexts. In group or class settings, sit spots are often adapted so that students go to their sit spots individually and subsequently come together in a group to share reflections and observations. Instruments like binoculars can be used, and journals are sometimes incorporated so that students can write down or draw observations. However, the latter are not absolutely necessary. The basic aspect in all iterations is simply to attend closely to the particular environment one is in.

Sit Spots as Personal and Pedagogical Resource

Considering the growing use of sit spots in education, as well as their ostensible salience with the theoretical dimensions of moral attention, it is worthwhile to further investigate how the normative and practical dimensions can be better integrated. In relation to this, a couple of points of apparent connection emerge. First, the process of deep, focused attention to the natural world implicit in the sit spot practice does appear to align with the above-stated aim of transcending self-orientation, and in the context of more-than-human others, an overbearing human orientation. The goal of sit spots is to focus outward, to cultivate habits and skills of sensitivity such that the lives of other beings are made more visible. This itself has radical implications. As Robin Wall Kimmerer says, for example, "Paying attention acknowledges that we have something to learn from intelligences other than our own. Listening, standing witness, creates an openness to the world."[13] The intentional act of noticing thereby challenges a long-standing reductionist tendency to maintain what Murdoch calls a "small world," a view of the external natural world bound by its instrumental use or narrow relation to self and human interest.[14]

Furthermore, when human experiences are decentred through an attention to the experiences and lives of more-than-human others, this can not only challenge reductionist tendencies which reproduce unethical human-animal relations, but also elicit a resituating of the personal and the human within the broader ecological collective more broadly. In one example provided by sit spot facilitator Dave Strich, he notes a student who asked a tree during a sit spot experience: "how many storms have you been through?"[15] In this example, the student conveyed a recognition of a shared continuity, an understanding that the tree too experiences storms. Yet, there was simultaneously an acknowledgment of alterity. The tree may experience storms, but differently; they are outside, they have lived for a shorter or longer time, they have roots that go deep down inside the ground, and so on. Consistently noticing the spatial and temporal situatedness of other beings, and their shifting seasonal patterns, can help to recognize one's own situatedness and entanglement in the larger community. From this a sense of belonging can emerge, in which a space transitions into a place where oneself and others live. Young states, in fact, that what tends to be most surprising for people who begin the practice of sit spots is the recognition that other animals and nonhumans have homes. As he says, for example, "An understanding of territory is often a revelation: This bird lives here! This is her address."[16] This acknowledgment connects also to the central problem as understood by Murdoch and Weil, namely, that we often have trouble seeing the ontological independence and reality of other beings, underscored by Weil's contention that "attention is the difficult realization that something other than myself is real."[17]

Sit Spots Revised

While the above analysis points to linkages between the theoretical aspects of moral attention and the practical example of sit spots, the integration also makes visible areas in which sit spots may benefit from possible revision. For example, another central thread that connects the normative accounts of attention with the practical components is the ideal of invisibility. The 'unselfed' observer, in which the attentive process is so outward-focused that the self disappears, is a central element in Weil's, Murdoch's, and subsequent framings. Similarly, in Young's description of sit spots, he recommends cultivating a routine of invisibility in which the goal of the sit spot practitioner is to blend into the background and to remain either hidden or ignored by those that you are perceiving.

As previously mentioned, while the quietening of the self and its cognitive activities does appear to play an important role in countering personal and anthropocentric bias, having invisibility as an ideal also brings up possible concerns. For example, if one disappears or becomes invisible in the act of

attention, how can a relationship actually emerge between observer and observed? Furthermore, from a normative perspective, how can the moral agent improve relations with another if one is unselfed, a point which is also made by Robert Charles Reed, who posits that if the goal of attention is to lose the self, "nothing would be left of the self as an ethical agent."[18]

These concerns, while perhaps seemingly trivial or abstract in the context of sit spots, may point to a larger worry in relation to the ideal of invisibility inadvertently conjuring the tendency for humans to self-appoint themselves as the observers of a world that cannot observe them back. This resonates with Donna Haraway's notion of the "god-trick," in which humans assume the possession of an ostensible "view from above, from nowhere."[19] In this assumption of objectivity, the human perspective emerges as the most or only legitimate one, consequently reducing or negating the validity or existence of another. Extended to attention, this can lead to troubling assertions about the superiority of human attention in contrast to nonhuman attention, and thus serve to reproduce old-standing and simplistic dualisms between human and nature.

In response to these concerns, however, it is possible to take inspiration from other accounts of attention that emphasize more explicitly the relational character of attention. The philosopher Deborah Bird Rose, for example, counters the common picture of a human observer looking onto the natural world by highlighting the way in which all attention is reciprocal. When we attend, we are often, if not always, also being attended to in some form. Humans, as she writes, exist in "networks of attention" such that animals and other nonhumans are also always looking back.[20] Not only can this revelation challenge the sense of passivity often attributed to nonhuman nature, but it may also further develop the affective feelings of belonging that practices of attention can offer. As Rose maintains, "the greatest desire of all life is to be attended to."[21]

As this pertains to the practice of sit spots, it may be possible to translate these theoretical elements into tangible change. Young, for example, explains that the first sacred question in sit spots is "what did you observe?"[22] Notably, this is often the first question used in journal prompts in schools and other pedagogical settings. What is usually not asked, however, is the reverse: what observed you? This simple shift—from 'what did you observe' to 'what observed you'—may be normatively powerful in a couple of ways. For one thing, it can better highlight the attentiveness and curiosity of other beings, aspects of nonhuman life which are often undermined. Furthermore, it may also initiate a heightened reflexive self-awareness underscored by the recognition that attention is not only unidirectional, but also relational. The experience of being looked back upon by a nonhuman other can motivate and inform ecologically sensitive habits of coexistence, underscored by the broader understanding that we are not alone and that our identities are always already co-constituted, both physically and normatively.

CONCLUSION

This paper has integrated insights from moral accounts of attention with a practice of ecological attention in the context of sit spots. Through this analysis, I argued that (1) attentiveness has a salient normative role and that (2) the practice of sit spots present a compelling example of ecological moral attention, offering the potential to foster and enrich relationships with more-than-human others and generate more robust manifestations of ecological belonging. The final section carries along the threads which connect the conceptual and practical aspects by also making visible dimensions in which sit spots could benefit from possible revisions. In this case, the ideal of invisibility and self-denialism was recognized as a possibly troubling assertion of human exceptionalism in certain cases. In response, the paper concludes by highlighting the possibility for sit spots to be adapted in a manner that better acknowledges ecological attentiveness as a relational and reciprocal activity.

NOTES

[1] Joan Tronto. *Le Risque ou le Care? [Risk or Care?]* (Paris: Presses Universitaires de France, 2012) 127.

[2] Iris Murdoch, *The Sovereignty of Good* (New York, NY: Routledge, 1971).

[3] Simone Weil, *Gravity and Grace* (London, England: Routledge Classics Psychology Press, 2002), 56.

[4] Murdoch, *The Sovereignty of Good*, 66.

[5] Weil, *Gravity and Grace,* 119.

[6] Baptiste Morizot, *Ways of Being Alive*, trans. Andrew Brown, (Cambridge, UK: Polity Press, 2022).

[7] Eliza Aaltola, "Love and Animals: Simone Weil, Iris Murdoch and Attention as Love," in *The Routledge Handbook of Love in Philosophy*, ed. A. M. Martin (London, England: Routledge, 2018); Josephine Donovan, "Attention to Suffering: Sympathy as a Basis for Ethical Treatment of Animals," in *Beyond Animal Rights: A Feminist Caring Ethic for the Treatment of Animals* , ed. Josephine Donovan and Carol Adams (New York, NY: Continuum, 1996).

[8] Paul Taylor, *Respect for Nature: A Theory of Environmental Ethics* (Princeton, NJ: Princeton University Press, 1986), 120.

[9] Thomas Birch, "Moral Considerability and Universal Consideration," Environmental Ethics 15 (1992): 313.

[10] Birch 1993, 313.

[11] Birch 1993, 324

[12] Jon Young, *What the Robin Knows: How Birds Reveal The Secrets of the Natural World* (Boston, US: Houghton Mifflin Harcourt, 2012), 56.

[13] Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Minneapolis, MN: Milkweed, 2013), 121.

[14] Iris Murdoch, *Metaphysics as a Guide to Morals* (London, England: Vintage, 2003), 175.

[15] Dave Strich, "Reflective Sit Spots" Green Teacher 97 (2012): 24.

[16] Young, *What the Robin Knows*, 44.

[17] Iris Murdoch, "The Sublime and the Good" Chicago Review*,* 13 (1959): 51.

[18] Robert Charles Reed, "Decreation as Substitution: Reading Simone Weil through Levinas" The Journal of Religion, 93 (2013): 28.

[19] Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective" Feminist Studies, 14 (1998): 560.

[20] Deborah Bird Rose, "Taking Notice" *Worldviews: Environment, Culture, Religion,* 3 (1999): 98.

[20] Rose, 99.

[21] Rose, 99.

[22] Young, *What the Robin Knows*, 45.

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UNFAZED, UNPREPARED AND EXCITED: DEVELOPING INCLUSIVE PEDAGOGY AND KNOWLEDGE EXCHANGE BETWEEN STUDENTS, ACADEMICS AND THE FILM INDUSTRY AT FALMOUTH UNIVERSITY'S SOUND/IMAGE CINEMA LAB

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INTRODUCTION

Falmouth University's Sound/Image Cinema Lab (hereafter the Lab) is a multi-faceted project covering pedagogy, creative practice, creative practice research and more traditional outputs in projects that are collaborations between the university and professional filmmakers, production companies and state bodies, such as the BFI. The collaborations foster knowledge exchange for how projects see students, staff and industry professionals working alongside each other, with knowledge flowing dynamically between all parties. A PhD student studying the Lab, in a 2023 interview (currently unpublished), asked who the guiding influences were for the Lab and the instinctive reply was Agnès Varda, John Cassavetes and Werner Herzog. People often liken the Lab to a film studio, or a production company, but that's never how it's operated. The driving spirit of the Lab has always been independent 'indie' film as opposed to studio practice, though there are of course crossovers. It is a Lab. If anything it operates more like a traditional university research centre than anything else, and the justification for this which will be covered shortly.

The independent film community is intensely active in Cornwall, UK. Something I noticed when I arrived to teach there in 2013. It was inspiring to see filmmakers getting on with the business of making work, figuring out how to fund micro, and low, budget films and distributing them themselves locally and sometimes beyond. Cornwall is a place where filmmakers, and artists of all ilks, have just got on with the making and showing of work, regardless of UK national interests in, or perception of, what they are doing. The perception of Cornish film has changed massively in the last few years due to the rise of Mark Jenkin, whose work is referenced in more detail later, but nothing has really changed on the ground. The culture and community is the same, as are the opportunities and infrastructure. The Sound/Image Cinema Lab is a way to support and cultivate indie film in Cornwall, as a storytelling source, and filmmaking resource.

It is productive to think about the Lab as a site of rebellion, resistance and innovation in a film education and wider education context. One of the main inspirations for the name and the approach was the Sensory Ethnography Lab at Harvard, responsible for practice research work at an enviable

level. Their highest profile projects are the works of Véréna Paravel and Lucien Castaing-Taylor, including the highly acclaimed experimental documentary *Leviathan.*[1] Their work is highly research informed, operates as research itself, but also exists as commercial cinema, commercial in an arthouse documentary, festival circuit sense, but commercial nonetheless.

One of the goals of the Lab was to see if this kind of approach could be achievable in a UK micro budget context, and also with narrative fiction work at the centre of the output pool. Another interesting comparison, one that hasn't wholly been worked through as of yet but is interesting, is the LA Rebellion and its filmmakers. A group of filmmakers including Charles Burnett, Haile Gerima and Julie Dash emerged from the UCLA film programme, on a course titled Ethno-Communications, in the 1960s and 1970s. A comparison could be found in hinking how those filmmakers came from a research-informed practice environment to make fiction work that resonated with documentary and experimental formal elements but for whom the resonance and narratives of place were central, whether the Watts of *Killer of Sheep,*[2] the South Carolina of *Daughters of the Dust*[3] or the African West Coast and American South of *Sankofa.*[4]

Across the spectrum of filmmakers that the Lab seeks to be in dialogue with in terms of practice, there is a shared sense of having to find ways to make work outside of the continuously narrow parameters of formal industry funding support mechanisms. While some of the filmmakers mentioned so far have made work that has been sanctified by studios or high-end film and television producers, in the main they made work using innovative methods both in terms of film form and forging production opportunities that were outside the norm. Those making work within the Lab always feel like indie filmmakers

Making films independently and teaching independent filmmaking teaches artists how to think laterally in terms of getting money to make work. When starting out, pre-Academia, often the way to make films or put on film festivals was to foreground education and development as the project focus, with filmmaking the vehicle through which to teach and develop. Since entering academia and making fiction films, this approach has stood me in good stead because it relied on experience in communication with people and getting them to support something that met their agenda or strategy, where it felt like making a film was secondary.

In many ways it was. Doing this, as in framing the making of a narrative feature film funded by the school of film & television as a pedagogic project, was not disingenuous or deceitful. That is exactly what it was. The production of the feature film *Wilderness'*[5] was a test case, a proof of concept. Shooting a feature film in 12 days with a predominantly student crew and skeleton professional HoDs, and professional actors, could have been a disaster in terms of making a film that anyone would want to see. If it was something that travelled, that was seen as a lovely bonus. The goal was and remains, providing students the chance to learn in a way, during their formal studies, that is not possible in a classroom environment.

In the end *'Wilderness'* traveled internationally and was sold for digital distribution, all parts of the process that brought in further pedagogic value to students and graduates. The filmmaking undertaken by the Lab is always in service of changing perception of what a film course, film department, film school looks like and can and should be engaged in. Both inside the institution and further afield.

Impacts

For the UK research audit REF202, a impact case study was submitted for the Lab. One of the impacts was around behavioural change and the evidence included testimonies from leading UK film producers that talked about working with the Lab on film projects. Some of the testimonials talked about how their perception and behaviour had changed.

One of the driving aims was to create a model for working with film professionals that would create a behavioural shift in UK film industry, taking Ross Gibson's maxim to heart that 'research and creative practice can join effectively to make knowledge whenever their conjunction causes a shift away from ignorance and befuddlement'.[6] In this case, ignorance and befuddlement from industry individuals and organisations regarding what a university can bring to narrative, scripted film production for the microbudget form. Each opportunity to make a film is aligned with a concurrent opportunity to change perceptions and increase the scope of the Lab. This is where the Lab-ness of it all comes in. These projects are experiments and they are testing a number of things:

They are testing the parameters of formal film pedagogy - what's possible, what's missing, how teaching and learning can be accessed through industry partnerships.

They are testing the scope, value and identity of the relationship between industry and academia.

They are testing existing film practices as understood in industry and seeing how fit for purpose they are and what other models may exist.

And after each experiment there is an iterative response that carries forward into the next one. The belief film schools should be engaged in narrative film production stemmed from an understanding, including through my own doctorate - 'How Film Education Might Best Address the Needs of UK Film Industry and Film Culture', from 2015 - with university film practice education the central form of education under discussion - of some of the narrative work that emerged from degree programmes in the US including the aforementioned *Killer of Sheep* as well as work by Spike Lee and John Carpenter. This was coupled with understanding developed through a sustained period of independent filmmaking of the dearth of opportunities to make funded short and feature-length film work in the UK.

One of the challenges was in how to integrate the films being made with the more traditional written outputs on pedagogy that were written alongside the films. This is where Rod Stoneman's formulation of practice research as 'new forms of systemic enquiry that make their own processes manifest'[7] played a key role. In 2022 *Media Practice and Education* published an article that discussed the process of establishing the Sound/Image Cinema Lab as a formal entity through the writing of the REF2021 impact case study following a period of years of activity. The article was titled '*Without the Filmmaking There is no Research*'[8] and highlights how The Lab learned that in order to test the pedagogic models it wanted to implement, in order to change behaviour, enhance student experience, build attainment growth, accelerate graduate outcomes and challenge existing industry practices, it needed to make films. The making of the films is what matters first and foremost.

There is also a particular type of impact that comes from working with students on these kinds of professional films. The Lab is producing a new feature documentary, providing support in the form of hosting the grade and mix of the film in-house, with staff working on it alongside students, who will be invited into the mixes for the duration the filmmakers are on-site in Autumn 2025. It's the largest scale post-production resource support the Lab has undertaken. By focusing on post-production it means the Lab can provide support at a high value level that isn't financial. It's exciting because Tim and Rob are indie filmmakers whose sensibility matches that of the Lab's, and who buy into the fact that to make work this way often means working in unconventional or uncommon ways. When co-director Rob was asked during a masterclass at Falmouth's School of Film & Television how involved he wanted the students to get and what opportunities in the room they could look forward to, his response was to plonk them down at the console and let them go wild with it.

The Lab & Mark Jenkin

The films the Lab work on are professional, commercial projects, so they are led by working filmmakers. Some of whom are on staff, some from a wider professional network of peers. The most successful of these filmmakers is BAFTA-winning Cornish filmmaker Mark Jenkin. Mark's work has played festivals including Cannes and Berlin and his last film *Enys Men*[9] was released in US cinemas by NEON.

Mark has worked at the university for over a decade and is now the distinguished professor of film practice, in honour of his success. He still works closely with the Lab, and is present in classrooms in a number of ways. He shares his process with students regularly and invites them in to collaborate. Students have worked on his sets for years in a variety of roles. He has just finished editing his latest film, due for release later in 2025. A number of students worked on the film and one in particular has become a key member of Mark's team.

Luca is an undergraduate student, now in his third and final year of study. Opportunities are prioritised for first- and second-year undergraduates so that they can bring their experiences back into their studies and improve working practices and culture. This has been highly beneficial for peer learning opportunities and for the to be able to track progress. Attainment averages also increase for students who engage with Lab projects. Some students can work on 5 or 6 commercial films - shorts, features, documentaries - by the time they graduate. Our professional filmmaker collaborators value the work university staff - often former or current part time industry professionals - and students do and the perspective they bring. For this paper, Mark was asked about Luca and he was effusive about his impact on the film. Here is what he said about working with Luca on the film across 2024, shared at length because of its value to the idea of the flow of knowledge between students to professionals:

'Luca has very quickly gone from being a trainee on set during the last week of principal photography, to an ever present post-production runner during the numerous dialogue looping sessions, to an integral part of the creative team as the project moves towards picture lock. After a couple of days of making tea and coffee and taking lunch orders Luca began to offer opinions in the studio. Ordinarily I might have found this distracting, maybe even a little inappropriate, but his manner was always positive, his attitude enthusiastic, and crucially his intuition, in my opinion, was spot on. I began to rely on his gut reactions to what I was doing in post-production as like many trainees he occupies a unique position: he is both insider and outsider. Having not read the script and only been present for limited days of shooting he has the distance from the unfolding narrative of the film that an audience member has but he is also present when key creative decisions are being made at the last and most significant part of the creative process; the edit. Luca has a foot in both camps and in short has become an essential collaborator, to the point that following a recent screening of a rough cut, I took the executive producers' notes without question, as most of their points had already been flagged by Luca'.

This is what Mark said about working with students in general:

'I benefit hugely from the relationship I have with students. Up to this point screening rough cuts of my work to both undergrads and postgrads is the closest I have come to 'testing 'my movies and their reactions and thoughts are ones I feel I can trust as they are seldom reluctant to offer their opinions which are often well-informed as they are in the midst of an active analysis of what our wonderfully young art form was, is and could be, and I feel privileged to have access to this cutting edge'.

CONCLUSION

Another filmmaker whose work and process heavily inspires the Lab is Abbas Kiarostami. He saw filmmaking and teaching similarly, illuminating his thinking in the following way 'my hope is that this will be a conversation, a dialogue. We are all links in the chain, ideally full of ideas about each other's work, hopefully flowing with empathy for one another".[10] Non-hierarchical, empathetic filmmaking sounds positively radical when compared to contemporary industry practice where over-work, exploitation, bullying and exclusionary practices are still rampant. Who would want to work in that way, and who would want to prepare students only for that eventuality?

The making of the films results in pedagogy, and research into pedagogy. They are high-quality examples of knowledge exchange, contributing as outputs to REF and KEF, and augmented by traditional pedagogic research, ensuring that the films are presented as sophisticated practice research portfolios.

John Mateer writes that 'these types of collaborations are evolving and the ability to conduct them is becoming increasingly fluid [however] looking at the revenue generated by even the most successful of these projects, it is evident that benefits need to be considered using other measures'[11] which is what is happening at more institutions across the university sector. Having a single project that incorporates the creative voices of a variety of filmmakers with association to the university, across fiction, documentary, short and feature, that can be assayed into reporting on REF, KEF, Alumni Reporting, Employability and Student Experience initiatives, makes sense in UK HE as it stands presently.

The Lab collaborates with filmmakers who are also seeking new ways to work. Behavioural change at the level of how films are made, not just who with. There are filmmakers who are tired of the narrow and stringent practices of mainstream industry and are looking to make work in more humane and compassionate ways. As Kiarostami adds 'we are here together, which means the joys and misfortunes you experience […] will be shared by everyone. We are all comrades together'.[12] Students, Staff, Professionals, Comrades. There is the idea that indie filmmaking is impossible within a corporate and regulated structure such as a university, but that doesn't have to be the case. Indie is a mindset more than it's anything else, and as Benjamin Harbert says so eloquently 'perhaps authenticity lingers somewhere within the commodity'.[13] Rebellion matters.

NOTES

[1] *Leviathan*, dir. Lucien Castaing-Taylor and Véréna Paravel (2012; Cambridge, MA: Harvard University), Film.
[2] *Killer of Sheep,* dir. Charles Burnett (1978; Los Angeles, CA: UCLA), Film.
[3]*Daughters of the Dust,* dir. Julie Dash (1991; Los Angeles, CA: Geechee Girls), Film.
[4] *Sankofa,* dir. Haile Gerima (1993; Washington DC: Mypheduh), Film.
[5] *'Wilderness',* dir. Justin John Doherty (2017; Luton: Baracoa Pictures), Film.
[6] Ross Gibson, "Foreword: Cognitive Two-Steps", in *Screen Production Research: Creative Practice As a Mode of Enquiry,* ed. Craig Batty and Susan Kerrigan (New York: Springer International Publishing, (2018), vii.
[7] Duncan Petrie and Rod Stoneman, *Educating Filmmakers: Past, Present and Future* (Bristol: Intellect, 2014), 235.
[8] Neil Fox, "Without the Filmmaking There is no Research", Media Practice and Education 23,2 (2022): 161-173.
[9] *Enys Men,* dir. Mark Jenkin (2022; Kernow, UK: Bosena), Film.
[10] Paul Cronin, *Lessons with Kiarostami* (New York: Sticking Place Books, 2015), 1**.**
[11] John Mateer, "A fistful of dollars or the sting? Considering academic–industry collaborations in the production of feature films," Media Practice and Education 19,2 (2018): 153.
[12] Paul Cronin, *Lessons with Kiarostami* (New York: Sticking Place Books, 2015), 5**.**
[13] Benjamin Harbert. *American Music Documentary: Five Case Studies of Ciné-ethnomusicology* (Middletown: Wesleyan University Press, 2018), 171.

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John Doherty, Justin, dir. *'Wilderness'*. 2017; Luton: Baracoa Pictures. Film.

REPRESENTATION AS SELF-DISCOVERY IN THE LIBERAL ARTS CLASSROOM

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INTRODUCTION

This paper examines how collage-based self-portraiture can serve as an effective pedagogical tool for identity exploration and academic decision-making in higher education, drawing from a case study of the "Planning, Decision-Making, and Reflection (PDR)" course at Leuphana University's Studium Individuale program. I argue that collage is particularly suited for emerging adults navigating academic choices because it mirrors the fragmented yet integrative nature of identity formation, providing a tangible process for constructing meaning from multiplicity.

Self-portraiture has long been a profound medium for self-exploration, offering a means to interrogate and construct identities through visual representation. The collage medium adds an unparalleled dynamism to this process, enabling artists to juxtapose fragments of visual, textual, and material elements to craft multifaceted representations of the self. Cynthia Freeland, in her seminal essay "Portraits in Painting and Photography," observes that portraiture transcends mere likeness, instead functioning as a powerful way of presenting an expressive and revelatory sense of self.[1] In this vein, self-portraiture is uniquely positioned to engage with the malleability of identity, exploring how individuals see themselves and wish to be seen. Collage deepens this inquiry by embracing the fragmented nature of identity, constructing narratives that are simultaneously disjointed and cohesive, reflective of the layered complexity of human experience.

This interplay between fragmentation and unity positions collage as a uniquely powerful medium for self-portraiture, particularly in its capacity to interrogate both internal and external dimensions of identity. Freeland's assertion that portraiture engages with the subjective and objective aspects of representation resonates strongly in the context of collage, where layering, recombination, and materiality amplify the exploration of selfhood. By integrating disparate elements such as photographs, magazine clippings, textures, and found objects, creators navigate questions of cultural context, societal positioning, and personal narrative. This makes the medium particularly relevant in academic contexts, where students are encouraged to reflect on their evolving identities, ambitions, experiences, and intellectual pursuits. Collage, in this sense, becomes not just an artistic exercise but a methodological tool for fusing personal and academic inquiry.

Pedagogical Frameworks Supporting Arts-Based Methods in Higher Education

The implementation of collage in higher education finds theoretical support in two particularly relevant pedagogical frameworks that illuminate why this approach can resonate within the higher educational context. Elliot Eisner's theory of artistically rooted cognition and John Dewey's experiential learning philosophy provide complementary lenses through which to understand the transformative potential of collage in academic contexts.

Eisner's work on artistic cognition offers a powerful foundation for legitimizing arts-based approaches within traditionally text-centric higher education environments. In *The Arts and the Creation of Mind*, Eisner articulates how engagement with artistic processes activates distinct cognitive operations that remain largely undeveloped in conventional academic exercises. According to Eisner, the arts help students develop the ability to make decisions without strict guidelines, encouraging them to trust their intuition, notice subtle details, reflect on the impact of their choices, and continuously refine their work through revision, imagination, and exploration of alternatives.[2] This capacity for qualitative reasoning in making judgments without predetermined criteria proves essential for students navigating the ambiguities of academic and professional decision-making.

Eisner identifies several cognitive dimensions uniquely developed through artistic engagement that directly correspond to the collage-making process. First, he emphasizes "flexible purposing," the ability to shift direction as a project unfolds.[3] This skill can be exemplified when students revise their initial collage compositions in response to emerging meanings. Second, Eisner highlights how arts practices develop "form and content relationships," allowing students to understand how material qualities shape conceptual expression;[4] precisely what can occur as collage makers select and juxtapose diverse materials to convey their identities.

John Dewey's experiential learning theory complements Eisner's cognitive focus by emphasizing the continuity between aesthetic experiences and meaningful education. In his seminal work *Art as Experience*, Dewey challenges the artificial separation between intellectual development and sensory engagement, arguing that profound learning emerges when thought and feeling are integrated through purposeful activity. He writes, "experience in the degree in which it *is* experience is heightened vitality. Instead of signifying being shut up within one's own private feelings and sensations, it signifies active and alert commerce with the world; at its height it signifies complete interpenetration of self and the world of objects and events."[5] This description precisely captures the collage-making process in the PDR course, where students actively engage with material objects to explore the relationship between their internal identities and external academic contexts.

Dewey's concept of an experience, which he defines as a unified interaction that stands out from the general stream of experience, provides a framework for understanding how collage creation functions pedagogically. According to Dewey, genuine experiences possess "a unity that gives them their name, that meal, that storm, that rupture of friendship. The existence of this unity is constituted by a single quality that pervades the entire experience in spite of the variation of its constituent parts."[6] The collage exercise exemplifies this unity as it constitutes a singular learning experience unified by the student's personal narrative. This quality of unity makes the exercise memorable and impactful, distinguishing it from more fragmented academic activities.

Furthermore, Dewey's emphasis on the continuity between past, present, and future experiences illuminates why collage creation can prove effective for students contemplating academic decisions. The collage medium inherently embodies this continuity, allowing students to incorporate elements representing their past experiences and decisions, present circumstances, and future aspirations. As students arrange and rearrange these elements, they actively engage in reconstructing their experiences,[7] and imagining how past learning might inform future possibilities.

Collage as a Pedagogical Tool: A Case Study

This case study illustrates how the theoretical foundations of identity development and self-exploration find practical expression in the PDR course, a core component of the Studium Individuale liberal arts major at Leuphana University in Lüneburg, Germany. As one of only seven required modules in the major, the PDR course is designed to support students in navigating the unique academic freedom and responsibility afforded by the program. With approximately twelve major programs, seventeen minor programs, and hundreds of elective modules available over six semesters, students face a vast and often overwhelming range of curricular possibilities.

This complexity is particularly significant given the developmental stage of the students enrolled in the course, typically aged between 20 and 25. This age group corresponds to what psychologist Jeffrey Jensen Arnett identifies as the life stage of "emerging adulthood,"[8] a period marked by identity exploration, instability, self-focus, a sense of being "in-between," and openness to possibilities. Arnett argues that this stage is developmentally distinct because "many different directions remain possible, when the scope of independent exploration of life's possibilities is greater for most people than it will be at any other period of the life course."[9] In this context, the challenges of academic and life decision-making are not merely logistical, but deeply existential and psychological.

The PDR course is intentionally placed in the fourth semester, a pivotal point in students' academic journeys when early experiences have accumulated and more consequential choices about majors, minors, internships, or potential thesis topics begin to crystallize. At this juncture, the course equips students with the tools for critical self-reflection and intentional planning, encouraging them to integrate their diverse intellectual interests and personal values into a coherent educational trajectory.

A key pedagogical component of the course is the use of collage as a medium for self-exploration. Collage is introduced not merely as an artistic exercise but as a metaphorical and cognitive tool for reflecting on identity, complexity, and decision-making. It offers students a creative, accessible means to visually articulate their lived experiences, intellectual passions, and future aspirations. In alignment with Arnett's emphasis on heightened self-reflection during emerging adulthood, collage-making facilitates a form of self-portraiture that is both introspective and dialogical.

To ground this creative practice in theory, students first engage with Freeland's philosophical examination of portraiture, particularly her insight that portraits reveal aspects of the self.[10] This dual dynamic encourages students to think critically about the process of self-representation: what they choose to disclose, obscure, or layer in their compositions. The collage thus becomes an aesthetic space where fragments of identity are arranged, rearranged, and made visible in complex ways.[11]

Unlike other visual mediums like painting and drawing, collage is inherently approachable, making it especially well-suited for students from diverse disciplinary backgrounds, even those without prior technical exposure to the arts, as in the case for most of our cohort.[12] With only scissors, glue, and found materials, students from a wide range of disciplinary backgrounds can engage deeply in a process-driven, interpretive activity where there is no "wrong" way to proceed or create.[13] This freedom allows students to engage with their creativity in an unguarded and experimental manner, drawing on their unique perspectives and experiences.

During our 120-minute session, students work on their collages individually but within small groups. They work with a diverse range of materials, including magazines and newspapers, which provide a familiar starting point and introduces them to the possibilities of found imagery. These mass-produced materials offer a wealth of evocative phrases, textures, patterns, and visuals that students could reinterpret to tell their own stories. In addition, students are invited to bring in fabrics, photographs, or objects of their choosing that might hold personal significance.

To foster originality and maintain an open imaginative space, the course minimizes prescriptive visual examples, instead presenting only the groundbreaking work of Hannah Höch (1889–1978), a key figure in the Berlin Dada movement.[14] Höch's photomontages, while not always explicit self-portraits, are deeply personal reflections of her experiences as an individual navigating the societal and cultural constraints of her time in Weimar-era Germany. Her works serve as both inspiration and a springboard for discussion, encouraging students to explore the socio-political dimensions of identity within their own collages.

As can be seen in a collage created by a student in Figure 1, readymade and mass-produced puzzle pieces brought from home strongly contrast against organic elements found in nature such as grass and plants, sky, and fish.

Figure 1. Collage created by undergraduate student in the "Planning, Decision-Making, and Reflection," course.

As can be seen in another collage in Figure 2, another student integrated a personal photograph, juxtaposed against the dramatic image of a large ship struck by a massive fish, surrounded by tumultuous waves. Text, both handwritten and clipped from magazines, floats within the waves, adding layers of meaning and emotion. Words in German, the student's native language, evokes tension and unease, addressing perhaps themes of life's unpredictability, societal standards, and existential disconnection. Phrases like "Umruhestand" a play on retirement and unrest, "alles ist egal" (everything is indifferent), and notions of randomness and insignificance convey a poignant juxtaposition between private introspection, public existence, and the tension between humor, wit, and concern. This vivid composition encapsulates the duality of navigating internal and external realities, demonstrating how collage can externalize deeply personal narratives while engaging broader cultural and philosophical themes. Overall, these visual examples underscore the medium's versatility and ability to meet each creator where they are, making it an inclusive space for exploration and expression; not just an art form but a means of storytelling, capable of gluing together fragments into cohesive, visually compelling narratives.

Figure 2. Collage created by undergraduate student in the "Planning, Decision-Making, and Reflection," course.

As students sift through materials, cut and arrange fragments, and experiment with layering, they engage in a process that balances intuition with deliberate decision-making. The atmosphere in the room becomes electric with creative energy. The rhythmic sound of scissors slicing through paper, the shuffle of magazine pages, and the quiet hum of focused concentration. Even the most reserved students, who may shy away from other forms of participation, lean into the process, their hands confidently gluing, pasting, and rearranging elements with precision and care. Heads bend over workspaces, punctuated by the occasional burst of laughter or a murmured question. This shared focus transforms the classroom into a vibrant studio, where the act of creation fosters not only self-expression but also a collective sense of engagement and purpose. The imperfections that arise in the process, such as a crooked cut, glue residue, or a misaligned layer become part of the narrative, embodying the authentic struggle of self-exploration and dynamic and evolving nature of identity.

Creation often extends beyond the confines of the classroom. While some students manage to "complete" their collages within the session, many choose to take their works home, dedicating additional time to refine and expand upon their creations. This continuation underscores the enduring nature of collage as a reflective process that invites ongoing exploration and deeper engagement with the themes of identity, experience, and self-expression that can be continued the following month, semester, or perhaps even after graduation. It can evolve into a personal project that students carry forward, allowing the layers of meaning to grow alongside their understanding of themselves.

Implications and Challenges

Student evaluations consistently indicate appreciation for hands-on, interactive exercises that engage bodily as well as intellectual learning. Several students in this course went on to host their own collaging workshop concerning disciplinary identity, and others used the collaging method in their seminar presentations with other students. This feedback suggests appetite for arts-based approaches that complement traditional academic methods.

Other institutions can adapt this approach through reflection workshops led by trained student assistants or faculty from arts backgrounds. Such programs could serve students facing major

decisions, career transitions, or identity exploration challenges. The accessibility of collage, requiring only basic materials and no specialized training, makes it particularly suitable for widespread implementation.

Several potential limitations warrant acknowledgment. Not all students may feel comfortable with creative expression, particularly those from highly analytical or technical backgrounds. Cultural differences in attitudes toward art-making and self-revelation could also affect engagement. The approach requires facilitators comfortable with open-ended, process-oriented learning rather than predetermined outcomes. Finally, while student satisfaction appears high, more systematic assessment of learning outcomes would strengthen evidence for this approach's effectiveness in supporting academic decision-making and identity development.

Authentic Self-Representation in the Age of Social Media Curation

Creating collages with tangible materials offers a profound counterpoint to the curated, performative nature of self-representation on social media. While platforms like Instagram often encourage individuals to construct idealized, often highly polished versions of themselves, the act of cutting, arranging, and layering physical materials can invite a far more open and vulnerable exploration of identity for young adults. Collage, as a tactile and process-driven medium, resists the impulse to perfect. It thrives on imperfection, spontaneity, and the interplay of seemingly incongruous elements. This artistic practice can create space for authenticity, where the fractured and multifaceted nature of the self can be freely expressed without the pressures of public approval or external validation.

John Berger's *Ways of Seeing* (1972) provides a crucial lens through which to understand this shift from curated digital perfection to the material imperfections of collage. Berger argues that "every image embodies a way of seeing,"[15] emphasizing that images do not exist in a vacuum but are shaped by their social and historical contexts. This notion is particularly relevant in the digital era, where social media platforms dictate the aesthetics of self-representation, promoting images that conform to cultural ideals of beauty and success. Collage, in contrast, disrupts this homogenized visual culture by embracing the irregular, the raw, and the deeply personal. In reassembling fragmented imagery, students actively reclaim agency over their self-representation, resisting external pressures to conform and instead engaging in a process that prioritizes introspection and personal meaning-making. As Berger suggests, "the relation between what we see and what we know is never settled,"[16] and it is precisely this instability that makes collage such a powerful medium for self-exploration.

This physical engagement with materials also fosters a deeper connection to the process of creation, one that is often missing in the quick, transient interactions of the digital world. Handling objects, tearing paper, rearranging elements, and experimenting with textures slows the act of self-representation, allowing for introspection and mindfulness.[17] And finally, unlike social media, where the "delete" button erases any deviation from the desired image, collage embraces these flaws, offering a process for a more honest and inclusive representation of the self that is driven by curiosity.[18]

CONCLUSION

At the end of the semester, a joint exhibition transforms the classroom into a shared space of creativity, vulnerability, and connection. Carefully organized by a student assistant and intentionally limited to members of the course, this intimate setting allows students to voluntarily share their personal work. Each participant arranges their collage in a manner that reflects their unique narrative, producing a diverse constellation of visual stories linked through the shared journey of the course.

The exhibition can be understood as an educational experience inspired by Deweyan sense of contact and communication driving social space.[19] This culminating event activates the social dimension of learning by transforming private introspection into communal exchange. As students observe and engage with each other's collages, they encounter a plurality of approaches to educational and personal identity, thereby transforming individual experiences into resources for collective growth.

This participatory model stands in deliberate contrast to the curated individualism fostered by social media platforms previously discussed, which often reward polished and idealized self-representations. In contrast, the exhibition process, which is anchored in the physical classroom and grounded in presence, embraces the raw, imperfect, and emergent qualities of self-representation. It invites students to share not only their collages, but also a broader range of visual inquiries completed over the semester, including figurative drawings, small-scale sculptures, word maps, and a collaborative installation of personal 'failures.' Visual elements from students' presentations including diagrams, sketches, and conceptual maps and notes are also welcome, reinforcing the multiplicity of ways in which identity, aspiration, and intellectual formation are expressed. This inclusive environment resists the homogenized aesthetic of digital selfhood and instead honors the complexity, vulnerability, and materiality of becoming.[20]

The exhibition also marks a transition from private reflection to communal interpretation. As students walk silently through the room, viewing the narratives embedded in their peers' works, they engage in what Dewey asserts as "active and alert commerce with the world."[21] Structured yet open interactions through dialogue, feedback, questions and mutual curiosity facilitate the co-construction of understanding and foster a deeper sense of community. This reciprocal process of seeing and being seen affirms the exhibition not just as a final product, but as a shared space of becoming.

Ultimately, the visual exhibition encapsulates the course's pedagogical ethos that engages identity through embodied, reflective, and communal processes. Drawing on Eisner's theory of artistic cognition and Dewey's experiential learning framework, the course positions artistic production not merely as expression, but as inquiry. Its fragmented yet integrative nature mirrors the complexity of human experience, enabling students to create meaning out of multiplicity. In juxtaposing tangible materials with personal narratives, and individual expression with collective witnessing, the exhibition affirms the role of arts-based methods in higher education as vehicles for critical self-reflection, creative agency, and socially embedded learning.

Like the act of self-portraiture itself intends not merely to capture a likeness, but to evoke a felt sense of personhood,[22] the students' visual work resists closure and instead invites viewers into an ongoing dialogue between self and world. These works do not aim to fix identity in time, but rather illuminate its unfolding: textured, partial, and alive. In this final gesture of shared witnessing, the self-portrait emerges not as an endpoint, but as a living process of relation.

NOTES

[1] Cynthia Freeland, "Portraits in Painting and Photography," *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 135, no. 1 (August 2007): 95.

[2] Elliot W. Eisner, *The Arts and the Creation of Mind* (New Haven: Yale University Press, 2002), 77.

[3] Eisner, *The Arts and the Creation of Mind*, 78-79. Eisner credits the term 'flexible purposing' to Dewey.

[4] Eisner, *The Arts and the Creation of Mind*, 197-198.

[5] John Dewey, *Art as Experience* (New York: Minton, Balch & Company, 1934), 19. Emphasis in original.

[6] Dewey, *Art as Experience*, 37.

[7] For more on Dewey's views on how experience, when properly reconstructed, can lead to transformative learning, see John Dewey, *Experience and Education* (New York: Macmillan, 1938).

[8] Jeffrey Jensen Arnett. *Readings on Adolescence and Emerging Adulthood* (Upper Saddle River, NJ: Prentice Hall, 2002), xi.

[9] Arnett. *Readings on Adolescence*, 18.

[10] Freeland, "Portraits in Painting and Photography," 9-10.

[11] For more on collage as an identity-construction metaphor, see: Lynn Butler-Kisber, "Collage in Qualitative Inquiry," in *Handbook of the Arts in Social Science Research*, ed. Gary Knowles and Ardra Cole (Thousand Oaks, CA: Sage, 2007), 265–278.

[12] While many students participating in this exercise have no formal artistic training, research suggests that engaging with creative methodologies enhances reflective learning across disciplines. Newton and Plummer, for example, argue that creative reflectivity enables students, even those without prior artistic experience, to surface and critique their knowledge in meaningful ways. In their study on undergraduate nursing education, they found that the introduction of creative arts-based reflection helped students recognize the depth of their learning, moving beyond technical competencies to embrace a more holistic understanding of their professional growth. This finding underscores the pedagogical value of incorporating creative methods, such as collage, in fostering introspection and meaning-making in higher education: Jennifer M. Newton and Virginia Plummer, "Using Creativity to Encourage Reflection in Undergraduate Education," *Reflective Practice* 10, no. 1 (2009): 67–76, https://doi.org/10.1080/14623940802652821.

[13] As Bolt argues, material practices such as art-making generate knowledge not just through representation, but through the performative interaction between maker and materials, underscoring the epistemic potential of artistic processes. See: Bolt, Barbara. Materializing Pedagogies. Working Papers in Art and Design 4 (2006). Accessed March 10, 2024. http://sitem.herts.ac.uk/artdes_research/papers/wpades/vol4/bbfull.html.

[14] The historical development of collage as a medium for identity exploration extends far beyond Hannah Höch's pioneering contributions. Collage emerged as a revolutionary artistic practice in the early 20th century, when Pablo Picasso and Georges Braque first incorporated found materials into their Cubist compositions around 1912, fundamentally challenging traditional notions of representation. This radical break from conventional artistic practices positioned collage as inherently subversive, allowing for the fragmentation and reassembling of reality in ways that mirrored the increasingly fractured experience of modernity. For more, see: Brandon Taylor, *Collage: The Making of Modern Art* (London: Thames & Hudson, 2004).

[15] John Berger, *Ways of Seeing* (London: Penguin Books, 1977), 10.

[16] Berger, *Ways of Seeing*, 7.

[17] Mihaly Csikszentmihalyi, *Creativity: Flow and the Psychology of Discovery and Invention* (New York: Harper Collins, 1996).

[18] Patricia Leavy, ed., Handbook of Arts-Based Research, 2nd ed. (New York: Guilford Press, 2025), 111.

[19] John Dewey, *Experience and Education* (New York: The Macmillan Company, 1938), Kappa Delta Pi Lecture Series, 38.

[20] Berger, *Ways of Seeing*, 10.

[21] Dewey, *Art as Experience,* 19.

[22] Freeland, "Portraits in Painting and Photography," 95.

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EXTRATERRITORIAL FUTURE VISION: A PROPOSAL FOR A POSSIBLE CONCEPTUAL FRAMEWORK FOR KNOWLEDGE PRODUCTION AND EXCHANGE

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INTRODUCTION

This essay proposes extraterritoriality as a conceptual framework for reimagining knowledge production and exchange beyond nation-centric paradigms. Beginning with an examination of how modern disciplinary formations in the social sciences and humanities have historically developed in tandem with nation-states, the work traces how this knowledge-state nexus impacted the shaping of epistemological horizons. The essay then explores extraterritoriality's rich genealogy—from its ancient origins as a form of legal representation mediating between different systems to its contemporary relevance for addressing planetary challenges. Drawing on theoretical literature and artistic practice, particularly the Exterritory project, the proposal is a vision of extraterritorial thinking as a methodology for creating intellectual commons where diverse epistemologies can meaningfully coexist. The essay ultimately suggests that extraterritoriality offers not merely an academic exercise but an essential grammar for navigating our complex planetary present.

OUT OF ORDER: DISCIPLINARY GEOGRAPHIES QUESTIONING THE KNOWLEDGE-STATE NEXUS

The intricate web of knowledge, culture, and place has long been a focal point of scholarly inquiry, with vast discussions spanning diverse fields of science and the humanities throughout the centuries. Literature across these domains has thoroughly demonstrated how epistemic frameworks ordering knowledge production and exchange emerged at the interplay of institutional assemblages, cultural productions, and spatial configurations. Within this context, scholars have precisely illuminated the varied ways in which, since the late 19th century, social sciences and the humanities have developed in tandem with nation-states, contributing to knowledge-production practices that simultaneously reflect and legitimize state institutional frameworks through their overlapping conceptual and methodological approaches. The modern formations of these disciplines were shaped at the intricate nexus of knowledge organization and cultural production, evolving alongside—and often within—the territorial frameworks of nation-states. This intellectual engagement has contributed to emphasizing particular socio-political arrangements within national contexts, establishing frameworks through which societies came to understand their territorial relationships and cultural orientations.[1]

At the dawn of the 21st century, the theoretical implications of this knowledge-state nexus still present ongoing challenges, necessitating intellectual evolution toward more comprehensive, world-encompassing conceptualizations that transcend state-centric paradigms. Among a handful of illustrative cases from recent decades critic, sociologist Ulrich Beck incisively demonstrates how social sciences have functioned as instrumental apparatuses in nation-state formation through their operative deployment of what he conceptualizes as "the container theory of society"—a methodological presupposition that naturalizes state territorial boundaries as the primary spatial framework for social analysis. This epistemic configuration, Beck argues, produces a conflation wherein "social order" becomes synonymously articulated with "state order," thereby reifying state-centric modes of governance. Furthermore, he argues that it is "[a]ll kinds of social practices," including culture and education, which "are stamped and standardized, defined and rationalized, by the national state."[2] In response to these epistemic limitations, Beck advocates for a 'cosmopolitan social science'—one that transcends methodological nationalism by embracing a reflexive, border-crossing approach that accounts for the increasingly deterritorialized, interdependent, and transnational dimensions of contemporary social life that demands "recognition of difference, beyond the misunderstandings of territoriality and homogenization."[3]

In intellectual parallel, theorist Gayatri Chakravorty Spivak, drawing upon her humanistic perspectives and expertise as a literary scholar in Death of a Discipline (2003), pursues a complementary trajectory as she critically interrogates the epistemic underpinnings of the humanities. She notes that "Comparative Literature [was] made up of Western European 'nations,'"[4] while even attempts to broaden disciplinary scope by taking a cross-cultural perspective remain limited, observing that alternative frames such as "cultural studies," is still "heavily invested in New Immigrant groups."[5] Considering how dominant disciplinary formations have historically consolidated the intellectual boundaries of nationhood, she invokes a need of "a planetary Comparative Literature" that would confront the profound existential question of knowledge formation when the presumed stability of cultural origins dissolves into narrative constructions rather than transcendental truths.[6] Surfacing the limits of bodies of knowledge tending to adhere to modern nation-system ordering of social sciences and the humanities and the subsequent necessity of finding models capable of encompassing worldly "epistemological diversity" establishes a substantial part of post-colonial thought.[7] A prominent proposal is put forward by sociologist Boaventura de Sousa Santos, which postulates a model of "ecology of knowledges," where a plurality of knowledges is situated within their specific practices, thus "displacing hierarchies" between forms of knowing. This recalibration of epistemological relationships finds meaningful resonance beyond traditional humanities and social science boundaries, were scholarship addressed diverse ways in which state-knowledge configurations shape intellectual production while subtly permeating knowledge formation processes across disciplinary ecosystems. This perspective is particularly evident in debates on scientific and technological knowledge, where disciplines such as Science and Technology Studies (STS) have demonstrated that the production of expertise is inseparable from institutional and geopolitical structure. Bruno Latour's seminal contribution in *Reassembling the Social* radically re-conceptualizes knowledge formation as a complex assemblage of human and non-human actors networked through relational processes rather than contained within static disciplinary borders.[8]

Latour's earlier critique in "We Have Never Been Modern" further dismantles conventional epistemological frameworks by exposing the artificial separation between nature and society that undergirds Western knowledge production: "The moderns think they have succeeded in such an expansion only because they have carefully separated Nature and Society." Latour's intervention thus

emphasizes how the very scientific categories we use to organize knowledge are themselves political constructs that require critical reassessment.

While Latour identifies this fundamental bifurcation as structuring Western epistemology, his analytical framework nevertheless encounters certain limitations when confronting knowledge production's cultural and institutional dimensions. Sheila Jasanoff's influential work extends and complicates this perspective through her co-productionist framework, demonstrating that scientific and technological practices cannot be isolated from "macro-categories of political and social thought" but instead exist in recursive relationship with them. "Science and society, in a word, are co-produced, each underwriting the other's existence," she argues, positioning knowledge creation as intrinsically entangled with social order.[9] Further she claims that "Solutions to the problem of knowledge are solutions to the problem of social order."[10] Where Latourian analysis offers powerful tools for tracing networks and associations, Jasanoff identifies crucial explanatory gaps in his approach, noting that actor-network theory "has little to say, for instance, about why the organization of technological practices or the credibility of scientific claims varies across cultures; why some actor-networks remain contested and unstable for long periods while others settle quickly; why work at some nodes stabilizes a network more effectively than at others; or what role memories, beliefs, values and ideologies play in sustaining some representations of nature and the social world at the expense of others.".[11]

Her intervention thus foregrounds the institutional contexts, cultural frameworks, and power differentials that shape how knowledge becomes authorized within specific socio-political configurations, offering analytical purchase on the state-knowledge nexus that extends beyond identifying hybrid networks to examining how particular knowledge formations become stabilized and legitimized within existing power structures. One significant strand of what Indigenous philosopher and climate/environmental justice scholar Kyle Whyte characterizes as the "crisis of epistemology" points toward reimagining knowledge production in relation to planetary emergency. This approach seeks to transcend state-centric epistemological frameworks by situating knowledge within broader planetary dynamics and Indigenous knowledge systems, thereby challenging the territorial and institutional boundaries that have traditionally circumscribed academic inquiry.[12]

Philosopher Evan Thompson articulates the inherent limitations of this approach, noting that "crisis epistemology emphasizes urgent instrumental thinking that is means-end oriented and linear solution-driven action." This framework, Thompson argues, conceptualizes "our present world as having been stable but as now facing unprecedented and imminent disaster," consequently demanding "emergency thinking and planning." The fundamental shortcoming of crisis epistemology lies in how it "fixates on a particular end—climate mitigation—and extracts it from the larger complexity of social and political history and from ecological planetary dynamics." Crisis epistemology operates through what historians term a "presentist perspective"—a stance that may fall into a sort of a temporal myopia that limits our capacity to situate environmental challenges within broader historical patterns of knowledge production, ultimately reproducing the fragmentary thinking it aims to overcome when the development of more nuanced epistemic frameworks capable of addressing planetary transformation in all its historical and cultural dimensions are needed for a more comprehensive account.[13] The above diverse theoretical frameworks represent merely a selection from a broader intellectual movement that collectively illuminates how we have operated within the constraints of a modern epistemic order that insufficiently account for knowledge formations. Our contemporary moment, fundamentally characterized by knowledge conflicts, demands conceptual vocabularies that transcend national boundaries without sacrificing contextual specificity. What emerges from this contested terrain is the necessity for intellectual spaces where multiple epistemologies can meaningfully engage without reproducing existing hierarchies, enabling us to address complex planetary challenges through

frameworks that honor both human diversity and more-than-human entanglements, fostering generative translations across difference while maintaining accountability to situated perspectives and the lived experiences that shape them.

EXTRATERRITORIALITY: CONCEPTUAL BACKGROUND

The etymological roots of extraterritoriality, derived from the Latin extrā territōrium, offer insight into its representational logic by literally combining 'being outside' with 'territory'.[14] In ancient Rome, this concept embodied a boundary-transcending form of representational authority: it denoted a binding legal principle towards those authorized to regulate justice and operate beyond jurisdictional boundaries, and the legal recognition that despite their authority, disobedience to them did not entail consequences when they operated outside their territory. This dual nature is crystallized in the Latin legal maxim *Extra territorium ius dicenti impune non paretur*.[15] However, research literature identified extraterritorial representational practices existed long before the term's linguistic emergence, tracing them to the early periods of the second millennium BCE. Against this historical context, when absolute territorial sovereignty did not yet exist, extraterritoriality is understood as a unique form of legal representation that mediated between different systems of law through practices of legal tolerance as a means of resolving disputes.[16] Extraterritoriality is used to describe a representational framework that enabled the exemption of foreigners from local laws while maintaining their connection to their customary law systems. Such representational arrangements emerged from various contexts: migration patterns, conquest dynamics, and commercial relationships. Historian Shalom Kassan argued that extraterritoriality was a kind of way to reduce fear of foreigners in an environment characterized by hostility between social groups, against the background of deep differences regarding religious beliefs and cultural habits, and contributed to the flexibility of a separatist model that preferred exclusive belonging to one community of law based on religion, race, or ethnic common denominator.[17] These sometimes complementary forms of representation persisted and developed throughout antiquity. In ancient Greece, for example, the status of proxenoi was created, an arrangement whereby a citizen of one state was appointed to represent the interests of another state, and in return, received honorary titles and privileges. This model is now seen as a kind of prototype of the ambassador model. Later, extraterritoriality's modern lexical definition in international law to the influential writings of Dutch jurist Hugo Grotius, who adopted the term. In his famous work on the law of war and peace, first published in 1625, De Jure Belli ac Pacis, Grotius laid out his doctrine regarding the diplomatic immunity of the ambassador, and it is considered the source for the definition given even today.[18] Notably, in Mare Liberum (1609), Grotius applied similar principles of extraterritorial jurisdiction to the high seas, establishing them as spaces beyond territorial sovereignty.[19] The later formulations of extraterritorial agreements that appeared in the 19th century were perceived as an expression of an imperialist agenda and as a tool for expanding Western control in general and in colonies in particular, leading to a much more critical approach towards extraterritorial representational form. Drawing together these historical threads as they appeared within legal and political contexts, the concept of extraterritoriality is often the result of the encounter between legal systems and different technologies of governance that enable their co-existence while producing complex regimes of representation. The manifestations of extraterritorial practices reveal an overarching mode of representation, wherein extraterritorial arrangements could either exclude or exempt people and spaces from the territorial jurisdiction encompassing their physical presence, effecting a sort of "include out" clause. From its ancient origins as a practical mechanism for mediating between different legal systems to its modern theoretical reimagining, extraterritoriality exemplifies how representational frameworks operate simultaneously which make it a vital concept

for examining contemporary challenges of spatial demarcations in an increasingly interconnected world.

TOWARDS EXTRATERRITORIAL FRAMEWORK FOR KNOWLEDGE PRODUCTION AND EXCHANGE

My work explores the concept of extraterritoriality as an invitation to navigate not only the margins of the legal–juridical and spatial orders but also the edges of forms of representation and poetics. The research builds on my long-term engagement as an artist and scholar exploring extraterritoriality through the collaborative art project Exterritory, which has received worldwide recognition, including a UNESCO award. Conceived as a screening of a video compilation of works by Middle-Eastern artists onto the sails of boats navigating in the extraterritorial waters, we experimented with the creation of an image of art exhibited in a neutral space beholden to no national constraints. Since, the project has pivoted on a cross-disciplinary practical and theoretical examination of extraterritorial phenomena in both local, global, and technological contexts to distill the logic of extraterritorial representation. Consisting of the creation of artworks, scientific collaborations, advanced technologies experimentation, public events, and publications, the project led me not only to adhere to committed search for the extraterritorial power of art but also embark on a conceptual study of extraterritoriality as it emerged in different fields.[20] The unique ability of art to instigate platforms for knowledge production in ways that transcend existing boundaries has been a project's motivation since the early stages. The conceptual boundaries of extraterritoriality have remained fluid throughout historical discourse, and its manifestation as a form of legal and political representation exhibits considerable heterogeneity across diverse contexts. Nevertheless, identifying recurring representational patterns provides genealogical threads through which to map seemingly disparate phenomena, both temporally and ontologically distinct, as they converge within the historical narratives constituting the conceptualization of extraterritoriality.

Our current era presents multifaceted planetary landscapes characterized by diverse hybridized cultural spheres, evolving geographies of information flow, networked digital spaces, networked decentralized value and monetary transaction economies, environmental metamorphosis, technological advances in artificial intelligence and other emergent forms of human-machine symbiosis. These phenomena transcend conventional boundaries, reshaping our understanding of space, time, and agency while profoundly challenging established paradigms of social organization, authority, identity, and the human relationship with both digital and natural environments. To investigate these transformations, the concept of extraterritoriality emerges as a vital framework for reimagining cultural, creative, and interdisciplinary research in the 21st century.

The concept of extraterritoriality invites us to imagine new forms of collective knowledge creation that transcend established institutional frameworks and thresholds of representation. Just as extraterritorial waters provided neutral spaces for artistic dialogue, we might envision intellectual commons where knowledge emerges through dynamic interplay of diverse cultural perspectives and ways of knowing. These spaces would operate through shared principles of recognition and exchange, where value flows from the richness of multiple creative intersections and the depth of collective engagements. Such knowledge-sharing ecosystems could foster new forms of scholarly and creative communities that honor multiple traditions of wisdom and expertise while developing novel forms of peer acknowledgment and validation. The evolution of knowledge emerges not to impose one form of understanding over others, but rather to foster the coexistence of diverse ways of knowing through this unique form of representation. In this vision, knowledge develops through hierarchical structures, but also through carefully cultivated practices of mutual recognition - where different modalities of

being can exist simultaneously, each enriching the others through their distinct presence and perspective. As planetary challenges dissolve traditional boundaries, extraterritorial thinking emerges not merely as an option but as an essential grammar for weaving new forms of understanding across the spaces between established territories, institutions, and ways of knowing.

The ancient practice of extraterritoriality—born from the need to mediate between different systems of law and reduce tensions between social groups—offers profound insights for our contemporary moment. Just as historical extraterritorial frameworks enabled multiple legal systems to coexist, creating spaces of mutual recognition amidst deep cultural differences, today's planetary challenges call for similar innovations in how we structure knowledge exchange and community building. These historical patterns of extraterritorial thinking—where belonging was not confined to singular systems but rather enabled multiple frameworks to coexist—provide a valuable template for reimagining contemporary forms of knowledge creation and validation. As we face unprecedented global transformations, the enduring logic of extraterritoriality suggests possibilities for creating new spaces of understanding that transcend not only territorial boundaries but also the limitations of singular institutional or cultural frameworks. In this light, extraterritoriality emerges not merely as a historical concept or contemporary necessity, but as a vital methodology for weaving together diverse ways of knowing and being in an increasingly interconnected world.

NOTES

[1] Michel Foucault, *The Archaeology of Knowledge and the Discourse on Language*, trans. A. M. Sheridan Smith (New York: Pantheon Books, 1972); Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan, 2nd ed. (New York: Vintage Books, 1995); Pierre Bourdieu, *Distinction: A Social Critique of the Judgement of Taste*, trans. Richard Nice (Cambridge, MA: Harvard University Press, 1984); Pierre Bourdieu, *Homo Academicus*, trans. Peter Collier (Stanford, CA: Stanford University Press, 1988), 36–72; Anthony Giddens, *Modernity and Self-Identity: Self and Society in the Late Modern Age* (Stanford, CA: Stanford University Press, 1991), 82.

[2] Ulrich Beck, *What Is Globalization?*, trans. Patrick Camiller (Cambridge: Polity Press, 2000), 20–21.

[3] Ulrich Beck, *Cosmopolitan Vision* (Cambridge: Polity, 2006), 30-33.

[4] "Gayatri Chakravorty Spivak, *Death of a Discipline* (New York: Columbia University Press, 2003), 8.

[5] Spivak, *Death of a Discipline*, 84.

[6] Spivak, *Death of a Discipline*, 102.

[7] Boaventura de Sousa Santos, "A Non-Occidentalist West?: Learned Ignorance and Ecology of Knowledge," Theory, Culture & Society 26, no. 7-8 (2009): 117.

[8] Bruno Latour, *We Have Never Been Modern* (Cambridge: Harvard University Press, 1993), 8.

[9] Sheila Jasanoff, ed., *States of Knowledge: The Co-production of Science and Social Order* (London: Routledge, 2004), 18.

[10] Jasanoff, *States of Knowledge*, 29.

[11] Jasanoff, *States of Knowledge*, 17.

[12] Kyle Whyte, "Against Crisis Epistemology," in *Routledge Handbook of Critical Indigenous Studies*, ed. Brendan Hokowhitu, Aileen Moreton-Robinson, Linda Tuhiwai-Smith, Chris Andersen, and Steve Larkin (London: Routledge, 2020), 52-64.

[13] 4 Saturday Morning - Session 1 with Evan Thompson | Varela International Symposium 2021," YouTube video, posted by "Mind & Life Europe," accessed March 14, 2025, https://www.youtube.com/watch?v=Q9bKqqaIL6g.

[14] J. R. V. Marchant and Joseph F. Charles, *Cassell's Latin Dictionary, Latin-English/English-Latin* (New York: Funk & Wagnalls, 1953), 213, 752.

[15] Aaron X. Fellmeth and Maurice Horwitz, *Guide to Latin in International Law* (Oxford: Oxford University Press, 2011), 104.

[16] Shih Shun Liu, *Extraterritoriality: Its Rise and Its Decline* (New York: Columbia University Press, 1925), 23.

[17] Shalom Kassan, "Extraterritorial Jurisdiction in the Ancient World," American Journal of International Law 29, no. 1 (1935): 237.

[18] Hugo Grotius, *Hugo Grotius on the Law of War and Peace*, ed. Stephen C. Neff (Cambridge: Cambridge University Press, 2012), 263.

[19] Hugo Grotius, *The Free Sea (Mare Liberum)*, ed. David Armitage, trans. Richard Hakluyt (Indianapolis: Liberty Fund, 2004).

[20] Maayan Amir and Ruti Sela, *Extraterritorialities in Occupied Worlds* (Brooklyn: punctum books, 2016), 13-30.

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"4 Saturday Morning - Session 1 with Evan Thompson | Varela International Symposium 2021." YouTube video.Posted by "Mind & Life Europe." Accessed March 14, 2025. https://www.youtube.com/watch?v=Q9bKqqaIL6g.

RE-TRACING OUR STEPS: HISTORICIZING AND RE-THINKING RITUALS OF COMMEMORATION AND SETTLER NATIONALISM

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INTRODUCTION

Walking tours have long been used to educate the public about urban heritage, yet they often reinforce dominant narratives that privilege colonial histories while marginalizing Indigenous and other historically excluded perspectives. In response, critical walking pedagogy has emerged as a method for rethinking urban space, prompting engagement with contested histories and opening a dialogue about reconciliation. This article examines how critically redesigning walking tours can be an important pedagogical tool that challenges conventional heritage narratives. This paper examines our teaching experiment from an undergraduate university course designed to educate about local history through experiential learning and to develop creative counter-narratives of place.

In a recent undergraduate class, we engaged students in critical walking pedagogy to analyze the local heritage landscape. This paper examines what we learned from this teaching experiment. In this course, the hidden stories or "oblique contours"[1] of local heritage sites offered new affordances to students to re-read local heritage with a decolonial lens. This research addresses Springgay and Truman's call to interrogate the silencing of hidden stories, rethink rituals of commemoration, and consider how walking pedagogy,[2] a type of "wayfinding,"[3] can help move towards land-based decolonization praxis.

THEORETICAL PERSPECTIVES

The role of walking in education has been explored in multiple disciplines, including education.[4] Indigenous scholars[5] highlight the importance of land-based learning as a means of countering settler-colonial frameworks. This article builds on these insights by demonstrating how university students engaged in walking pedagogy encountered, questioned, and reinterpreted local heritage narratives. The conventional heritage walking tour is often crafted to reflect the perceived diversity of Canada, yet in doing so, also offers a crafted version of the past, present, and future of our imagined communities.[6] Amid ongoing global crisis, Springgay and Truman suggest, "a more robust interrogation of walking and place is urgently needed to take into account not only intersectional frameworks but also the ways that place is socially, materially, and politically entangled with walking".[7] Reframing walking as a pedagogical practice and methodology highlights how everyday spaces can offer a lens to interrogate and learn from, "hidden histories, obscure stories, and state-

sanctioned narratives".[8] Pulling apart multivocal historical and culture sites requires presence, engagement, deep questions, and a practice of observation based on "slow pedagogy".[9]

Walking as pedagogy and methodology is located within "mobilities" scholarship,"[10] which invokes reference to the flaneur[11] as a way of observing and chronicling the life of the city. Walking as research method links the visual and sensory,[12] narrative,[13] ethnographic,[14] participatory, artistic and performative research practices.[15] Artistic and performative walking research, such as Turner's walking as counter-mapping,[16] in which her performance as time traveler challenges Canada's role in transatlantic slavery allows creative and immersive ways to re-write new place-making narratives that offer more livable spaces for Black and Indigenous solidarity. Walking pedagogy is not limited to abled bodies, but instead disability justice scholars have also applied "cripped"[17] methodologies to walking practices.

Methods

The method of the *Queer Walking Tour[18]* informs our deep focus on hidden stories. Springgay and Truman define this approach as, "defamiliarizing established assumptions,"[19] as it activates the concept of walking as a type of slow movement through space. We designed and offered an intensive 6-week hybrid format spring undergraduate course, to introduce walking as pedagogy to students.

Our hope was to design a course that could align with the work of Madden[20] and her articulation of a de/colonizing theory of truth and reconciliation education. In particular, we wanted this course to take up and practice the ideas from Wildcat et al.: "If we are serious about…educating people within frameworks of Indigenous intelligence, we must find ways of reinserting people into relationships with and on the land as a mode of education."[21] We were also very aware of our undergraduate student needs in terms of reviving our pedagogical approach to help our students feel connected to the course, to the university, and to other members of the class as we return from fully online learning during the COVID pandemic.

In order to evaluate how students engaged with the walking pedagogy and the development of counter narratives, our analysis focused on collaborative autoethnography (CAE) where co-researchers engage in practices of reflexivity, such as sharing self-reflections, teaching notes, and stories from the "classroom," which are then coded for themes and insights.[22] For this project, we drew on duoethnography by Burleigh and Burm, and used our teaching meeting notes to support the collection of our data, where "the data is the dialogue".[23] For CAE, it is important to recognize that "the inquiry process is the product, and the 'findings' emerge as co-constructions within the various dialogic transactions".[24] Our process involved tracing themes within our recorded discussion, notes from our walking tours, and the collected artifacts from students and our own written reflections. Collectively we reviewed and drew out themes from our materials that addressed our research questions.

In particular, through this process, we recognized the need to evaluate how we used threshold concepts,[25] such as decolonization, in our teaching. Drawing on the work of Stambler et al.[26] that coupled CAE with critical reflection on the development of threshold concepts, our initial discussions and reflections centred on understanding and defining threshold concepts for this course and reflecting on our guiding research questions:

1. How does walking pedagogy enhance student engagement and critical thinking to challenge colonial narratives?

2. What are the challenges and benefits of integrating walking as a pedagogical tool in diverse classroom settings?

3. How can walking pedagogy facilitate cross-cultural dialogue and understanding among students?

Teaching Experiment

Ontario Tech University, located in Oshawa, operates across two campuses: one housing social sciences and humanities in the downtown core, and the other dedicated to STEM disciplines at the north campus. The interdisciplinary Liberal Studies course described in this paper was developed as a general elective, drawing a significant number of STEM students. Given their tendency to remain on the north campus, the course aimed to immerse them in the city's downtown, fostering a deeper engagement with the local community.

The course was offered as a six-week intensive during the spring term, limiting enrollment to 20 third-year students. It was structured as a hybrid model, combining online lectures with in-person field trips concentrated in a single week. This format provided students with flexibility while allowing for immersive experiential learning. The course was offered as part of Teaching City[27] initiative for Oshawas's 100th anniversary. The students had the ability to develop a final creative project either individually or in pairs. As a model for these projects, we turned to the Alternative Campus Tour at York University.[28] The stories our students decided to highlight and develop offered them a space to expose and disrupt settler ideology and place-making practices. Ultimately, these artifacts or digital tools highlight the possibilities, challenges, and limitations of our pedagogical approach. The analysis of these projects is in the preliminary stages and offers another layer of analysis in terms of evaluation and assessment of digital tools linked to critical pedagogical interventions.

UNRAVELLING THE STORIES

The course itinerary included diverse locations such as the Parkwood Estate, Oshawa Creek, the Robert McLaughlin Gallery, and the Regent Theatre. These sites were selected not only for their historical and cultural significance but also for their role in shaping the city's identity. Students were encouraged to interrogate the narratives presented at these sites, particularly those emphasizing technological nationalism and economic progress while marginalizing Indigenous and alternative histories.

Assessment strategies were designed to cultivate critical thinking and reflective engagement. Students completed reading reflections on theoretical works and site histories prior to visits, developing guiding questions for discussion. The culminating assignment was a multi-step project in which students proposed, researched, and designed their own heritage walking tours for sites not covered in the course, thereby extending their critical inquiry beyond the classroom.

This project is ongoing, and the preliminary findings highlight three important themes: Unsettling Familiar Spaces and Stories, Embodied Learning and Reflection, and Tensions and Opportunities in Reconciliation. Within these three themes, we were able to focus on salient stories that we will continue to use and develop to extend the use of walking methodologies as a form of knowledge sharing, community collaborations, and research mobilization.

The three key themes that emerged from the analysis include the following:

• Unsettling Familiar Spaces and Stories: Students reported how the walking tours altered their perceptions of everyday spaces, revealing hidden histories that challenged their previous understandings. "*My family has a long history in Canada, and it's all written down – everyone in my family knows our history.*" *– 4th Year Student*

One of the most interesting and significant observations we made had to do with how students understood and made connections to the documentation of family histories and how those so-called personal family histories influence and structure our heritage and local history practices. Our first walking tour of the Downtown Oshawa Landscape put into perspective the key heritage landmarks used in traditional walking tours. We discussed the well-known narratives of the Oshawa heritage

landscape, but also pushed the boundaries by asking when the history of Oshawa began and how are certain stories made central to local history. This questioning worked to develop the threshold concept of chronological understanding and led to more critical awareness. Who was left out of those histories and how the constructions of particular stories are grounded through heritage spaces, buildings, institutions, and practices, like walking tours, became important questions. As part of our teaching observations and teaching dialogue, we highlighted an interesting class discussion that began on our walk. The student shared that her inter-generational history in Canada was well documented through a collection of artifacts and that members of her family have been very dedicated to developing a family archive, with dates, names and images of people, and stories written down and preserved. These are stories and documents that all of her family members and relatives contribute to this archive practice and "know" their history. Other members of the class were quick to share their differing experiences and how they think about the importance of family histories. The class discussion that followed focused on how particular privilege, language abilities, and unquestionable membership in dominant cultural/community organizations allowed some families to construct a narrative of continuous occupation of land and participation in the "development" of the nation. We also found that this was an important place to open out the discussion in order to question how those nationalizing narratives work as a threshold concept. When we reflected on this discussion, we realized that we needed to enhance our discussion of the recording of history and the power structures that control those written narratives. We also decided to include more discussion about oral traditions and the recording/archiving of oral histories. This class discussion can work as an important pivot point to introduce and work through the threshold concept that there are multiple and competing historical narratives.

• Embodied Learning and Reflection: Walking through contested sites encouraged students to engage with history not just intellectually but physically and emotionally, fostering deeper connections to the material. "*How did people know what was in fashion? How did Robert McLaughlin know about Eastern Art? If they didn't have the internet, how did they know? What is a Grand Tour?*" -3rd *Year Engineering Student*

After our walking tour of the greenhouses at the Parkwood Estate, one of the students had a number of questions about the development of the estate, the gardens, and the collection of Eastern Art that is part of the estate. The questions suggested that the student had started to connect with the differences between the early 1900s and today in concrete ways. For this course, we used these questions to build our more hybrid content that allowed students to do a deep dive into the subject of World Fairs and the role of the Grand Tour. Our discussion with the students influenced our next lectures, and we used these questions to progress into the next topics. Through our dialogue, we found that the questioning offered by this student was an important aspect of the course to provoke deep questioning. To fully engage students, we are envisioning ways to have students build digital tools, such as content for an interactive Canvas course page, edit Wikipedia entries, or build public pedagogy pages to help address their own questions. Our hope is for students to engage directly with the threshold concept that ideas/ideologies and practices change over time[29] and that how we represent the story of those changes is as important as the change itself.

• Tensions and Opportunities in Reconciliation: Many students grappled with the complexities of reconciliation, recognizing both the need for historical acknowledgment and the difficulties of enacting meaningful change in urban heritage practices. *"How are illnesses and medical practices linked to colonization and reconciliation?" -3rd Year International Student*

At the Oshawa Museum, after a discussion with our host from the museum and a discussion of the artifacts on display, the student wanted to know more about traditional labour roles in the household,

how families in the late 1800s dealt with illness, the history of common illnesses, how people were treated for TB, and how family dynamics worked regarding death, dying, and remarrying. These questions went well beyond our course curriculum and showed us a need for other courses to focus on revealing the silenced history of Indigenous healthcare in Canada. We used these questions to develop online content and to provide further readings for students. Community connections for our students were a significant aspect of the course. Transitioning to a new university, and for international students, transitioning to a new culture, can be overwhelming. Walking together as a class was a component that came up many times in our self-reflections and was something students mentioned to us as an important aspect of the course. The social interaction that was promoted through our walking allowed students and instructors to talk about the sites informally and ask questions about the history of the area, but also about the history of Canada more generally. These moments of critical questioning led us to discuss topics not in the curriculum: healthcare in the 1800s, medical institutions, and gendered division of labour in the home. In exploring walking as a pedagogy, our findings indicate that by walking together as a class, we were able to embody spaces in a much more personalized way. We were very aware that exploring the heritage sites through the dominant heritage narratives would not fully challenge or provoke critical questioning and the deconstruction of nationalizing narratives. Through redesigning how we engaged these site visits, exposing the often untold or concealed stories, we offered students other scripts for interpreting these sites, and it might offer an important avenue to support social and emotional learning by engendering student connections in spaces they would not otherwise visit together outside of a traditional classroom environment.

The findings illustrate the pedagogical potential of walking tours in fostering critical historical consciousness and working with and through threshold concepts. By engaging directly with urban landscapes, students moved beyond passive learning to actively interrogate historical narratives. This aligns with Springgay and Truman's notion of "sensory pedagogy,"[30] where movement through space facilitates deeper learning. Moreover, student reflections indicated a heightened awareness of the political nature of public history, resonating with the calls of Tuck and Yang to decolonize educational practices.

Student feedback indicated increased engagement with the material. Many reported that the active, place-based learning helped them process historical narratives in ways that traditional classroom settings could not. Several students highlighted the post-pandemic challenge of re-engaging with learning, noting that the course's dynamic structure provided a sense of intellectual and emotional reawakening. However, challenges remain. Some students expressed discomfort when confronting unsettling histories, revealing the tensions inherent in learning about colonial violence. This raises questions about how educators can support students in navigating difficult knowledge while maintaining critical engagement.

CONCLUSION

Our work suggests ways for educators to engage critical and creative walking pedagogy in undergraduate curriculum and uses educational research methodologies to distill evidence-based approaches that support wayfinding in history education by enhancing narratives that disrupt colonial power structures. From a Canadian perspective, the journey of reconciliation calls educators to participate in the practice of truth telling about Canada's violent history of colonialism and also reckon with the role and ethical responsibility of educational institutions and educators to disrupt colonial scripts in education.[31]

The redesign of the course was influenced by the work of Brooke Madden,[32] who emphasizes decolonizing education through reintegrating people into relationships with land as a mode of learning. Drawing on Wildcat et al.,[33] for further insight and guidance, we sought to create an educational experience that moved beyond passive reception of dominant historical narratives. Instead, our hope was to have students actively question dominant heritage narratives, identifying omissions and silences in the official histories presented at heritage sites. A key methodological influence was the concept of walking pedagogy, as articulated by scholars Springgay and Truman. Their work emphasizes the material and political entanglements of walking, challenging the notion of movement through space as a neutral act. By walking through Oshawa with a critical lens, students engaged with place in ways that foregrounded power, exclusion, and alternative possibilities.

This study demonstrates that critical walking pedagogy can serve as a powerful tool for unsettling dominant heritage narratives and fostering dialogue about reconciliation. By engaging students in embodied, site-specific learning, walking tours offer a means of disrupting traditional historical narratives and amplifying marginalized voices. Future research should explore how these approaches can be further integrated into public history education, community engagement initiatives, and broader efforts toward decolonization. The *Reading Oshawa at 100* course demonstrated the potential of critical walking pedagogy as a tool for confronting colonial narratives in urban spaces. By embedding decolonizing frameworks within experiential learning, the course enabled students to develop a nuanced understanding of place, history, and power. Future iterations of the course will incorporate student feedback and expand the range of sites to further challenge dominant narratives and foster critical engagement with local histories.

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EXPLORING THE LANDSCAPE OF CRITICAL THINKING IN CHILEAN UNIVERSITIES

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INTRODUCTION

This study uses a mixed-methods approach to investigate the teaching of critical thinking in Chilean universities and analyze how this essential skill is defined and taught in higher education. Our focus is on the qualitative research phase, which includes semi-structured interviews with program leaders, department heads, and faculty members, and a thematic analysis of course syllabi. Given the literature's various definitions of critical thinking, teaching methods can vary significantly. Since global organizations, including the World Economic Forum (WEF),[1] recognize critical thinking as a crucial transversal skill, understanding how Chilean universities foster this skill is vital for equipping students to tackle complex challenges.

LITERATURE REVIEW

Critical thinking is fundamental for a fulfilling life, both socially and personally. Although the need for its teaching is highly recognized, agreeing upon a universal understanding of the notion, including the skills it entails, has become a challenge, impacting how it is taught. This study explored various interpretations of critical thinking presented in the literature and brought them together with the challenges to teaching it in Chilean universities.

From logical reasoning to practical wisdom

Various scholars have defined critical thinking, including Dewey,[2] Black,[3] Freire,[4] Ennis and Norris,[5] Paul and Elder,[6] and Roberts and Billings.[7] Some embrace a pragmatic perspective, emphasizing intellectual skills essential for academic and professional success. A gap between theory and practice is observed from the various interpretations of the notion across multiple schools of thought,[8] and the complexities of teaching and assessing critical thinking skills due to this diversity.[9]

Within these various approaches, the work of Dewey[10] appears as an essential source. He understands the notion as an individual and iterative cognitive process that fosters high-quality reasoning, empowering learners to systematically organize ideas grounded in empirical evidence. Another relevant perspective is drawn by Naessens,[11] who advocates for a reflective methodology that insists upon intellectual rigor and reasoning based on solid evidence. More recently, Haber[12] includes systematic steps to develop disciplined thinking, safeguarding thought and communication clarity, logical transparency, and belief justification.[13]

These approaches produce proper performance in the academic and working environments. However, a broader and deeper perspective that incorporates "dialogue" into such an operational view is needed, establishing the notion as a necessary vehicle for the search for truth and, from this, for responsible ethical action.[14]

Dialogue involves interpreting and engaging with complex texts, highlighting the interconnectedness of this practice with reading and writing. These components encompass a systematic intellectual process that enhances students' thinking from spontaneity to sophistication.[15]

Similarly, Elder and Paul contend that critical thinking relies on a commitment to intellectual standards—clarity, coherence, precision, and depth—alongside attitudinal traits—integrity, humility, and intellectual empathy, materializing through iterative cycles of reading, dialogue, and writing, which can be categorized into distinguishing stages.[16]

• Analysis – Decoding the meanings embedded within a text.

• Synthesis – Reconstructing different ideas into a cohesive framework.

• Evaluation – Formulating informed personal judgments

• Application and creation – Employing and expanding knowledge in multiple contexts.

The diverse definitions of "critical thinking" can be classified into three categories (see Table 1):

• Associated with the pragmatic approach mentioned before:

o A focus on the logical aspects of thinking.

o A focus on executive functions.

• Associated with dialogic thinking:

o A focus on practical wisdom.

Focus on logic	Focus on the executive functions	Focus on practical wisdom
"Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends."[17]	"Critical thinking comprises the mental processes, strategies and representations people use to solve problems, make decisions, and learn new concepts."[18]	"Critical reflection on practice becomes a requirement of the Theory/Practice relationship, without which theory can become lip service and practice activism."[19]
"criticism is to make explicit, if he can, the *reasons why* he approves or disapproves. Criticism, in this generous and educative sense, is the same as the *exhibition and defense of principles* and standards".[20]	"It is the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions. Critical thinkers use these skills appropriately, without prompting, and usually with conscious intent in a variety of settings. That is, they are predisposed to think critically. When people think critically, they are evaluating the outcomes of their thought processes-how good a decision is or how well a problem is solved."[21]	Critical thinking results from the interaction between reading and writing. Both activities are integrated by dialogue as an articulating axis. Reading, dialogue, and writing contribute to a person's ability to develop structured, clear, and coherent thinking[22].
	"that mode of thinking — about any subject, content, or problem — in which the thinker improves the quality of his or her thinking by skillfully analyzing, assessing, and reconstructing it. Critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking. It presupposes assent to rigorous standards of excellence and mindful command of their use. It entails effective communication and problem-solving abilities, as well as a commitment to overcome our native egocentrism and sociocentrism."[23]	

Table 1. Critical Thinking emphases - Source: Author's creation

Dialogue, then, serves as a pervasive activity within three levels:[24]
1. Personal – Engaging with the author's voice during the reading process.
2. Interpersonal – Interacting with peers through discussions and argumentative exchanges.
3. Reflective – Writing to enhance understanding and develop new insights.
This reciprocal exchange cultivates critical engagement, wherein individual thought shapes and is influenced by collective discourse. Therefore, dialogue encompasses cognitive and social skills—such as attentive listening, effective communication, and adaptability—essential for success across academic, professional, and personal domains.[25]

RESEARCH DESIGN
Sampling
This mixed-method research uses four analytical levels (see Table 2). Firstly, the researchers reviewed the curricula of all degree programs at universities accredited by the Chilean National Accreditation Commission (CNA) as of April 2023 (see Table 2). The analysis focused on identifying the number of

universities that offered critical thinking as an independent course, including courses in Literacy and Communication, or explicitly sought to cultivate students' critical thinking skills within their institutional mission, vision, or educational model. In the qualitative phase (Level 4), the researchers examined the 14 CNA-accredited universities that offered critical thinking as a standalone course.

Quantitative Phase	Sampling Strategy	Universe/Data	N	Universe/Data	N
Level 1				Universities offering Critical Thinking as an independent course.	14
Level 2			50	Universities offering literacy and communication courses.	13
Level 3	Intentional	Accredited programs by CNA		Universities declaring the need or objective to teach critical thinking to their students.	47
Qualitative Phase			**N**	**Universe/Data**	**N**
Level 4			50	Universities offering Critical Thinking as an independent course.	14

Table 2. Sampling - Source: Author's creation

Methods of data collection

The data was collected from syllabi and course programs at the participating universities and further increased with semi-structured interviews with faculty and program leaders. This approach facilitated a thorough understanding of how critical thinking is taught and is pedagogically grounded.

Data analysis

A combined analytical approach was employed, integrating both inductive and deductive analyses. The literature relevant to this study was examined thematically using the same approach applied to the empirical data. Hence, the researchers examined key studies about how critical thinking is conceived and taught. The studies were analyzed thematically, using an a priori coding technique, and integrating categories through code verification for enhanced reliability.[26] During the data analysis, the researchers developed an open coding technique, followed grounded theory principles, and then compared the data against the theoretical themes. This dual strategy ensured that theory and empirical evidence informed the analytical process and aligned with one of the key issues identified in the literature review: the persistent gap between theory and practice.

In this way, the findings were compared against frameworks that support critical thinking teaching, such as Biggs et al.'s[27] constructive alignment and the Structure of Observed Learning Outcomes (SOLO) taxonomy. To ensure consistency, these findings were cross-referenced with Laurillard's Conversational Framework[28] to identify the learning approaches embedded in course design and instructional practices.

RESULTS

The qualitative data were organized into three broad categories (see Figure 1). Sub-themes emerged from these categories and will be described and explained as follows.
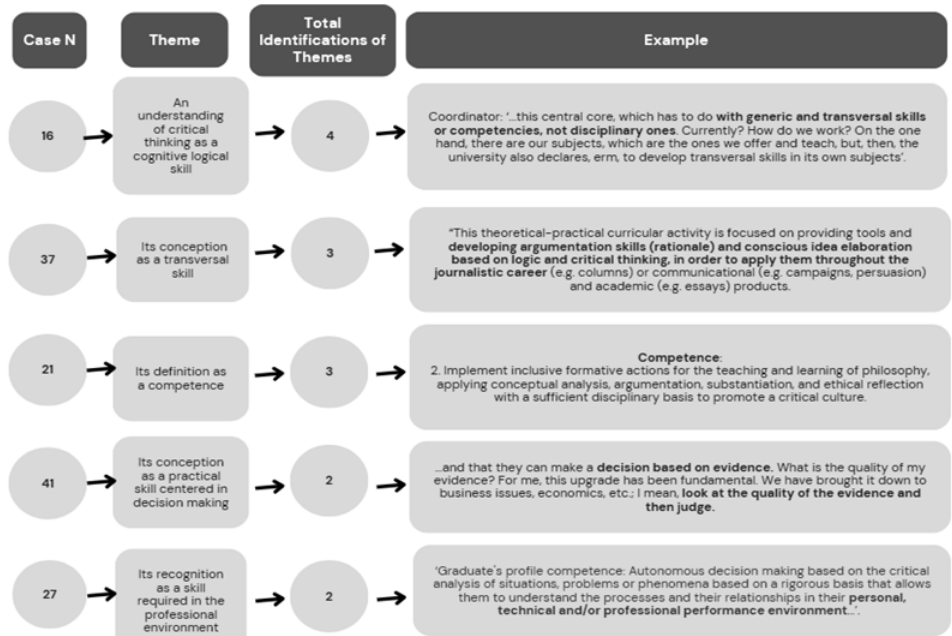
Figure 1. Critical Thinking's conceptualization, as declared by the cases
Source: Authors' creation

Critical thinking conceptualization

Interviews uncovered different notions of "critical thinking", reflecting the various perspectives of experts in the field. Five nonexclusive approaches underlie its instruction (see Figure 1), revealing its adaptability within university education. Nonetheless, the distinction between ability and competence remains ambiguous. Critical thinking is framed as an intellectual ability in three cases, whereas it is viewed as competence in two.

We also investigated the theoretical foundations of critical thinking instruction in Chilean universities. Although most cases do not explicitly reference a specific framework, one case grounds its teaching on argument development, with Case 16 directly citing Toulmin's[29] argumentation model and Facione's[30] perspective. One interviewee from Case 40 indicates that behavioral economics has influenced their approach. Hence, multiple lines of thought underpin its teaching, making it challenging to reach a consensus on its meaning and how it should be taught.

CONTENTS AND SKILLS IMPLICATED

Theme	Definition	Appearances in data
Logic	Logic entails analyzing and applying structured reasoning principles grounded in established rules and symbolic systems. In the context of critical thinking instruction, it fosters three essential skills: (a) argument identification, which involves recognizing premises and conclusions; (b) validity assessment, focused on evaluating coherence and consistency; and (c) rule application, which utilizes syllogisms and logical inference schemes.	17
Argumentation	Argumentation entails defending and assessing positions by using logic and evidence. It includes the following key components: - *Argumentative structure*: identifying and constructing arguments, premises, conclusions, and implicit assumptions. - *Critical evaluation*: assessing an argument's soundness and the ability to differentiate valid reasoning from logical fallacies. - *Evidence use:* practising bolstering claims with data, examples, and quotations. - *Ethical and logical persuasion*: influencing others rationally while steering clear of bias and emotional appeals. - *Debate and counterargumen*t: anticipating criticism and the ability to respond constructively.	10
Analysis and critical discourse	Analysis and critical discourse enclose systematic language use to articulate ideas, support positions, and enable effective communication. They deal with the recognition, analysis, and evaluation of how people construct arguments and convey messages persuasively.	4
Ethics	Ethics entails the critical analysis and application of foundational principles and values that underlie critical thinking, such as fairness, respect, intellectual integrity, and social responsibility. This field emphasises the value of reasoning, analytical rigor, and accountability, thereby promoting equitable and reflective decision-making across multiple contexts.	2
Inquiry	Inquiry is a methodical procedure of locating, analyzing, and validating information aimed at reasoning, analytical, and evaluative skill development. This approach improves intellectual curiosity and encourages formulating insightful questions, rigorous data collection, and deriving informed conclusions. Within critical thinking teaching, inquiry is a foundation for evidence-based decision-making and actively promotes autonomous and reflective learning.	1

Theme	Definition	Appearances in data
Reading and writing	Reading is an active and reflective engagement with texts, involving analysis, synthesis, and evaluation to enhance content comprehension, identify salient arguments, relate ideas, and formulate an informed standpoint. This endeavor requires critical questioning and incorporating recently acquired knowledge into the reader's prior conceptual framework. Writing requires the clear, structured, and logical articulation of ideas guided by established academic conventions and supported by plausible evidence. This form of writing needs the construction of well-reasoned arguments, precise language employment, and synthesis development to convey analytical and evaluative perspectives effectively.	1

Table 3. Critical Thinking Conceptualization - Appearances in Data
Source: Authors' creation

The prevailing contents in critical thinking teaching include logic, argumentation, and discourse analysis (see Figure 1, Table 3 and 4). In two cases, these contents were identified through the units or the bibliography declared (see cases 16 and 32 in Table 4).

N Case	Argumentation	Discourse Analysis	Logic	Theme total recurrencies	Example
32	☐	☐	☒	17	**Unit I:** What is Logic? Fundamental concepts. Syllogisms. **Bibliography**: Arredondo, M. (2016). *Lógica. Elementos básicos*. Santiago de Chile: Catalonia. Copi, I. y Cohen, C. (2013). *Introducción a la Lógica.* México: Limusa. García, L. (2007). *Lógica y pensamiento crítico.* Manizales: Editorial Universidad de Caldas.
32	☒	☐	☐	10	**Contents:** Introduction to Argumentation. What is argumentation? Argument classification. Language functions.
32	☐	☒	☐	4	**Contenidos:** What is discourse? Oral discourse. Written discourse. Text analysis. Text elaboration.
16	☐	☐	☒	1	**Bibliography:** Copi, I. y Cohen, C. (2013). Introducción a la Lógica. México: Limusa.

Table 4. Contents within Cases – Source: Authors' creation

CRITICAL THINKING CONSIDERATION IN THE TEACHING DESIGNS: TAXONOMIC LEVELS

John Biggs' SOLO Taxonomy[31] organizes student understanding across four categories: (a) unistructural (identifying a single aspect), (b) multistructural (understanding multiple aspects independently), (c) relational (integrating various aspects), and (d) extended abstract (applying knowledge to new contexts), facilitating constructive alignment by linking learning outcomes, teaching strategies, and assessments to foster deep comprehension.

When applied to our cases (see Figure 2), the taxonomy illustrates varying complexity in critical thinking instruction. The emphasis is primarily on the extended abstract and relational levels, followed by unistructural, while multistructural appears less frequent. This pattern suggests challenges in clearly and coherently tracing a systematic approach to transit from basic to refined comprehension levels in fostering critical thinking skills. This result also implies a lack of progressive integration between theory and practice. Observations of teaching practices or analysis of learning materials and assessment instruments could shed more light on this matter.
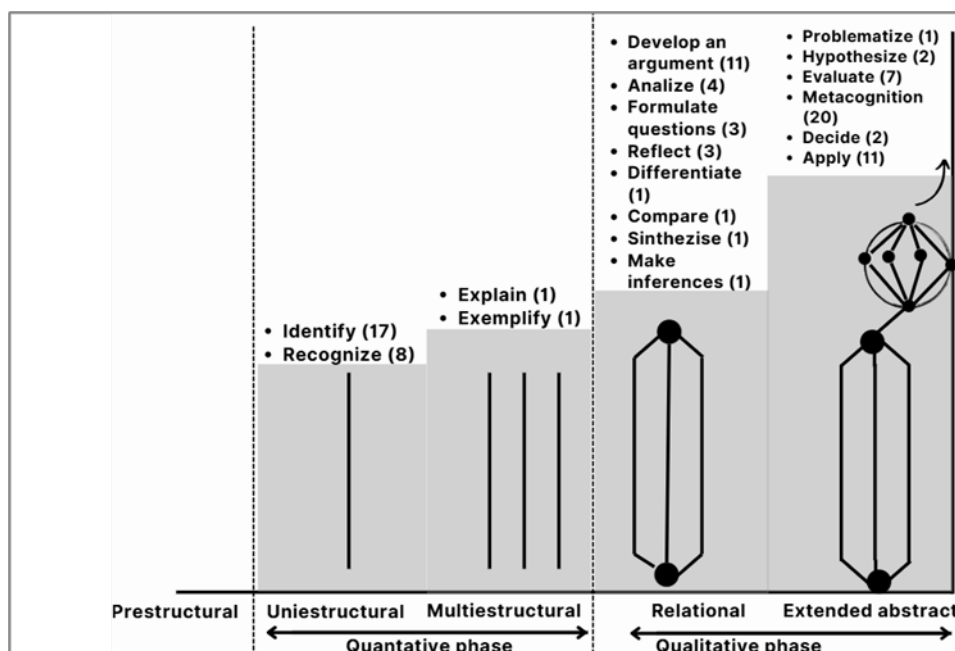
Figure 2. Taxonomic levels for teaching critical thinking in Chilean universities.
Source: slightly adapted from Biggs et al. (2022) to the data.

Teaching strategies and learning types

Laurillard's Conversational Framework[32] bridges the theoretical and practical dimensions of teaching, and suggests that educators should promote six distinct learning types: acquisition, discussion, inquiry, practice, production, and collaboration (see Figure 3). The practical component emphasizes actions, experimentation, and iterative feedback, while the theoretical dimension focuses on dialogue, reflection, and conceptual understanding. These elements enable learners to build knowledge through interaction and feedback.

The data analysis reveals that learning through acquisition prevails, followed by discussion, production, collaboration, and practice (Figure 3). This trend implies a predominant emphasis on theoretical understanding, raising concerns about translating reasoning into practical application.

Many data sources lack comprehensive assessment strategies, leading to uncertainties about how "dialogue", for instance, effectively promotes critical thinking (see Figure 3).
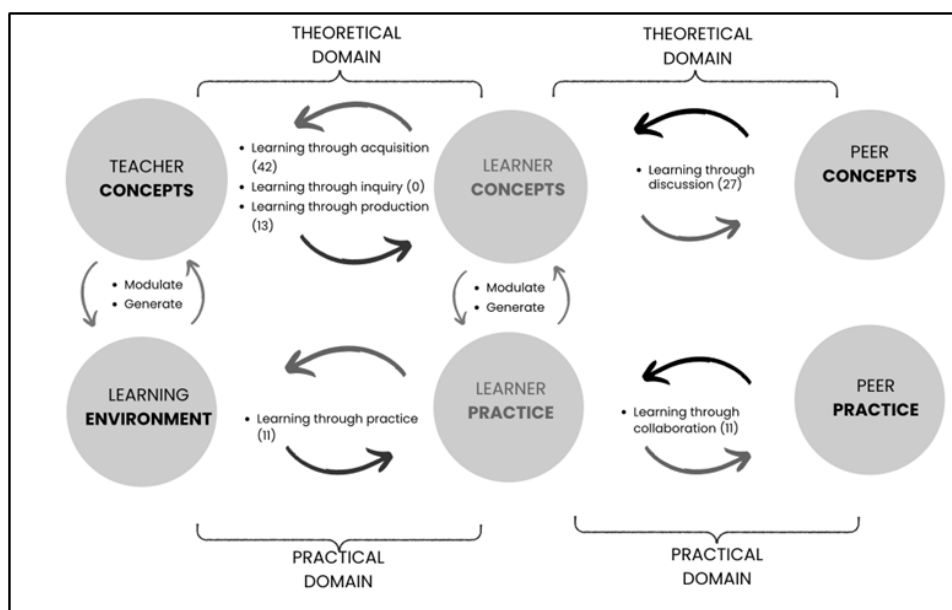
Figure 3. Types of learning found in data
Source: Slightly adapted from Laurillard (2012).

Critical thinking teaching across the data mostly occurs face-to-face, with one case online (Case 16), often using digital technologies to support instruction. This trend corresponds with a position that prioritizes critical thinking as an intrinsically human ability, thereby reducing the emphasis on digital technology as the primary focus of learning. This result is evident in Case 7, which, in the generic competencies set out in the syllabus, proposes that the student should:

"Demonstrate ethical coherence between their value postulates and their actions, respecting human rights and actively participating in community organizations, prioritizing social responsibility from a Christian perspective" (program, Case 7).

Likewise, Case 27 states in its program that "developing critical thinking in students involves training cognitive, socio-affective, and communicative skills, all within a value framework embedded in the common good, in the search for the social and natural good" (program, Case 27).

Contrarily, while Case 16 focuses on mental processes, structures, and systems, it lacks an integrative perspective considering intrinsically human dimensions (see Table 5). These differing standpoints highlight the multiple pedagogical approaches and the inherent challenges of achieving a consensus on suitable assessment criteria.

Learning outcomes	Contents
Apply critical thinking standards and strict formal and material logic to rigorously and in-depth analyze phenomena in the environment.	**UNIT I: CRITICAL THINKING** ● What is critical thinking? ● Elements of critical thinking ● Intellectual standards. ● Intellectual virtues
Develop one's own judgements and arguments according to Toulmin's argumentation model based on the argument analysis that supports the information.	**UNIT II: ARGUMENTATION** ● What is an argument? ● Difference between argument and opinion ● Argumentative models: ARE and Toulmin
Evaluate one's own and others' thinking through a method based on criteria, facts and objective evidence according to intellectual standards and values, distinguishing reasonable arguments from fallacies, sophistry, prejudices and opinions.	**UNIT III: REFUTATION AND FALLACIES** ● Refutation and fallacies ● Refutation techniques ● Fallacies and sophistry
Question critically, using systematic and analytical questioning to discipline thinking and learning.	**UNIT IV: APPLIED TOPICS** ● Specific topical issues to which critical thinking can be applied.

Table 5. Case 16 - Learning outcomes and contents - Source: Authors' creation

CRITICAL THINKING ASSESSMENT

Interviews stressed the need for a validated instrument designed explicitly for Chilean university learners to assess critical thinking skills through pre- and post-test methods, which the coordinator of Case 32 illustrates:

"Of course, I mean, we need a way to measure it. We should have an instrument to measure it annually" (Faculty Coordinator, Case 32).

Faculty members in Case 16 alluded to a "master rubric" to assess oral and written argumentation. However, neither the interviews nor the documentation provided complete details regarding this instrument's adaptation to diverse assessment contexts. This lack of clarity raises concerns about the effectiveness of teaching and assessing critical thinking skills.

CONCLUSION

This study explored the state of critical thinking instruction in Chilean universities. Our primary finding suggests a lack of an agreeable definition for critical thinking instruction, with most courses primarily connecting it to logic and treating it as a cross-disciplinary skill. A greater consensus on its conceptualization is necessary. Regarding content coverage and teaching methodologies, courses emphasize logic-based reasoning, particularly within the SOLO taxonomy's relational and extended abstract levels. However, there is a limited progression from fundamental to sophisticated thinking, and syllabi often do not clearly outline how critical thinking skills are developed and assessed.

Courses predominantly employ logic exercises and argumentation tasks; however, a gap prevails between faculty theoretical instruction and learners' practical application. This misalignment underlines the need for a more integrated approach that effectively bridges theory and practice.

Following Roberts and Billings, a framework that prioritizes dialogue as a vehicle for critical thinking instruction is needed. The notion entails the integration of rigorous theoretical reasoning with the practical dimensions of university learning, through dialogue and ethical action, cultivating an intellectual and moral habit over time. As the authors sustain, dialogue is vital for comprehensive personal and academic development. Thus, we propose an approach to "critical thinking" that implies rigorous theoretical reasoning applied to praxis through dialogue and ethically responsible actions guided by practical wisdom. To the extent that it is constantly exercised, this way of thinking and acting transforms into an intellectual and moral habit that gradually shapes a way of being. The above is fundamental for achieving a fulfilling life in different personal and social dimensions.

This study has certain limitations, as the analysis of the programs and syllabi could have been further enhanced by incorporating observations of teaching practices and examining assessment instruments to better understand how the stated strategies are implemented and evaluated. Future research should expand to conduct classroom observations and assessment analyses to better understand how critical thinking is taught and evaluated, ultimately enhancing its effectiveness within higher education contexts.

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INTERNATIONAL COLLABORATIONS IN UNIVERSITY ART EDUCATION

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INTRODUCTION

In this article, we discuss our experiences with the International Art Collaborations Network (INTAC), highlighting collaboration as a teaching and learning methodology and discussing how online collaboration can be effective for bringing international experience to students. INTAC's goal has been to explore forms of online collaboration to bring international experiences directly into the classroom. Over 15 years, we have gained an understanding of how online environments may be productively utilized and this is articulated in sixteen focused chapters in our recent book, *Modelling International Collaborations in Art Education*.[1]
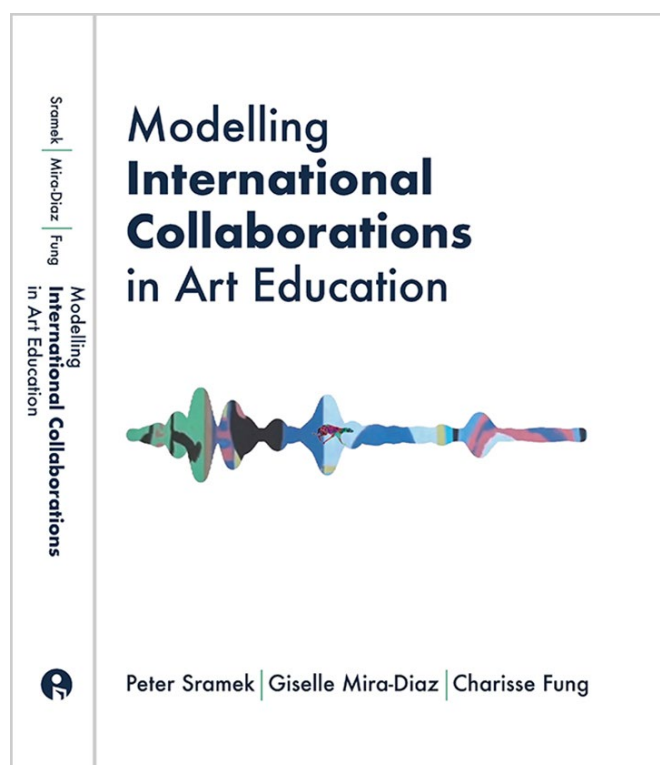

Figure 1. International Collaborations, Intellect, 2024

INTAC is a group of professors at multiple universities in the fine arts who have been bringing students together online each year since 2010 to collaborate on art projects, culminating in exhibitions arranged by one of the universities. Current partners are in Canada, where Peter Sramek is located, Mexico, Korea, Finland, Germany, Japan and USA where Giselle Mira-Diaz leads her group. The eight-month program currently brings about 60 students together in online Zoom sessions, working with them synchronously and asynchronously on a Miro whiteboard. Through online meetings, students introduce themselves and brainstorm responses to a theme. In finding commonalities, they conceptualize art projects, form small groups and work together, communicating independently over one or two semesters to complete works in media of their choice: photography, video, drawing, sculpture and so on. The faculty co-facilitate sessions and hold in-person meetings with their students, meeting once a month with the professor group to plan and coordinate. The overall structure of the program is set out on the virtual whiteboard, making the process visible there and accessible to all.

WHY INTERNATIONAL COLLABORATION?

If students are to thrive as global citizens, they must have knowledge of the multiple realities that impact our lives and those living elsewhere in the world. Understanding the worldviews of others and learning to share and interact productively with those of other cultures prepares students for better futures. Applied to arts education, there is the possibility for broader understanding through shared cultural production. Today, when so many of humanity's visual and media experiences are designed and controlled on a global scale, art and culture cannot be understood if kept separate in neat silos and viewed through stereotypes. Direct experience with those unlike ourselves is a step towards greater awareness. This is, of course, an ideological stance. It is however an important argument to make when fighting for inclusive and international experiences in educational programming.

In responding to the question of why organize international collaboration as part of a university program, three key outcomes have emerged from our research with INTAC faculty and past students: greater global awareness, innovations in art and art education, and the creation of lasting connections.[2]

Global Awareness and Transcending Borders

International collaborations, such as those in the INTAC program, remind us that we are more connected than we think. Bringing together participants from multiple countries exposes students and educators to diverse cultures and worldviews. This broadens cultural sensitivities, which is crucial in today's interconnected world. It fosters global citizenship and helps students navigate the complexities of multicultural societies. This is achieved organically for students in a program like INTAC as they get to know one another and build connections. Interviews with INTAC alumni show that many students welcome such opportunities. When asked why they signed up, 91% reported wanting to meet students from other countries, 85% were interested in collaboration and 83% were attracted by opportunities to travel internationally. Many students joined even though they did not receive school credits.[3]

The online format of INTAC can effectively involve a diversity of students, allowing greater possibilities for intersectional artistic experiences. The curricular focus can embrace global challenges and discussion of intersectional subjects can be promoted by bringing together students living in the global south with those in Western and Eurocentric regions. Some issues, such as the environment and social justice are globally interlinked. International collaborations allow students and educators to work together on such topics, fostering a sense of shared responsibility and collective action.

Revolution, Desire, Turmoil, Ritual, Complexities of Language, Transformation, and Displacements are some of the theme titles explored over the past 15 years of the program.[4]

The INTAC team has also hosted Sustainability Jams in 2022 and 2023,[5] involving up to 16 university partners across 10 time zones. Over 50 students worked together for 2 or 3 weeks, choosing a sustainability issue to explore, engaging in dialogue and undertaking projects resulting in creative presentations shared in a public online forum. Such events can energize local conversations and actions by connecting them to broader communities.
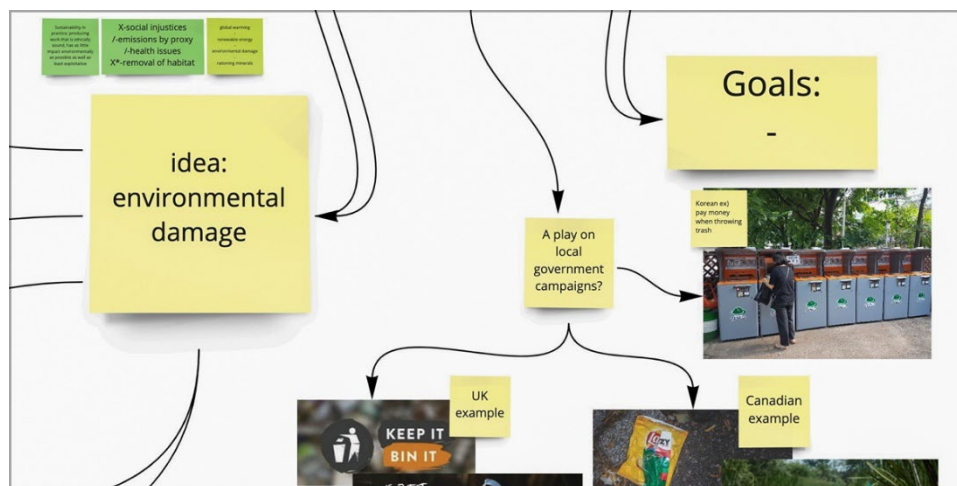
Figure 2. Whiteboard sharing of group planning process (detail)

Innovations in Art Education

Collaborative projects across borders provide students with unique learning opportunities beyond traditional classroom settings, bringing together different artistic traditions and educational approaches. Engaging with peers from different countries enhances creativity, critical thinking, and adaptability. This fusion leads to new practices and forms of artmaking.

Many universities have study abroad programs or study trips, but INTAC, with its online and in-person hybrid, allows for international exchange without the cost of travel, which is not accessible to all. Although fsome students can travel to a group exhibition, this is not required, nor is it the focus, which is the online collaboration process itself.

Lasting Connections

When interacting, INTAC students learn about each other's day-to-day lives and find threads that connect them, sharing artistic interests and dreams for their futures. Long-term relationships develop and networking often continues beyond the project's duration, continuing to build cross-cultural awareness and potentially leading to future artistic collaborations, academic partnerships, and professional opportunities.

INTAC itself is constantly evolving, encouraging students to take initiative and leadership. Many have continued involvement in the program over multiple years and beyond graduation. Independent projects between alumni have taken place.[6] *Modelling International Collaborations in Art Education* illustrates these rich exchanges along with alumni comments on their experiences.[7]

'This program has really changed how I work as an artist. My world has grown significantly.' 'I am now more collaborative and think of my work on a global platform.' 'I learned a lot about my own practice... it gave me courage to continue...' 'We are not alone. Whatever we do, we work around people. The more people we know in our field of expertise, the better work opportunities we can have.' 'There is never only one way to communicate an idea.' 'It encouraged me to think more boldly and try to integrate people from all around the world... I see collaboration much more freely now and accessible thanks to the online platforms.' 'Having cultural differences allowed me to think everything on another way and expand what I thought was 'normal'.' '... see the world through a global lens.' 'Ideas and perspectives about arts from various cultures and country, which [lead] me to find and pursue what I want to do in the future.' '...[gain] professional experience.' 'My expectations were to enrich my understanding of others' cultures. I was surprised to see how similar our cultures are within the scope of photography.' 'INTAC has taught me a lot about challenges and benefits of collaboration, and has been a crash course in show planning, curation, and execution.' 'Learning how to play your 'role' in group situations: leader vs. participant vs. collaborator.' 'Quick problem-solving, how to share some things that are not 'translatable' and to be a leader when it's needed and to listen when it's other's turn into leadership.' '...understanding how much coordination goes into a production/exhibition.' 'I learned that you have to be extremely active in leadership roles and can't [simply] expect people to participate.' 'Collaborative opportunities also presented the requirement for skills in production/project management to some extent. These skills are often vital when producing larger, team-based works of art. I found very little opportunity outside of INTAC to practice and hone these skills.'

Figure 3. Comments excerpted from alumni focus groups

A BROADER CONCEPTION OF TEACHING

Teaching involves planning, organization and delivery; educational institutions build structures in order to function: courses, departments, schedules, requirements. Somewhere within these systems are the living experiences of learning. The relationship between students and faculty must find a balance between formal structure and organic interactions. The best teaching encompasses the creation of an environment in which students self-actualize and generate their own knowledge. It is in open spaces that new, and often unplanned, opportunities present themselves and shifts occur from the rote to the creative.

Group creativity and problem-solving is a social experience that goes beyond knowledge accumulation to address team building, leadership, and communication skills. Conceptualizing teaching as a form of collaboration is one way to enable this. As university programs rush to use online tools for teaching, it is important to consider how virtual environments can be used to offer social and collaborative learning experiences, rather than reproducing traditional knowledge delivery in a technological guise. Over the past two decades, many educators have explored how to enable online learning effectively. The *Future Learning Environment* group, which formed at the University of Art and Design Helsinki and Helsinki University in the late 1990s, is an example that based their models for online collaborative education on understanding learning as a participation in social processes of knowledge construction.[8] They posited an environment in which explorative processes are facilitated and students are taught to define questions themselves.[9]

Adopting collaboration in one's syllabus can mean asking students to work together or maybe forming a group of educators to plan and guide learning experiences. However, collaboration can also be approached as teachers and students creating what happens in the learning environment together. A communal space evolves where everyone develops agency. INTAC encompasses these multiple levels of collaboration, leading to active interaction in both teaching and learning. This facilitates effective student engagement, which can be a challenge between institutions. With professors modelling collaborative practices, the ability of the students to connect across institutional and cultural distances is enhanced.
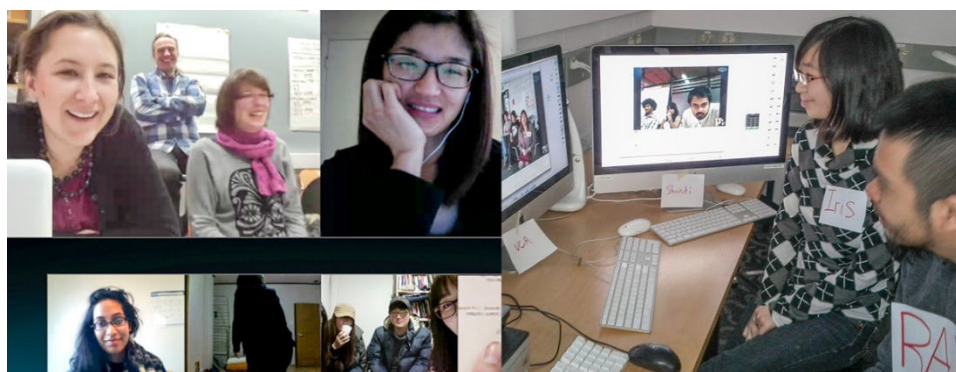
Figure 4. INTAC online meetings

STRUCTURING ONLINE COLLABORATIONS

Online collaborations can take many forms – remote lectures, exchange exhibitions, team charettes or extended projects. Today's online tools simplify the logistics of connecting and most of us are familiar with the essentials. With one or a few partners willing to work together, the structure can be designed to fit the situation. Smaller projects can often be initiated by individuals without the need for institutional complications.

Much has changed over the past fifteen years of INTAC. We have learned a great deal about the dynamics of online interaction and how to support active engagement. With platforms constantly changing, there has been the opportunity to experiment and observe how students respond to various modes and tools. We provide a few suggestions here and more is covered in our chapter, "Activating the Online Space".[10]

Set the stage and actively facilitate

It is essential to create an organized online workspace, provide orientation and guide the process, responding actively to challenges as they arise, watching for students having difficulty. Open learning requires skills that some have yet to develop, such as confidence, flexibility, assertiveness, self-motivation and the ability to function in a less-structured environment.

Trust the process

At the same time, one must allow the process to unfold, giving students freedom to take initiative. As Meera Margaret Singh points out, "When we move very fluidly through the year, we have no choice but to trust in the process and our students' abilities."[11] They may lead the way, being more current with online platforms and innovate creatively when given independence. This is an important learning dynamic to embrace.

Opportunities for social connection

During interviews with alumni, we heard that it is helpful to connect socially before expecting groups to begin projects. Currently, we facilitate informal online 'café' sessions where students share aspects of their daily lives, interests, and art practices. This introduces familiarity which they can build in on the absence of in-person contact.

Past participants have certainly stated that face-to-face experiences during the annual INTAC trips were significant. It would be wonderful to be able to equally fund all students' travel and even have them meet in-person before beginning to collaborate however, development through grants, donors and a centralized scholarship system would be necessary.

Visible student presence

Over longer timeframes, maintaining motivation can become a difficulty. It helps if individuals have a place to establish a visible identity online and are given active roles in adding to workspace content. They will feel seen and hopefully more invested in the community.

The visibility of activity is also a factor. A quiet workspace suggests nothing is happening, even if a great deal happens in working groups. This can be discouraging for individuals, especially if they face delays or silences from project partners. With overall progress visible in the workspace, such frustrations can be diminished.

Communication is key

The choice of working platforms and communication channels is crucial for encouraging student adoption and engagement. Observing the online dynamics and asking for student feedback will make clear what may not be working as intended. Changes can be made in subsequent iterations of a collaborative program. Some aspects we have noted during INTAC programming include:

Online habits

The INTAC experience suggests that students (and professors) will gravitate to communication tools that they know and use most often. Other channels get less attention. Favourites constantly change. It works to define a core communication space where faculty and students stay connected and informed, but also let students choose how to communicate with each other. This allows them to use what they are familiar with. In our experience, they will do this anyway, ignoring platforms which faculty establish.

Clear and accessible workspaces

Students will adapt well to workspaces that are easily accessed and at least somewhat familiar. This means that a Leaning Management System used at one institution may not be the best choice for working across institutions. At the same time, popular platforms may not be accessible in some countries.

Sometimes, a selected, well-organized platform will be underused. What seem to be simple barriers can reduce student uptake: logins, unfamiliar set-ups or software only used in one course.

In the workspace, static information needs a stable location that is easily referenced rather than being buried in a scrolling feed. For changes and announcements, being able to receive automatic notifications is preferable.

Communication challenges

For international collaborations, there can be challenges with differing time zones, languages and even expectations of what collaboration entails. For partners based in countries where English is the native language, we remind students to have compassion and acknowledge their privilege, understanding that not all partners are native English speakers, and some will rely on translation technology.

Normally, there will be some miscommunication, even disagreements. Check-ins with students and follow-up between faculty help identify and resolve such difficulties. INTAC aims to create a safe space with no tolerance for harassment or discrimination due to issues of race, gender, class, religion or sexual orientation. Collaboration requires an open environment where students feel free to discuss issues with faculty guidance.
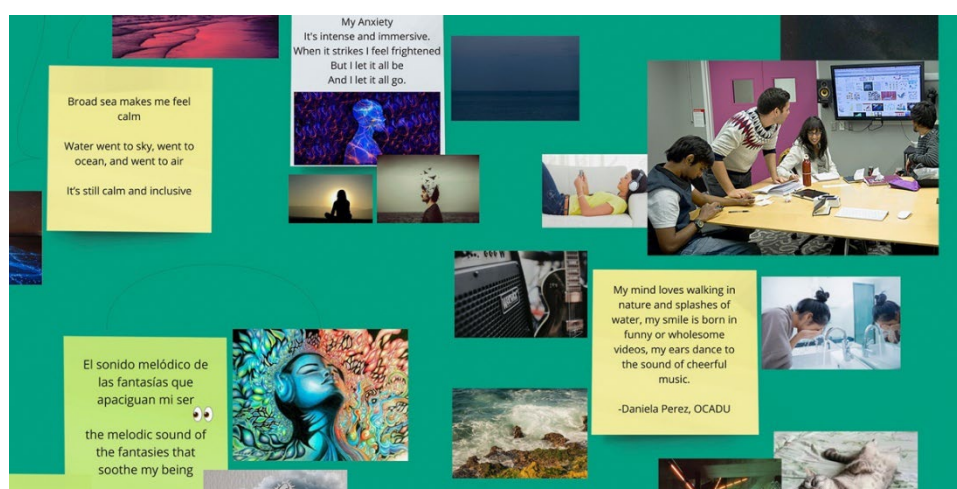
Figure 5. Whiteboard project process (detail)

EDUCATIONAL OUTCOMES

As educators we can ask how such collaborative approaches affect one's role as a teacher and why faculty would take this on in the face of the efforts involved. The positive outcomes for both students and faculty provide proof of the value in doing so.

The Teaching Role

Collaborative teaching suggests sharing control with students. Using an open set of expectations, supported by guidance and rules of engagement, one provides an interactive space where an organic process unfolds, supporting student agency and independence. This pushes the boundaries of top-down pedagogy.

As teachers, we tend to believe we know the best forms of learning and how to achieve them, what questions to pose, or how to define problems. Even in creative studio art courses, it is common for professors to assert the imparting of expert knowledge and critique. To admit that learning occurs in the moment of a shared process turns this on its head. Sometimes when the learning assignment is too prescriptive, students' thinking is narrower. An alternative can be for students to be included in defining topics or objectives. Approaching the classroom in this way, one can end up anywhere rather than aiming for a pre-envisioned outcome.

INTAC takes this approach, providing activities where students meet in breakout rooms to discuss and set their own creative directions. The teacher is part facilitator and part fellow-traveler. This approach

suits international collaborations where one enters a world where no one has hold of a central truth. No one is an expert. There are diverse realities, cultural perspectives, and bodies of knowledge.

Of course, this does come with challenges. Be it about art, creative process, culture and society, or teaching and learning, most of us, especially professors, feel we have a grasp on how things should be. By starting from a premise of inclusivity and viewing the classroom as a joint exploration, such underlying tendencies can be parked at the door, to be addressed when they intrude.

Why Would Faculty Do It?

When thinking about such alternative approaches, particularly when they are cross-institutional or international, one must ask why educators would take on such projects. They disrupt the usual expectations of delivery and require more time and energy beyond assigned workloads. There is often institutional resistance which makes it difficult to adopt an 'experimental' format. Many universities espouse belief in inter-institutional projects, while being rigid about course structures and approvals. So why are INTAC faculty doing this?

Dynamic classrooms

Experience shows that collaborative learning processes remain fluid. The classroom is more dynamic and with multiple instructors, the teacher becomes one person in a relational community. The experience is freer. There is creative energy that comes as one responds and adapts.

Collegiality

INTAC professors find positive energy in working together and can experiment alongside those with a similar curiousity. There is exposure to other ways of doing things and different institutional cultures. Professors share the planning and facilitation, solve difficulties. They develop professional and friendship bonds over time.

Building professional networks and opportunities

In addition, the international and inter-institutional aspects bring professional connections and opportunities for the professors, as well as the students. There are opportunities to travel, speak, publish, or find research partners.

The Benefits for Students

Naturally, for the dedicated educator, the benefits for their students are a key motivator. Observing changes in one's students as they engage in collaborative learning is exciting. The format calls for active engagement and the challenges of communication across languages, cultures and physical distances see students develop agency. They learn to cooperate and how to lead; quiet ones develop confidence. Challenges, and sometimes conflicts, lead to new awareness and social skills. The collegiality builds a feeling of belonging to a community beyond oneself. In this active environment, students are freed from being just a body in a classroom.

For international collaborations, the cross-cultural aspect is also significant because it can recognize students' own identities in a diverse and inclusive space. For those of us in Eurocentric institutions, an experience such as INTAC can be where many of our students, who often come from diverse backgrounds, feel freer to be themselves.

CONCLUSION

Collaboration as a pedagogical approach enables both students and faculty to engage in more open communities of learning. Embracing online spaces can bring international contexts directly into the classroom. There are challenges in designing and adapting to new ways of teaching and to using technology. However, the ability for individual professors to add such international collaboration to their curriculum inexpensively, with currently available tools, means that we are less dependent on institutional and budgetary constraints. The outcomes can have profound effects for today's students and their relationship to the globalized realities we inhabit. We often speak of art students finding their voice. It seems to happen in learning environments such as this.
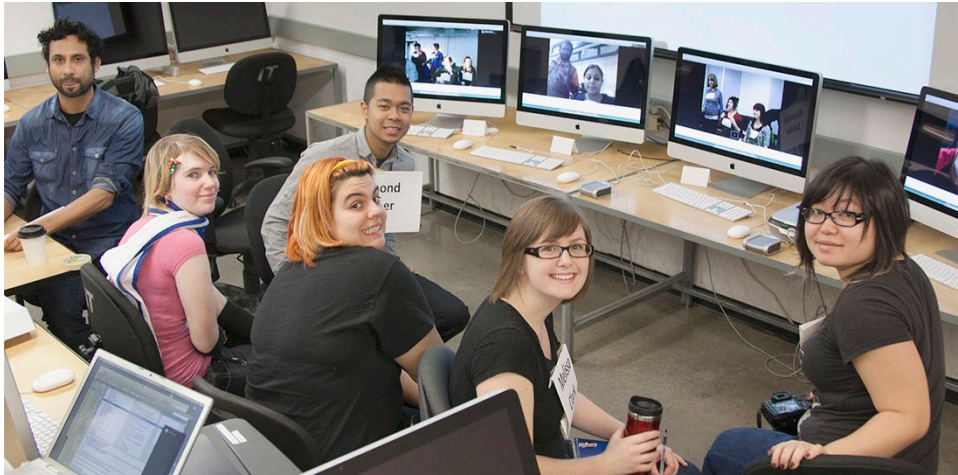
Figure 6. Presentation event with multiple Skype connections, 2011

AMPS | California State University Los Angeles, USA | Universidad de los Andes, Chile | Universitas Katolik Parahyangan, Indonesia

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NOTES

[1] Peter Sramek, Giselle Mira-Diaz and Charisse Fung, *Modelling International Collaborations in Art Education* (Bristol: Intellect, 2024).

[2] The INTAC Archive Project began its work in 2020 by assembling documentation of the previous decade of programming. In the book, Giselle Mira-Diaz and Charisse Fung, who participated in INTAC as students, have addressed the impacts of collaborative curriculum from the student perspective based on focus groups and interviews with past INTAC participants, as well as their own personal experiences in the program over multiple years.

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FLIPPING THE ACADEMIC SCRIPT: AN INSTRUCTOR'S FLIPPED APPROACH TO PRESERVICE TEACHING

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INTRODUCTION

Education and teacher education are evolutionary. As time and society change, teacher education changes and must also adapt. One consistency that has remained and will remain is the commitment to the educational advancement of students of all ages and backgrounds. For this progress to continue, teacher educators are tasked with reinventing, restructuring, reorganizing, recreating, and rethinking their instructional and methodological approaches. Educational research constantly reveals gaps in teacher education, many of which point back to the need to address the whole student. It is important to consider all aspects of student wellbeing—physical, emotional, psychological, and mental health—when developing teaching strategies. These considerations must all benefit another important part of education: students' cognitive development, including critical thinking, reasoning, and problem-solving skills, which enable students to process information concerning their academic and personal lives. The key to doing this effectively is to find ways for students to identify with their learning content and develop an intrinsic motivation to succeed in it.

This paper is a critical reflection of a university instructor's pedagogical practice in teacher education that includes inclusive pedagogical practices, such as flipped classroom, ungrading, students as instructional collaborators, and active learning. These strategies aim to foster inclusive teaching and learning for preservice teachers, focusing on the whole student, while modeling teaching practices that they in turn can use in their future teaching.

REVIEW OF LITERATURE

One recurring concern in the literature is the need for whole-student teaching approaches. Even before the pandemic, there was a call to use teaching strategies that addressed the whole student, meaning that teaching methods should provide a balanced focus on student wellbeing.[1] During the pandemic, this call intensified, emphasizing inclusive teaching approaches that support physical, emotional, psychological, and mental domains in addition to academic ones.[2] In higher education, there was growing awareness of college students' reading performance.[3] An increasing number of students' reading time was being dedicated to content not related to courses, while the amount of reading students do for courses was decreasing.[4] Additionally, there was a call to evaluate different contexts of engagement in courses so that engagement can be improved.[5] Connections between sociocultural issues and motivation were also noted, as social and cultural components influence student motivation

and should be considered in instructional planning.[6] Once the pandemic hit, the entire educational infrastructure was impacted, particularly in the areas of finances, instruction, and teaching modalities.[7] This was due to various factors related to the shift to online learning, the use of informal learning strategies, and other methods that were not traditionally used in classrooms before the pandemic. Instructors, in their best efforts to navigate the educational crisis brought on by the pandemic, were tasked with making extensive modifications to their teaching strategies, including changes to late work policies and expectations for quality of student work. After the pandemic, transitioning back to previous teaching strategies was challenging for both students and instructors, as the strategies used to teach and prepare students for college had become the new normal.[8]

Connections between higher education instruction before and after the pandemic include the following: first, many of the issues encountered during the pandemic had already been present for years, but were exacerbated by the pandemic. Second, the pandemic demonstrated a further need to implement whole-student teaching approaches in college classrooms. Third, reading performance plays a critical role in students' ability to understand learning content and complete assignments, and it has been negatively impacted by reduced time devoted to course readings. Fourth, adjusting to in-person classes after participating in virtual learning formats is a big adjustment and should be considered in structuring courses. Lastly, the pandemic's impact on student performance should be addressed through course structure and teaching strategies in addition to the issues that were already being raised before the pandemic.

INCLUSIVE TEACHING STRATEGIES

According to both research and personal experience, students should be considered active participants in their learning process. This means their perspectives and engagement should inform instructional decisions. The following outlines strategies the instructor implemented over two semesters.

Valuing Student Voices

Valuing student voices involves two key practices: creating a space for students to be heard and the instructor serving in dual roles—as both teacher and learner. To ensure student success in the classroom, instructors should adopt empathetic teaching approaches that allow them to learn students' learning styles and processes, which positions students for academic success.[9] In practice, this began by taking the first class in the semester to ask meaningful questions, such as, *"What is it that you need to be successful in this course?"* and *"How do you learn best?"* After gathering student responses, the instructor committed to making the best effort possible to provide the requested support. These resources varied from video clips and textbook examples to having breaks, decorating the classroom, and shortening lectures. To ensure follow-through, the instructor took notes on student feedback, read the notes back to the class for verification, and added any additional suggestions the students shared going forward. The time was set aside to review notes, reflect, and think deeply about how to apply different teaching strategies to deliver content that met the students' needs and instructional needs, while ensuring the course goals were met. This approach was used in three courses over two semesters.

Careful consideration was given to the instructional concerns that arose. These included: covering critical issues such as race and gender, understanding learning content, completing assigned readings, motivation, engagement, participation, attentiveness, long courses, applied work, observing social studies instruction in field placements, methods, writing, rigorous assignments, and course structure. From an instructional standpoint, the following observations were made. First, covering critical issues in a social studies course is challenging and inevitable. Second, evidence of having read the textbook

was difficult to determine. Third, the issue of reading impacted students' understanding of learning content and their application of the readings to assignments. Fourth, students at times appeared inattentive—especially in longer classes— depending on the course, the time of day, how the content was taught, and course length. Fifth, there was a clear need for instructional examples that demonstrated how to teach, adapt, and apply the learning content using effective teaching methods. Lastly, student feedback confirmed many of the instructor's concerns.

Next, time was dedicated to reflecting on broader conversations about higher education, college preparation, and how both evolved before, during, and after the COVID-19 pandemic. After multiple discussions with colleagues about the personal differences observed during this period and student responses to pandemic-era and post-pandemic instruction, themes began to emerge. These themes aligned with the instructional concerns the instructor had. This prompted a review of the literature of higher education before and after the pandemic.

Problem-Solving

After initial reflection, reference was made to the literature to confirm what research in education and teacher education indicates about addressing the concerns that were noted. Through this, the instructor identified gaps in the teaching strategies used and recognized how the COVID-19 pandemic impacted many instructional approaches in secondary and higher education. While the focus was on preservice teaching, it was important to understand what was impacting secondary education because many students attended high school and transitioned to college during the pandemic. Next, the instructional approach was refined to include primary teaching principles of early childhood education. To do this, the instructor applied theoretical and educational concepts from early childhood education at the collegiate level. This served three purposes: first, it equitably met student needs; second, it taught students the strategies they would be expected to use in their future classrooms as early childhood educators; and third, early childhood educational and theoretical principles were combined with existing literature on post-pandemic education to address the educational issues encountered in the instructor's practice through inclusive instruction.

Student-Centered Instruction

Student-centered instruction "helps students to become self-sufficient, creative thinkers, and value the subject that is being taught."[10] The first strategy implemented was treating students as course collaborators. In this, students were given autonomy in determining how they fulfilled certain parts of the syllabus, within instructional boundaries. The instructor presented nonnegotiable components of the course, such as all assignments and a class agenda, to ensure consistent coverage of course material. Students, in turn, exercised their autonomy by deciding how to complete certain tasks. One example was reading the textbook in class using the flipped teaching approach. Additionally, some assignments allowed students to choose their own presentation topics within an overarching theme, while others were more structured. In one course, the instructor allowed the class to decide how to demonstrate their knowledge and understanding of course content. This was implemented after completing courses in which the instructor determined how that would be done. The goal was to give students with early experience in developing planning and organizational skills they would need in the teaching profession. This was done by taking student feedback and creating a weekly agenda that included their decisions. The instructor made additions, including time limits to stay on task and textbook coverage. While the instructor did most of the planning, students were able to see how time management and lesson planning were modeled in practice.

Active Learning

A major component of early childhood education is active learning, which engages children in their learning process through movement, use of gross and fine motor skills, and meaningful experiences.[11] According to Vygotsky, learning occurs through activity, experiences, and relationships. Furthermore, zone of proximal development states that learning is achieved through exchanges between a student and more knowledgeable other through techniques such as scaffolding.[12] Before implementing any inclusive strategies, the instructor sought to build rapport with the class through inquiry, which consisted of getting student feedback on their learning process. With these concepts, the instructor used the students' feedback to create course structures that implemented a minimum of one active learning activity. These activities served multiple purposes: first, they helped students maintain their focus during long classes; second, they responded to student feedback regarding lengthy lectures; and third, they modeled examples of how instructional practice can be adapted to early childhood classrooms. Although lectures were still part of the course, they were shortened, and the active learning activities aligned more with course content. This helped the students see more clearly how to teach different early childhood concepts in different content areas. Each course had a weekly active learning segment and scaffolding occurred through subsequent discussions of the active learning activities and chapter readings.

Ungrading

The inclusive strategies were implemented by conflating student feedback and instructional goals. The instructor took the students' suggestions, combined them with the instructional goals, and created a class agenda that was implemented in class every week, while also reserving the right, as instructor, to make changes. Next, consideration was given to the nuances of teaching specific courses that address sensitive topics such as race and gender. Given these topics and other contextual factors such as students' comfort level, an ungraded approach was adopted to facilitate course discussions.[13] Student goals and needs were also considered, especially as they prepared to seek employment after graduation.

Service-Based Learning

Another component to effective coursework is meaningful work. When planned and implemented strategically, service-learning courses can provide meaningful learning experiences for both students and communities.[14] Recognizing the need for applied work, a course layout was designed to incorporate service-based learning. In this course, students applied their learning content through applied work. While learning, students were able to get experience in a service-learning activity with a local community-based center. Students were grouped according to different roles, with each group assigned certain responsibilities that were connected to the project. This course project, in turn, was a community-based project that students could list on their resumes in addition to the course being listed on their transcript.

Flipped Classroom

Another strategy implemented in the courses was a flipped classroom approach. This method consists of taking instructional methods that are traditionally applied in class and applying them outside of class, and applying methods that are traditionally applied outside of class and applying them during class time.[15] Traditionally, students in the program are instructed to read their textbook chapters on their own, submit assignments based on the readings, and come to class prepared to discuss them. In this approach, however, students read the textbook in class and answered instructional questions based

on what they read. This also provided extra support to students in understanding the readings. For example, if a student found a reading unclear in any way, the instructor was on hand to provide support immediately, rather than a student not understanding at home and having to wait a week to gain some clarity.

In addition to in-class support, students were offered outside experiences to understand the learning content and maximize their learning experiences. Some experiences were optional, while others were held during class time. In the social studies course, an example of social studies instruction is field trips, so the class made multiple field trips and external visits. This approach is important because preservice early childhood educators will be expected to apply these concepts in their future work. To design meaningful educational experiences for young learners, students must first experience meaningful learning.

CONCLUSION

From an instructional perspective, results from the use of these inclusive teaching strategies include the following. First, including student autonomy in the course design was an effective strategy. More specifically, it showed that students' perspectives concerning their learning processes were not only considered but also taken seriously. This inclusion of student feedback was a strategy that valued student voice and, in turn, provided them an opportunity to be heard. Second, in the more challenging courses, the same strategies became more difficult to manage. One possible reason is the increasing level of responsibility incurred as students advance through the program. Reminders were instrumental in solidifying the understanding that instructional decisions were made, in part, based on the information provided to the instructor. Third, the flipped teaching approach was one of the most effective methods during implementation. More specifically, reading the textbook in class was effective. This could be due to several factors, including having a structured space for reading and not conflicting with other responsibilities outside the classroom. After this approach was introduced, students requested that it be implemented in subsequent courses in the following school year. Fourth, while the most rigorous work was still challenging, it also showed an increased understanding of the learning content.

Going Forward

In reflection, the goal is to expand teaching strategies by continuing to build on what was learned. The first step is to continue reviewing student and instructor feedback. Second, the instructor will continue revising and applying the strategies to other groups of students. Third, the instructor will create additional strategies to help students understand the instructional perspective on assignments, increasing clarity on coursework and the use of inclusive teaching strategies. Lastly, it is hoped that this reflection raises awareness of inclusive teaching pedagogies and continues to find ways to include and advocate for student voices in teaching practices.

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CLASSROOM LEARNING COMMUNITY: ANALYSIS OF STUDENTS' SELF-REPORTED EXPERIENCE

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INTRODUCTION

Groupwork, an integral part of course design in higher education nowadays, has been praised for its many benefits, including improving students' academic performance and social skills. A form of groupwork that has received particular attention in the last two decades is the Learning Community (LC), though extant literature has focused on it from a macro perspective. This paper aims to augment the limited literature at a micro level by closely looking into a course-centered LC approach that ran from 2021 to 2024. It addresses the following research question: How do students describe their course-centered Learning Community experience? The objective was to map out and analyze the gains and challenges, based on students' reflections on assignments and course-tailored evaluations.

The Learning Community

The definition of the Learning Community concept, which has received significant attention since the second half of the previous century, has evolved over time. A degree of consensus exists in the literature regarding what an LC is, namely, a group of people intentionally formed with the purpose of promoting and maximizing learning for each member.[1] Unlike other groups of students, the LC has both in-class and out-of-class components and encompasses both academic and social activities.[2] The LC discussed in this paper belongs to the Classroom LC category, specifically the *within-classroom LCs* subcategory, with four to six members per LC from the same classroom.[3]

Traditional groupwork has been criticized mainly because of its almost-exclusive focus on the product and the reward (e.g., a grade) that goes with it. In her analysis of a students' critique of groupwork in English universities, Kathryn Telling pointed out that the dominant consumerist thinking amongst students tended to push them to focus on the product to be delivered rather than on the process, and on the high mark they expected to achieve.[4] As a result, traditional groupwork does not stress social relationships as a central element,[5] which in a multicultural setting could lead to even more issues, including marginalization, social leafing and free riding.[6]

Interdependence

The LC approach is primarily a cooperative learning method, the success of which depends largely on the degree of members' interdependence. For the LC approach to bear fruit, the design phase must take a number of requirements into account. Johnson et al. outlined five such requirements, the first of which is *positive interdependence*, whereby all members' goals are positively aligned, so each member believes that their success will be achieved only if all members succeed. The second is *individual accountability*, an in-group mechanism ensuring that on the one hand each member carries out their task, and on the other hand each member is responsible for helping others when needed.[7] *Promotive interaction*, the third requirement, ensures that group members are keen to discuss and promote one another's ideas and to build on them wherever and whenever possible.[8] The fourth requirement, *social skills*, concerns relationships amongst members, organizational and leadership matters, as well as conflict management. Finally, *group processing* introduces a process-monitoring element on the teacher's part who must check whether the LC is functioning properly,[9] and whether all members are participating effectively and equally.[10]

Cognitive diversity

Literature on group and teamwork has identified cognitive style diversity as an important driver of fruitful, creative and innovative thinking. Cognitive style refers to persistent psychological patterns indicating how people "acquire, organize and process information".[11] In other words, in a classroom setting, each student encodes and decodes information differently. Some students pay more attention and are able to recall certain aspects and details better than others.

Multiple ways of categorizing cognitive styles can be identified in the literature. For instance, some scholars distinguish between 'verbalizers' whose cognitive activities rely on verbal cues and whose thinking use analytical strategies, and 'visualizers' who need imagery to perform cognitive tasks and whose thinking is based on a holistic approach.[12] Other scholars have designed systematic instruments that enable individuals to identify their own predominant cognitive style. One such instrument is the Cognitive Style Index (CSI) which classifies individuals on a spectrum stretching from 'intuition' to 'analysis'. Between the two extremes are three types, notably the quasi-intuitive type who tends towards the intuitive extreme, the adaptive type who strikes a balance between the two extremes, and the quasi-analytic type who tends towards the analytic extreme.[13]

The foregoing implies that a randomly formed LC will probably result in a cognitively diverse mix of students, with inevitable downsides and upsides. Potential downsides include conflicts, miscommunications and misunderstandings that could turn the entire group situation into an unpleasant experience.[14] Reversely, the most cited benefits of cognitive diversity on groupwork include increased creativity, access to more knowledge/skills,[15] acquisition and development of social skills and increased self-esteem.[16]

METHODOLOGY
The Editorial Board LC

The LC approach was implemented in a Journalism class starting in September 2021 at Erasmus University Rotterdam. The initial idea was to address the issue of low student engagement I had observed in previous years, and which was partly put down to ineffective groupwork. The course was an elective that attracted 20–25 second and third-year students from various countries and programs, including exchange students, and was assessed based on individual (70%) and group (30%) assignments. Using a list randomizer, I formed the LCs, each with 4 or 5 members. Students were required to discuss two of their three individual assignments – i.e., a news story and an interview story

– within the 'Editorial Board', and to report in class on the editorial discussions so that they could receive further feedback from the class and from me. They were also required to write a reflection at the end of each assignment, explaining how they processed the LC feedback. Chairing of the Editorial Board changed every week.

As group assignments, the LC had to write a feature story taking a global outlook, (i.e., a cross-national approach), and compile a 10-minute presentation on media diplomacy. The LC involved three main activities: Weekly out-of-class Editorial Board meetings, weekly in-class LC reporting, and the plenary feedback from other classmates and the lecturer.

Data collection and analysis

To obtain insight into how students experienced the LC throughout the 8-week term, I conducted a qualitative content analysis of students' evaluations and reflections over a four-year period (2021–2024). I designed an LC-tailored evaluation with both quantitative and qualitative questions. All students completed this (anonymously) in week 8, in class, on paper, and in my absence. The analysis presented in this paper is based partly on students' answers to 4 open-ended questions about [1] the LC's effectiveness, [2] benefits gained from their LC work, [3] what they missed because of their LC work, and [4] any tips they may have for improving next year's LC experience. The analysis is also based on students' reflections (anonymized) on feedback received within the LC and how they processed this. In total I coded 81 course evaluations and 197 reflections using Atlas.ti.

The analysis itself drew on extant theory, focusing on four thematic categories. Evaluation comments and reflections were coded under 'positive interdependence' when a student acknowledged contribution, support or help from LC members. 'Individual accountability' was when a student referred to how LC members ensured that everyone was doing what was expected of them. 'Social skills' were evident from instances in which students referred to interpersonal relationships. The fourth category, 'cognitive diversity', was added to capture students' experience in relation to different styles, attitudes and perspectives within the LC.

RESULTS
Positive interdependence

The analysis shows that students experienced the LC as a space for exchanging feedback on assignments. Examples of feedback include helping members to choose a topic/approach, or improve content or form-related issues. One evaluation comment reads:

Feedback from LC members helped me and gave me new insights. They suggested a new direction for writing my articles, ideas to add to my articles, and digging deeper into my opinions.

A similar pattern is apparent from students' reflections acknowledging LC members' "feedback on proofreading and involvement in choosing the right topic". Some feedback was so profound that the receiver chose to abandon their initial idea. Reflecting on how her interview story developed, one student wrote:

… After deciding to focus on the influence activists seen as 'heroic' in Ghana have on local queer lives, my teammates suggested alternatively an examination of the Bill's personal effects. I therefore decided to reconduct my interview last-minute, focusing solely on my interviewee's feelings and experience.

In some instances, students acted on the feedback ("tried my best to modify my paper to adapt to the requirements"). Others pondered the feedback and rejected it partially or entirely.

Apart from feedback, deep learning took place during editorial discussions, as students reported gaining greater clarification and understanding of what was discussed in class in relation to

assignments. One student reported the following LC benefits in her evaluation: "Greatly contributed to a more extensive understanding of the content…". Another wrote: "LC is a good idea. It helps our understanding of concepts, and discussions augment our knowledge".

Finally, students reported how the LC boosted their self-confidence, enabling them to overcome fears and doubts and work confidently on their ideas. One student described benefitting from the LC thus: "Teamwork always makes assignments less intimidating". Some students reported being stuck in their brainstorming process or in their choices and relying on their LC teammates to confidently decide how to move forward.

Exchange students, being in a new educational system, benefited most. One wrote:

As an exchange student from Spain, a major obstacle I faced while preparing for the interview was formed by my own topic-based prejudices and biases. I needed to overcome my cultural background, and benefited most from my LC teammates' attitude towards matters…

Individual accountability

Students reported many instances in which the LC increased their commitment to completing individual and collective tasks. Above all, the LC helped them keep on track with assignments. One comment reads: "It [the LC] provided us with advice and kept us aware of what we're supposed to do". Another credited it for "help[ing] to keep on track with the course". Another confession, frequently mentioned in evaluations: the LC prevented a last-minute attitude towards assignments:

The LC helped me keep up with everything. When not working with a group, I tend to do a lot of last-minute work. The weekly LC meetings indirectly forced me to work on the assignments, effectively keeping me engaged.

The latter comment leads to the next important finding, namely that students reported greater engagement with the subject matter due to participation in LC activities. One student wrote: "Overall, having LC teammates motivated me to work harder and write a better story". Another commented: "Generally, the LC meetings really kept me engaged and helped clarify any doubts or questions I had … I was very lucky with my group, as everyone participated". This is an interesting comment as it refers to the notion of luck, suggesting that other students might have found themselves in less 'lucky' positions.

Social skills

The evaluations, by providing a holistic perception of the LC, show that the LC was 'fun' for the students, i.e., a pleasant and rewarding environment. In the 'tips for improvement', one student wrote: "No tips. A great experience. I wish more courses worked this way, providing a better, more joyful learning environment". Furthermore, as the following comment shows, students came to realize that though fun facilitates learning, they have a price, namely, hard work: "I enjoyed having LC teammates, … I also enjoyed the assignments. It was, however, a lot of work".

Furthermore, the LC demonstrably helped many students to make friends. Speaking about the LC's most important benefit, one student wrote: "I made a good friend. It also improved my self-awareness and courage". One student regretted the lack of "interaction with other classmates, but I liked my group so I didn't mind so much→our group bonded even more". The arrow, taken from the original, indicates that in-LC bonding resulted from interactions being focused rather than scattered over the whole classroom. Interestingly, some comments see making friends and having fun as two sides of the same coin:

My group was punctual, engaging and we had a great time cooperating on the assignments. If anything, the group smoothed the process of making friends. The LC group was great.

The dominant skill apparent from the analysis of reflections, which took a task-specific approach to social skills, is collective decision-making. Students reported examining various options together before collectively deciding on the way forward. Reflecting on how the LC feature story developed, one LC wrote: "The first substantial editorial decision we made was regarding the angle… After much discussion, we decided that the topic of banning cars from European city centres could be interesting…".

'Listening' and 'patience' were mentioned in only a couple of evaluations. However, if critical deliberations and collective decisions dominate their reflections, this is because LC members listened to one another's ideas and were patient enough to consider their merits. One student wrote: "My patience and ability to explain myself were trained". Another wrote: "Learnt how to listen to someone's advice – I am stubborn and like doing tasks alone".

Cognitive diversity

Students reported benefitting from different insights and perspectives from LC teammates. One student wrote: "Things were pointed out that I never considered, and relying on one another and the weekly presentations helped me to keep pace". Other students reported enjoying the complementary nature of the discussions, where each brought their own contribution to the collective task, as reflected in this comment: "Everyone picked up on different details, hence, the final products/papers were well put together, like a puzzle". This comment calls to mind the verbalizer-visualizer discussion: LC members had different cognitive styles, enabling them to see different details, resulting in a well-put-together final product.

Interestingly, students associated various opinions and interpretations with improved performance on their individual tasks. One student wrote: "I heard other opinions on my assignment ideas, which helped me to improve my paper, resulting in better grades".

Students also mentioned creativity, pointing out that the mixture of perspectives within the LC resulted in a more out-of-the-box mindset. One student indicated that the LC augmented her learning experience and provided a creative and collaborative environment.

The second important aspect of cognitive diversity touches upon what one could call "catching up on missed elements", i.e., being reminded of an important instruction/requirement discussed in class. Several reflections revealed how students were reminded that their initial drafts ignored assignment requirements which were either in the syllabus or had been discussed in class. One student wrote:

After looking over one another's drafts, one of my LC mates mentioned how my news story was not following the journalistic style in terms of structure. I was missing quotations and the lay-out was still academic instead of journalistic.

Some reflections show that class discussions continued during LC-meetings, but now with each LC-member providing their own interpretation of what was said in class. One student indicated having missed a fundamental requirement of the news story assignment as he had written an analysis piece instead. The LC rectified this: "… my LC group believed that my news story should be about one recent event and not an analysis piece… So I decided to choose a different topic …". One can imagine the relief felt by this student and others upon similarly discovering their error and thinking about the probable consequences. One evaluation comment in particular captures the overall sentiment: "It was stimulating and also a way to learn from others and recap information I may have lost. It's been funny and really productive. I will suggest this type of activity".

CONCLUSION

This paper investigated what students say about their course-centered Learning Community experience. The findings show how students benefited from positive interdependence, by providing feedback, deepening and extending their knowledge and boosting their self-confidence. The students acquired a sense of individual accountability after participating in LC activities, as demonstrated by their increased engagement and a more responsible mindset. Clearly the LC experience was also pleasurable, whereby fun facilitated not only learning but also friendship amongst members. Furthermore, the LC challenged them, by requiring a critical deliberation of different ideas before arriving at a collective decision. Finally, this research found that students benefited from the different cognitive styles present in their LC, thus enhancing their assignments by filling any gaps that could arise if limited to their own learning styles.

Despite shedding light on the LC's functioning at a micro level, the scope of this research is nonetheless limited. It focused on a single practically-oriented course involving students who were strangers to one another before joining the course. Further research could consider multiple courses, including non-electives and more theoretically-oriented courses.

NOTES

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[3] Lenning and Ebbers, 44.

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[5] Telling, 755.

[6] W. Martin Davies, "Groupwork as a form of assessment: common problems and recommended solutions," *Higher Education* 58, (2009): 567–568, doi 10.1007/s10734-009-9216-y.

[7] David W. Johnson et al. "Cooperative learning: Improving university instruction by basing practice on validated theory," *Journal on Excellence in College Teaching* 25, no. 3 and 4 (2014): 93–94.

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[10] Scager et al. "Collaborative Learning", 2 and 6.

[11] Ishani Aggarwal et al. "The Impact of Cognitive Style Diversity on Implicit Learning in Teams," *Frontiers in Psychology* 10, no. 112 (2019): 2, doi: 10.3389/fpsyg.2019.00112. See also Ishani Aggarwal et al. "The Benefits of Cognitive Style Versatility for Collaborative Work," *Journal of Applied Psychology* 108, no. 4 (2023): 647, doi.org/10.1037/apl0001035; Maria Kozhevnikov, "Cognitive Styles in the Context of Modern Psychology: Toward an Integrated Framework of Cognitive Style," *Psychological Bulletin* 133, no. 3 (2007): 464, doi: 10.1037/0033-2909.133.3.464; Christopher Allinson and John Hayes, *The Cognitive Style Index: Technical Manual and User Guide* (Pearson Education, 2012), 2.

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[15] Daan van Knippenberg and Michaéla C. Schippers, "Work Group Diversity," *The Annual Review of Psychology* 58 (2007): 518, doi:10.1146/annurev.psych.58.110405.085546; see also Aggarwal et al. "The Impact of Cognitive Style"; Rocca Roberta and Tylen Kristian, "Cognitive diversity promotes collective creativity: an agent-based simulation," in *Proceedings of the 44th Annual Conference of the Cognitive Science Society* 44, no. 44, ed. J. Culbertson et al. (2022).

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DEFINING PEDAGOGICAL INNOVATION IN K-12 EDUCATION

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INTRODUCTION

The disconnect between the experience students have in K-12 classrooms and the experience required to be an engaged, civic-minded participant in today's society is a growing concern for educators and researchers. Despite decades of discourse, research, and teaching on 21st-century learning, there remains ambiguity around the pedagogies and instructional strategies that effectively foster the durable skills necessary for meaningful participation in society. This research aims to address this fundamental issue by exploring the pedagogical innovations required to bridge this gap within K-12 environments, and perhaps more significantly, the process by which teachers arrive with confidence at pedagogical innovation.

While the concept of pedagogical innovation has been explored in higher education, its application in K-12 settings remains underdeveloped. Walder's seminal study on pedagogical innovation in higher education identified seven distinct notions—novelty, change, techno-pedagogy, reflection, improvement, application, and human relations—that provide a framework for understanding and implementing innovative teaching practices.[1] However, a decade later, research in this domain continues to be centered on postsecondary education, leaving a critical gap in understanding how these dimensions of innovation manifest in K-12 instructional planning and learning environments.

This study aims to extend the existing framework to K-12 classrooms, investigating how teachers conceptualize pedagogical innovation and whether the model can be utilized to meet the evolving needs of students. Our research seeks to answer three key questions:

1. What is the teachers' conception of pedagogical innovation?
2. Can this model be used to enact pedagogical objectives that are responsive to students' needs today that are linked both to the student and the discipline or the technology that aims to improve quality?
3. And perhaps most importantly, how can we empower teachers to embrace a new model of innovation and creativity in their teaching practices?

By addressing these questions, this study contributes to the literature base by offering a framework that bridges the theoretical and practical aspects of pedagogical innovation in K-12 settings. This study aims to provide insights that will inform district policy, professional development, and classroom practices, ultimately fostering a learning environment that is more aligned with the demands of the modern world.

HISTORICAL CONTEXT

The pursuit of innovative practices in education is not a new phenomenon. Throughout the 20th century, various pedagogical approaches and technological advancements have been touted as transformative. Cuban highlights early examples like the progressive education movement of the early 1900s, which emphasized student-centered learning and experiential education, challenging the traditional, teacher-centric model.[2] This era saw the rise of project-based learning and a focus on developing critical thinking skills. However, Cuban argues that many of these "innovations" were often implemented superficially or faced resistance from entrenched educational structures, leading to limited long-term impact. This pattern of initial enthusiasm followed by limited sustained implementation has been a recurring theme across the history of educational innovation. The mid-20th century witnessed another surge in innovation driven by societal shifts, including the post-Sputnik era focus on science and technology education. This period saw increased investment in educational research and development, but again, many promising innovations failed to achieve widespread and lasting change.[3]

CURRENT UNDERSTANDING

Defining "innovation" in the context of education is complex. It encompasses a wide range of changes, from incremental adjustments to existing practices to radical departures from traditional methods. In an OECD working paper, Looney provides a helpful framework for understanding pedagogical innovation, defining it as student-centered and constructivist, with a focus on lifelong learning and cross-curricular connections.[4] This definition moves beyond simply adopting new technologies and emphasizes deeper changes in teaching and learning approaches. Walder, focusing on higher education, adds another layer of complexity, emphasizing a shift away from traditional didactic instruction. This perspective underscores the crucial role of the teacher as a creative and reflective practitioner in the innovation process.[5]

Ammar et al. emphasize the need for innovative teaching practices to address dynamic changes in education and ensure that K-12 students can achieve learning outcomes aligned with the transforming technological world. Their work, focused on STEM education, highlights the importance of nurturing an innovation mindset in students through specific pedagogical approaches and curriculum designs.[6] This focus on student innovation complements the work on teacher innovation, suggesting that both are essential for creating a truly innovative educational ecosystem.

Several key topics are currently shaping the field of innovation in education. One prominent area of focus is on the factors that influence teacher adoption of educational innovations. A 2015 article explores the risks and visions associated with teacher adoption of innovation, highlighting the importance of understanding teacher propensity for embracing novelty. Nadelson and Seifert delve into the specific behaviors associated with teachers who successfully implement educational innovations, seeking to understand why some teachers are more likely to adopt new practices. These studies emphasize the need to consider the individual teacher's perspective, including their beliefs, motivations, and access to support, when designing and implementing innovation initiatives.[7] This view is complemented by the framework utilized in the current study, which articulates human relations and links to internal teacher perceptions about themselves and their practices.

Another key research area explores the relationship between assessment and innovation. Looney raises the critical question of whether high-stakes testing undermines educational innovation, arguing that it often does. The pressure to achieve high scores on standardized tests can discourage teachers from experimenting with new pedagogical approaches, particularly those that are not easily measured by traditional assessments.[8] Newmann and colleagues provide evidence for the effectiveness of

constructivist approaches, demonstrating that students in classrooms featuring "disciplined inquiry" often outperform students in more traditional classrooms, suggesting that innovative pedagogies can indeed lead to improved learning outcomes.[9] Indeed, within the current framework, the definition of improvement extends beyond assessment to include such general terms as "a positive outcome" and "introducing positive change."

The integration of digital technologies in education is another significant area of research. Omarova et al. discuss the design and implementation of pedagogical innovations based on digital technologies, highlighting the potential of technology to transform teaching and learning. However, it is important to note that simply adopting new technologies does not guarantee innovation.[10] The key lies in how these technologies are integrated into the curriculum and used to support deeper learning and student engagement. In the framework relied upon for purposes of this study, there is a clear distinction in the notion of "techno-pedagogy": stating clearly that an innovation can only be pedagogical if the thinking that created it is pedagogical.[11] Therefore, a technological innovation is not synonymous with a pedagogical one.

Collectively, these studies provide a foundation for understanding pedagogical innovation but also highlight significant gaps. While research has explored many of these concepts in isolation, or solely in consideration of how they impact student achievement, the focus on the teacher's process and integration of pedagogical practices that are innovative and significant is less studied. Furthermore, while innovative teaching is often recognized at the individual level, it remains undervalued within academic culture at large. This paradox underscores the need for a more structured approach to fostering and sustaining pedagogical innovation in both K-12 and higher education. The current study seeks to bridge this gap by adapting Walder's existing framework to primary and secondary education, examining both teacher conceptions of innovation and the practical strategies needed to implement sustainable change in teaching practices.

METHODOLOGY

The current study employed a deductive, latent approach to qualitative data collection and analysis. The foundational framework is aligned with an existing framework (Figure 1) and further informed by existing theory in the field of pedagogical innovation. The latent approach allows the researchers to interpret the underlying subtext and meanings of participants' words, rather than focusing solely on the explicit content of their statements.

Figure 1. Walder's pedagogical innovation model (2014)

The authors utilized semi-structured interviews adapted from the original study (Table 1), with adjustments made for a K-12 setting. The interviews incorporated a mix of planned and unplanned questions, allowing participants to share their thoughts in an open-ended manner while still ensuring that key topics were addressed. This flexibility permitted the authors to follow up on responses with clarifying questions, ask for elaborations, and explore unexpected themes that arose during the interview.

For this data analysis, the authors employed thematic analysis, a widely used qualitative analytic method. The thematic analysis involved the following steps:

- Familiarization with the data
- Generating initial codes
- Searching for themes
- Reviewing themes for alignment
- Defining and naming themes, cross-referencing previous research
- Fitting the model to the existing framework

Interview Outline	
1.	Who I am, who they are, sign active consent letter Opening: interviewing teachers on classroom practices and pedagogical innovation. By design, not defining it as we want to better understand how you conceptualize.
2.	State that they are known as an innovative educator be reputation and previous work together When did you start to think of yourself as an innovator in your classroom? How did it happen? In what context? Alone or in collaboration?
3.	Key question: What value do you see in innovating in your classroom? Inquire as to the value the participant sees in innovation (intention): Probing questions: ● What is the purpose of innovating? ● What were the influences to innovate (external/internal; positive or negative)? ● Were there inducements / opportunities / motivations to innovate?
4.	Think of an example of pedagogical innovation, When was it, what did it look like The remaining questions will be about this experience:
5.	Key question (open ended): Tell me about the process? Probing: pedagogical framework, if any, informed this work? (theory / training / knowledge) its extend, support, departmental, institutional or external, the implementation process, the responses of colleagues, students and the institution, its evaluation)
6.	Where did the idea for the innovation come from? ● Continuation ● Adaptation ● Extension/adoption
7.	Was there interest in the innovation? Admin Colleagues Others
8.	Let's take a few minutes to reflect on this process. What was (were) the: ● adequacy of the support, ● opposition and obstacles, ● roles of committees and colleagues, ● did it survive, died, become embedded, change
9.	Implications for: individual, grade level, school, funding/grant or district
10.	The personal outcomes as an innovator (Are there any? Positive and negative outcomes); and Thanks.

Table 1. Interview Outline

RESULTS & ANALYSIS

The sample for this study consisted of a convenience sample, drawn from a group of previously known educators within an accessible school district. Total sample size for this study was seven. The district is located in New York state and enrolls just under 1,000 students. The school district qualifies for Title 1 funding. Participants taught a range of subjects and range of age groups from preschool to high school, including classes that include general education, special education, and English language learners.

The thematic analysis of seven interviews was conducted in order to deduce coding categories that could then be compared against a pre-existing framework that articulated seven distinct notions of pedagogical innovation: novelty, change, techno-pedagogy, reflection, improvement, application, and human relations.

The data analysis revealed significant alignment to these key themes with subtle shifts present that researchers hypothesized are related to the differences in educational setting (that is, K-12 versus higher education). Analyses of these interviews also revealed an additional notion not presented in the existing framework, that of Teacher Qualities. This additional posited theme is also presented below.

Theme aligned to framework	Definition
Novelty	Something arising for the first time, surprising students, contrary to the norm
Change	Changing and adapting to the present, having a trend-setter/leader attitude, temporary
Techno-pedagogy	Technology is not necessarily innovation unless there is pedagogical thinking behind the use
Reflection	Reflection, continuous testing, introspection and creativity
Improvement	Making something better, more understood, a positive outcome
Application	PI is a process, linked to the discipline and the specific audience, constructivist process, using tools
Human Relations	Linked to personality
Teacher Qualities*	New notion present in K-12 educator interview; teachers' self-concept was a defining factor in embodying pedagogical innovation, teachers defining themselves with specific qualities

Table 2. List of Notions and Definitions

Each of the notions in the existing framework were also coded in the current set of interviews, confirming our hypothesis that this framework is likewise applicable in a K-12 setting. In each case, we found aligning evidence that supported the existence of the seven notions of pedagogical innovation in K-12 classrooms. While there was no significant divergence from the existing model, there exist subtle shifts in focus that we attribute to the unique needs of K-12 students versus a higher education environment which tends to emphasize mastery in discipline over holistic student development.

First, the participants emphasized self-perception and personality characteristics to a greater degree, linked to the notion of Human Relations. Personality characteristics scored the highest frequency counts when discussing pedagogical innovation. Another sub-theme that emerges strongly is teacher collaboration; participants describe the critical importance of collaborating with colleagues for their ability to innovate, emphasizing the significance of others in their own development as innovators.

Next, in defining Improvement, teachers focused on consideration of the whole child's experience, versus emphasizing achievement by an improved score or grade. Teachers tended to focus on the learning experience of a child and their overall development as a learner and engagement with the content, and did not identify improvement as being linked to grades or achievement.

Importantly, there was such heavy reliance of teachers on their self-perception as inextricable from their ability to innovate in teaching, that these descriptions emerged as their own new notion of Teacher Qualities, rather than it being a sub-notion under Human Relations. While linking pedagogical innovation to personal factors was a factor in higher education, it became a defining feature of our conversations with K-12 educators.

A number of limitations within this study are identified: first, the use of a convenience sample from a single school district facilitated pragmatic data collection but limits the generalizability of the results. Additionally, the small sample size further restricts the ability to draw broader conclusions. The semi-structured interview method, while offering flexibility and depth, also presents challenges. Variability in interview flow may reduce the comparability of responses across participants, potentially affecting validity. Moreover, the unstructured segments of the interviews introduce a risk of bias, as leading questions could inadvertently influence participants' responses. Future research should consider alternative sampling strategies, a larger sample size, and a variety of methods to enhance the reliability and applicability of findings.

DISCUSSION

When considering the first question initially presented, *what is the teachers' conception of pedagogical innovation?*, these interviews validate adherence to the framework, with the addition of an eighth notion. Teachers' largely describe the characteristics of pedagogical innovation in terms of: doing something surprising, new, and against the norm (novelty); being able to change and evolve in response to their students' needs (change); acknowledging that technology use has to be intentional (techno-pedagogy); being reflective, authentic, and responsive (reflection); making something better by soliciting feedback (improvement); aligning with their discipline and specific class (application); and acknowledging the importance of the interaction between themselves and their students (human relations).

We also identified a theme that emerged with such frequency as to necessitate an addition to the existing model. Where previously the link to a teacher's personality was considered a sub-theme of Human Relations, we propose to add the notion of K-12 Teacher Qualities as a notion in its own right. The addition of this notion is based on how the teachers repeatedly self-described as detectives, risk-takers, and responders. Teachers self-identified in very common ways: viewing innovation in the classroom as a byproduct of a risk-taking approach, commenting, "I always like to do things that are just a little bit different, that aren't of the norm all the time," or, "I'm not the type to get comfortable with what I do." Over and over, teachers described their personality traits as integral to their conception of their work. Furthermore, this intrinsic characteristic was grounded in a response to students' needs and interests coupled with strategically planning student-centered instruction to maximize engagement. This notion is in development and may be validated through continuing research.

As for the second inquiry, *Can this model be used to enact pedagogical objectives that are responsive to students' needs today that are linked both to the student and the discipline or the technology that aims to improve quality,* this preliminary research indicates that this model can indeed be used to advance the goals of pedagogical innovation. With the caveat of a small sample size, nearly all of the educators interviewed expressed their responsivity to the changing needs of their students, while maintaining a respect for and focus on the discipline. In fact, the pedagogical objectives appear to be framed this way; the ultimate goal is improving quality of delivery and learning of content. By way of a few examples, we recorded educators giving the following responses: "the way I approach any class is by first trying to figure out who my audience is," and, "I think of my work as what's going to work for these kids in this moment and year to year, month to month." Respondents added, "you want to always be doing the best that you can for your students…there's always different ways that they can learn material, and you want to engage them." In describing the utilization of technology to innovate to improve quality, respondents commented: "it's hard to think of one without the other," and "the tech was the tool that allowed you to have maybe a little more of what you wanted." Therefore, we would assert that this preliminary data indicates that the model can work in support of responsive pedagogical objectives.

The final question, *how can we empower teachers to embrace a new model of innovation and creativity in their teaching practices,* leads us directly to our next steps and future research. While these conversations are illuminating and, already it seems, empowering enough for one participant to engage in pedagogical innovation following the interview, it is our belief that further articulating the eight notions in a digestible way for educators will best support their steps towards pedagogical innovation. The creation of tools designed around this framework and these findings can serve as resources for guiding teachers through the notions and ensuring their confidence in applying them to their instructional practices, ultimately allowing teachers to feel confident to take strategic risks to apply pedagogies in innovative ways.

NOTES

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CRITICAL THINKING AS A CATALYST - TRANSFORMING FIRST-YEAR CHEMISTRY EDUCATION

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INTRODUCTION

A robust pedagogical framework aimed at fostering deep cognitive engagement is essential for the advancement of chemistry education. Critical thinking is a global cornerstone of contemporary educational systems.[1] It has become an essential pedagogical objective in 21st-century academia and is increasingly identified as a critical skill sought by employers. This paper defines critical thinking as *"purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based".*[2] The study investigated integrating critical thinking skills in first-year university chemistry modules. It was guided by the research question: *How are lecturers integrating critical thinking skills into their teaching to foster these skills in students?*

THEORETICAL FRAMEWORK

The theoretical foundation of this study is grounded in the Paul and Elder Critical Thinking Framework, which provides a robust and well-structured basis for understanding the core components of critical thinking and their intended outcomes. The Paul-Elder framework is composed of three key components: (1) the elements of thought or reasoning, (2) the intellectual standards that are applied to these elements, and (3) the intellectual traits cultivated in a critical thinker, which result from the consistent and disciplined application of these intellectual standards.
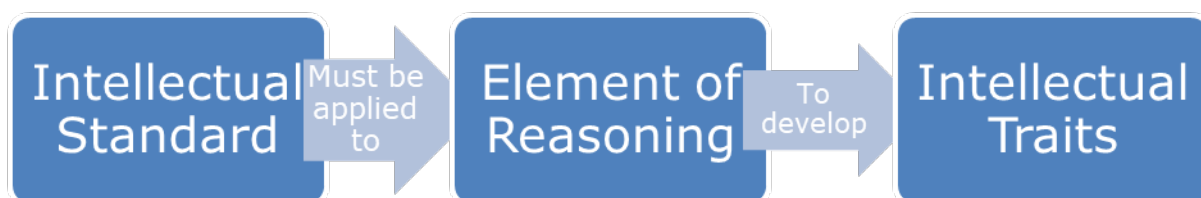

Figure 3 Paul and Elder Critical Thinking Framework

AMPS | California State University Los Angeles, USA | Universidad de los Andes, Chile | Universitas Katolik Parahyangan, Indonesia

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METHODS

This empirical study employed a descriptive case study approach using semi-structured interviews suited to research where variables such as critical thinking cannot be manipulated or controlled within real-world educational settings.[3] The chemistry department at Oceania University comprised nine lecturers responsible for teaching CHEM01 (Foundation Chemistry I) and CHEM02 (Foundation Chemistry II), with first-year cohorts of approximately 420 and 320 students, respectively. Eight of the nine lecturers volunteered to participate, and their involvement formed the basis for nested case studies within this research. The decision to focus on first-year students addresses a gap in the literature, as there is limited research on critical thinking development within first-year chemistry programmes within the region.

RESULTS

As outlined in Table 1, eight lecturers participated in this study. This paper focuses on a particular dimension of a more extensive investigation: *How are lecturers integrating critical thinking skills into their teaching to foster these skills in students?* This data provided a deeper understanding of the varying methods and extent to which critical thinking is embedded in their teaching practices, highlighting both the potential and the limitations of current integration efforts.

Name	Qualifications	Years of Teaching	Module	Age
Siji	B.Sc. (Hons), Ph.D. & PG cert	20	Foundational Chemistry II	40
Blake	BSc (Hons) & PhD	31	Foundational Chemistry I	58
Grant	BSc (Hons) & PhD	22	Foundational Chemistry I	52
Julia	BSc & MSc	35	Foundational Chemistry II	-
Idris	B.Sc. & Ph.D.	35	Foundational Chemistry II	67
Allen	B.Sc., MA & Ph.D.	30	Foundational Chemistry II	-
Destiny	B.Sc. & Ph.D.	6	Foundational Chemistry I	36
Pedro	B.Sc. & Ph.D.	20	Foundational Chemistry I	-

Table 1. Participants Information

Insights from Julia

Julia characterised critical thinking as *"Looking at some information and using your knowledge or doing some research to see whether it's actually true or not. And not just taking it at face value."* She emphasised the significance of critical thinking in enhancing student learning in chemistry at the university level, stating, *"Absolutely critical thinking will help student learning in chemistry, but it's very hard to get the students to think critically about the material."* Julia firmly believes in the value of fostering critical thinking and, as a result, opts not to lecture traditionally; instead, she focuses on asking questions. Julia explained, *"I don't like it, I won't use PowerPoint at first year, I think it's a presentation medium, not a teaching medium, maybe further up it's okay. Kids, they don't pay attention, they slope off."*

Insights from Blake

Blake emphasised the importance of critical thinking in university-level chemistry education, defining it as the capacity to engage in analytical reasoning. He further described critical thinking by reporting that: *"Critical thinking to me is to be able to think critically, to be able to bring the knowledge that you have, not just of that particular subject but common sense and precedents, and use those to*

analyse a particular situation, and come to some sort of view that you think is sensible. Critical thinking is actually to be able to recognise that you can't do it, and saying, no I can't make sense of this, and have to go and find out more about it."

Blake emphasised the role of intellectual honesty in this process, allowing individuals to challenge preconceived notions and engage in discussions with peers. He posits that critical thinking skills can be cultivated implicitly through exposure rather than through direct instruction. He stated, *"As an undergraduate, right through being a graduate student, it's implicit in everything I do. I haven't had any formal training saying, we're going to teach you about critical thinking. In a sense, I'm not convinced that teaching people about critical thinking helps. Well, it might make them more aware of it, but I think that critical thinking comes about because of your exposure, and Universities are where students take advantage of it. They are great places to learn about critical thinking."*

Insights from Grant

Grant stresses the pivotal role of critical thinking in comprehending chemical concepts. He related his definition to how a group of chemists reacted with their feelings when he was Chair of the Polymer Division in IUPAC. *"No one turned up for the IUPAC conference that year when terrorists bombed Istanbul Airport".* He expressed, *"That worries me a lot that you know, scientists who are meant to be the people who are best equipped to using critical thinking, just in this situation, were incapable of it."*

Furthermore, Grant critiques academic institutions for failing to cultivate students' critical thinking skills. He posits that the pedagogical methodologies employed can significantly influence the development of these skills. As he remarked, *"to be honest, do we do much to develop critical thinking in our students, probably not? I think that if you present your lectures in a way that shows critical, logical thinking, I guess you hope that that rubs off on the students. But you know, honestly, when there's one person and you may be, in principle we're teaching four hundred and fifty, it's just not possible."* Grant asserts, *"True critical thinking almost has to be imparted on a one-to-one basis."*

Grant elaborates on the detrimental effects of increasing class sizes in universities, claiming that this trend inherently undermines the teaching of critical thinking. He notes, *"This move in universities towards large classes and, it is by very definition a move away from imparting critical thinking, and yet if you read what universities say, they'll always say, we're teaching our students how to think critically. And then at the same time there's nothing, underneath all that is like, we want to have larger classes because it's cheaper."*

Interestingly, Grant mentions his lack of formal training in critical thinking within his university environment over two decades, despite this, he reported that critical thinking competency is fundamental to securing positions as lecturers, commenting, *"But on the other hand, you know, I think you could argue that for most of us, we wouldn't be getting appointed as lecturers unless we had a reasonably well-developed ability to think critically."*

Insights from Siji

Siji highlights the crucial role of critical thinking, defining it as the process of questioning the evidence presented. She reported, *"Critical thinking, it's all about questioning the evidence that's put in front of you. So, rather than just sitting through a seminar or something and just blindly accepting what you're being told, asking yourself well okay, does that make sense? And this is a mantra that we actually have in Chemistry, full stop. Whenever we're doing our demonstrator training, whenever*

we're in labs, whenever we're doing anything, we always tell the students and the staff as well just to stop, and ask yourself, and does this make sense."

Siji observes that students' capacity for critical thinking—and the impact of their education in CHEM02—depends significantly on their willingness to engage fully with the learning process. She believes that students must actively work to enhance their critical thinking abilities. Additionally, Siji stresses the importance of helping students understand and interpret the content being taught, which she believes enables them to address their unique learning needs.

Insights from Idris

During the interview, Idris emphasised the paramount role of critical thinking in teaching, learning, and research within higher education. He stated, *"I come to work every day because I love teaching. And I love my research. My research is critical thinking. The Tertiary Education Commission in the Act says the teaching at tertiary level must be underpinned by research. And the reason it must is that there is the element of critical thinking that's got to go into tertiary kids."* Idris stressed the necessity for scientists to engage in critical analysis.

He observed that many science students tend to accept information at face value, suggesting that students are rendered less competent chemists without the ability to interrogate the material. Idris reported: *"they are less able chemists."* He actively encouraged his students to evaluate what he taught, asserting critically, *"I said I made the whole lot up, it was complete crap. You know, you've got to think more, you've got to think about what things mean. You've got to be critical. I might get it wrong."* With palpable enthusiasm, Idris reiterated the significance of critical thinking in university chemistry education, stating, *"Oh, good God yes! I come to work every day, because I love teaching. And I love my research. My research is critical thinking. The Tertiary Education Commission in the Act it actually says the teaching at tertiary level must be underpinned by research. And the reason it must is because that is the element of critical thinking that's got to go into tertiary kids. So yes, yes, yes."*

Insights from Allen

Allen held a nuanced view of the significance of critical thinking in university chemistry education. He argued that it was not a requisite for obtaining a chemistry degree, so he would not prioritise critical thinking in his teaching approach. Allen reported certain limitations in integrating critical thinking into chemistry instruction, expressing concern that an excessive focus could overwhelm students. He pointed out the challenge of balancing the necessary course content required and the goal of actively engaging students in critical thinking. He remarked, *"It's compromised you know, there's a limit to what you can aspire to in them because it is an introductory course. There is this tension between essentially formulaic buildings of skills as opposed to critical thinking and so it is hard to maintain."*

Furthermore, Allen described critical thinking as a form of analytical thinking, defining it as the capacity to develop skills that enable an individual to tackle problems that might otherwise remain unresolved. He stated, *"Critical thinking is strongly related to a combination of analytical thinking, rigorous thinking, slow, deliberative thinking, comparative thinking, all those kinds of things which are not as opposed to instinctive reactions."*

Insights from Destiny

Destiny reported that *"Part of critical thinking, I would say, is the ability to assess information and see whether it makes sense, whether it fits into a logical way of viewing the world—I guess the ability to formulate a mathematical problem from a written statement or a written question, the ability to assess whether information makes sense. So, there are two examples of what critical thinking is or how you might apply critical thinking. Critical thinking, in general, it is about understanding and integrating information and being able to use it appropriately. I would also say critical thinking is about; I do a lot of teaching the mathematical skills that are required in chemistry because I am a theoretical chemist, and I think maths is so important."*

Destiny supports a critical-thinking framework in higher education chemistry, recognising its value in creating an enriched learning environment: *"I think it's totally possible that they are able to fulfil the learning objectives without any critical thinking at all. I wouldn't define critical thinking in terms of the learning objectives. The ability to assess the information that's given to you, to look at a problem and be able to answer it based on understanding, not just based on pattern recognition."*

Destiny further asserts that critical thinking skills should ideally be cultivated only after students have developed a foundational understanding of scientific theories and models. She explains, *"It is totally possible to get a hundred per cent in the CHEM01 exam without actually applying any critical thinking. I do not think the students passing the exams or fulfilling the learning objectives is necessarily critical thinking. I think if they do pass the exam based on an understanding of what they are doing, then that is critical thinking. But if they pass the exam based on just memorising an approach and then just applying that multiple times then I think that is not critical thinking."*

Insights from Pedro

Pedro strongly believes in the importance of critical thinking in chemistry education and emphasises the need for students to develop understanding rather than rely on memorisation. He acknowledges, however, the challenge of embedding critical thinking across all topics essential for training competent scientists. He explains, *"We are conscious of the fact that we need them to know, have them as critical thinkers, and have them approach doing things, not just memorising but doing, and understanding."*

Pedro further characterises critical thinking as *"looking at what information you've been given and just trying to critically pull it apart. It's all self-consistent and not just being accepting but wanting to be analytical of a statement that may have been made."* Pedro had a fascinating perception of critical thinking; he believed scientists could create things from imagination. He encouraged his students to be critical thinkers. He stated: *"Scientists tend to be creative and I use the old Willy Wonker analogy you know, do you know Roald Dahl and his children's books, you know, Charlie and the Chocolate Factory and I say scientists are like Willy Wonker, they're creative, they dream, and they make beautiful things from just their imagination. That's what we do at work."*

Pedro integrates critical thinking into discussions of gas laws by connecting abstract concepts to relatable real-world scenarios, such as the temperature dynamics on ski fields. He encourages students to move beyond memorising relationships to applying concepts practically, saying, *"Take an abstract concept from your lectures, apply it to the real world and suddenly now you can critically think about it as opposed to, that's just a relationship that I have to remember."*

DISCUSSION

This study addressed the research question, *"How are lecturers integrating critical thinking skills into their teaching to foster these skills in students?"* It found unanimous recognition among the eight interviewed lecturers of the essential role critical thinking plays in first-year chemistry instruction. Siji and Destiny highlighted how they incorporated critical thinking into their pedagogical philosophies to support student learning; however, neither elaborated on specific demonstrations of these principles in their teaching practices. Analysis of the interviews revealed the absence of a cohesive critical thinking framework for teaching CHEM01 and CHEM02 at Oceania University. While no participant opposed adopting such a framework, the lack of its formal implementation remains evident.

Pedro and Julia distinguished themselves as the lecturers who articulated and demonstrated the integration of critical thinking within their chemistry modules. Pedro provided concrete examples of how his understanding of critical thinking was translated into specific teaching practices, enabling students to relate problems to real-life situations. This approach exemplifies aspects of the 'intellectual standards' component within the Paul-Elder Critical Thinking framework, thereby informing and enhancing the 'elements of reasoning' dimension.

Similarly, like Julia, Idris emphasised an approach that encouraged students to ask questions. However, Julia went further by detailing how she employed this strategy by posing questions to her students, prompting them to critically reflect on and interrogate the material presented during both instructional sessions and laboratory work. In contrast, the other five lecturers shared their interpretations of critical thinking and unanimously highlighted its importance in chemistry education, yet they did not demonstrate how these insights influenced their instructional methods.

Destiny and Allen proposed that critical thinking skills develop implicitly over time, with Allen asserting that students acquire such skills naturally through exposure. This paper asserts that reliance on implicit learning alone is insufficient to cultivate robust critical thinking skills. Instead, these skills necessitate deliberate and explicit integration into the chemistry curriculum as demonstrated in the Paul-Elder Critical Thinking framework. Thus, Destiny and Allen's perspectives reflect a limited approach that may hinder comprehensive skill development for first-year university students.

Participants also identified various obstacles to implementing a critical thinking framework and described its complexity. Pedro highlighted the need to balance content delivery with the integration of critical thinking, while Destiny cited constraints such as time, workload, a lack of teaching assistants, and insufficient resources. Allen emphasised the risk of overwhelming students, and Grant reiterated that large class sizes represent a formidable barrier to integrating a standardised approach to critical thinking in chemistry instruction.

CONCLUSION

To address the research question posed in this study—*How are lecturers integrating critical thinking skills into their teaching to foster these skills in students?*—the findings revealed a disparate and inconsistent approach among lecturers in integrating critical thinking into their pedagogy, a skill crucial for student development in a first-year chemistry course. These results align with the observations of,[4] highlighting that the integration of critical thinking within the first-year chemistry curriculum lacks uniformity and coherence. This inconsistency is exacerbated by the absence of a structured framework for implementing critical thinking strategies, resulting in varying degrees of integration among lecturers. To overcome these challenges, the study advocates for developing and adopting a practical, comprehensive framework that systematically addresses the concerns raised by lecturers.

NOTES

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THE COMMUNITY AS CLASSROOM: CROSS-DISCIPLINARY ENGAGED LEARNING

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INTRODUCTION

Students ask more of the learning process now; our words must be supported by actions. Experiential learning opportunities provide a framework upon which we can build the contemporary educational process. While a course is traditionally developed in a top-down manner by outlining topics and then inserting projects, should we first find the project, then discover the lessons? This paper will explain this approach by applying the theories of engaged learning and their application through a recent case study, demonstrating an intentional shift to a bottom-up approach.

Rewriting the Pedagogical Approach

Developing an architectural design project for students is fundamentally a programming exercise. In William Pena and Steven Parshall's *Problem Seeking*, they outline the Five Steps for effective Programming.[1] Through establishing goals, collecting and analyzing facts, uncovering and testing concepts, determining needs, and stating the problem, designers can effectively program in an intentional manner.[2] In a community project, it is necessary to consider broader goals. While one might consider simply flipping the order of this process, we consider the broader needs and opportunities of working with the community. This effectively brings step four, determining needs, into the process earlier.

Rewriting the pedagogical approach to a bottom-up process can more directly support needs-based community engagement, while providing rich experiential learning opportunities. In John Dewey's early theories of experiential learning, the social environment provides the most successful context for learning, connecting classroom knowledge to real-world situations. In his 1938 text *Experience and Education*, he describes the critical impact of direct experience and focused reflection.[3] He states: "Education is not preparation for life: education is life itself."[4] Students must experience these real-world interactions, as they are foundational to their learning process.

Experience in Education

Dewey's main ideas support community engaged project-based learning. He highlights learning through experiences and interactions with the world in three key ways: learning by doing, social experience in a real-life context, and cooperation through group work.[5] Through his example of learning in action at the time, boys in Washington D.C.'s Armstrong Technical High School built

model planes for the United States Navy. His key points were considered in our work, and paved the way for success in our initial planning for how students might benefit from these endeavors. Beyond the scope of this project, the work of John Dewey would continue to influence educational theorists for decades, and his work inspired movements such as the Montessori method.[6]

Relational Aspects of Learning

Particularly as designers, it is critical for students to gain a perspective on how design problems are interrelated with relational aspects of community.[7] Dewey's ideas about group work, cooperation, and the importance of social learning highlight this.[8] Decades later, in 2011, The National Institutes of Health developed an updated study and recommendations to share the health-related aspects of community interaction titled "Principles of Community Engagement".[9]

The Social-Ecological Model outlined by the NIH frames how the individual relates to the various levels of communities from one-to-one relationships, all the way to broader society.[10] Students need to understand the dynamics of groups in order to build trust, respect, and to effectively collaborate. By thinking about themselves and their place with this larger framework, it positions them to consider alternative perspectives and to take a broader view of a problem.

Establishing Relationships

Community support must be the driver of this process. By reaching out to a broad number of stakeholders, listening, building trust, and creating a strategy for building coalitions, students can begin to gain insight into these dynamics by engaging with communities beyond the classroom. For this case study, these aspects were critical to student learning and project success.
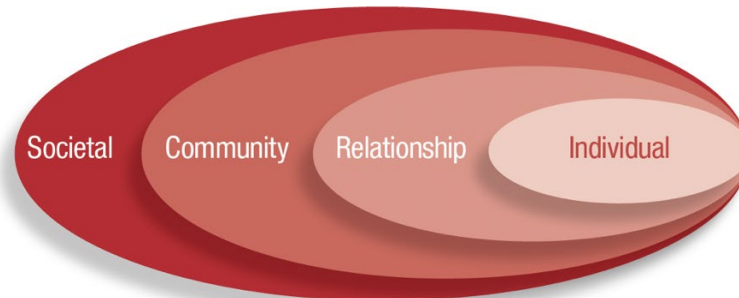
Figure 1. The Social-Ecological Model, by National Institutes of Health

APPLICATION: WASHINGTON SCHOOL

These theories were applied through a community-based project that provided several learning opportunities. Through listening and identifying needs, and through the initiative of OSU History Professor Dr. Laura Arata, a conversation was begun with alumni of the Booker T. Washington School in Stillwater, Oklahoma. There had been a complicated relationship between the city and the school for some time, but that began to improve as conversations developed. The city looked for ways to rectify the sale of the school to a private developer, and OSU faculty began to investigate ways to bring students into the conversation.

Over a four-year period, university students from six disciplines participated in collaborations for engaged learning with this significant community project.[11] The bottom-up pedagogical strategy allowed for impactful impromptu learning in multiple spheres: historic, social, creative, and

pragmatic. Through direct experience, reflection, and application, students learned creative problem-solving while realizing the impact of contributing to their community.

History: A Story Untold

The Booker T. Washington School, completed in 1938, served the local African American population until integration in 1956, while simultaneously serving as a community gathering space for the segregated black community.[12] The goal of saving this site became the inspiration for a series of cross-disciplinary community engagement opportunities. Within the context of greater Stillwater, the Washington School is situated with a mile of the OSU Campus, directly south on Knoblock Street. In scale, it is a fraction of the size of OSU but had wide-ranging impact for its community.

The community surrounding Washington School was known as 'the Ville'.[13] Black residences and businesses were restricted to the area south of 9th Street between Adams and Duck Street. A range of black businesses, churches, and a park defined the area around the school. Reflecting devastating redlining practices common throughout the U.S., this area was located in the least-desirable area of town known as 'the Bottoms'. Situated in the flood plain surrounding Stillwater Creek, it has been inundated with water numerous times.

Following the landmark Brown v. Board of Education decision in 1954, Stillwater integrated its high school system in 1956.[14] The Washington School building was later used as office space for the town's Head Start Program, and later as transitional housing, until it was closed entirely in 2007. The building has remained vacant since that time, and after being sold for a token sum to legally transfer the deed, it belonged to a private investor. The City reacquired the property in 2023 via a private donor, and work is underway to preserve the original structure.[15]

Figure 2. The Booker T. Washington School, 1940s

Washington School Today

Today, Washington School still stands along 12th Street, an enduring testament to the resilience of this community. In its abandoned state, it bears the evidence of years of neglect and vandalism. The original structure was added onto over the years to accommodate various functions. For example, the auditorium was added in the 1970s and became a place for community gatherings.

While the final graduating class of 1956 closed an era for the school, its memory lives on in alumni and their descendants, who share their memories of the community. A member of the community,

Mrs. Sanders, recalled the many black businesses and homes that populated this area when she was a child. Creating an impromptu map, she shared her recollections and stories of the community.

While many residents of Stillwater were previously unaware of the school's history and impact, the story of Washington School is now being told. OSU faculty and students have joined the effort to share the history of the school. Three student projects and a series of community interactions support this narrative of community engaged learning.

COMMUNITY ENGAGED LEARNING: WASHINGTON SCHOOL

Beginning in 2021, a number of faculty began to be involved in the project and to identify critical needs. First, it was deemed essential to determine the safety of the structure and its potential for rehabilitation on multiple fronts. A collaboration between History and Civil Engineering students was initiated to begin investigations and site visits.

Flooding and Structural Assessments

OSU Civil Engineering faculty worked with students to conduct a structural assessment of the building. This project was a collaboration between History and Civil Engineering that initiated important discussions about the project and became a fully engaged learning opportunity for students. Students toured the facility, analyzing structural and material integrity and worked with the History department and community members to prepare their report.

OSU Civil Engineering Flood Studies were also conducted by another team of students. The team's objective was to report the current conditions of the land area and propose flood mitigation solutions to make the land area usable and to reduce future flooding of the former Washington School. Civil students worked with the History department to uncover historical data on the site. A 1942 study was uncovered by Dr. Arata, which was conducted by former Sociology Professor J.F. Page.[16] The study uncovered shocking images of the flooded community, including citizens rowing boats to reach their flooded homes.

The extent of the watershed that contributed to the flooding of 'the Ville' was profound. Referencing historic data and photographs, along with the technical flood zone maps of the area, students conducted analyses and calculations in order to propose viable solutions to the building's water problems. Through conversations with stakeholders, it was determined that various options could be explored that removed portions of the building additions that occurred over time. This was an important first step in initiating input from the community and implementing that into hypothetical solutions.

Figure 3. Flooding at Washington School, 1957 and 2019

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Multidisciplinary Engaged Learning

These initial efforts began important conversations and established relationships with community stakeholders. In 2022, OSU engaged with an expanded multidisciplinary effort. This second project built upon relationships with the community and among faculty and students. Because the initial studies had uncovered the potential to save the structure, but also environmental challenges, a collaborative effort to study the hypothetical adaptation of the school and to study its environmental footprint was initiated.

The Solar Decathlon, sponsored by the US Department of Energy, is a competition of ten contests.[17] As we looked for engagement opportunities for our students, the Washington School's needs - to bring attention to its circumstance and history – worked well in concert with introducing students to an adaptive reuse model. The fundamental environmental learning focus of the Decathlon supported the collaboration of multiple disciplines at OSU: History, Architecture, Mechanical Engineering, Interior Design, and Construction Management.

The project began with students learning about the existing building and its history. Over a series of evening meetings, students and faculty from the disciplines became acquainted and shared their perspectives. Students and faculty were able to work with Washington School community members in the process. Mrs. Karen Washington, an alumna of the school, provided oral history and responded to the project progress.

Over the course of a year, the project and the team developed a close working relationship. Students gained a real-world perspective on a historically significant project and directly engaged with the community members impacted. After studying the existing school and the needs of the broader community, it was determined that the proposal would adapt the Washington School to an arts magnet school for the community.

The proposal respected and preserved the original structure and provided an educational space to tell the story of Washington School. The expansion addressed a real need identified in the community: a 5th and 6th grade arts magnet school to provide an arts-focused educational option for Stillwater. The project's focus on the historic preservation and adaptive reuse of the facility allowed for strong analysis opportunities and integrative studies for addressing existing buildings. Because of the more technical aspects of the competition, mechanical engineers worked closely with the architecture students to refine the schematic design and development of the form and building skin.

Ultimately, the community engagement aspects drove both the initial concepts and the final design development touches. Students also designed a sculpture park to integrate original bricks from the demolished portions of the site to honor the alumni's wishes for a tribute to the struggles for the school to be recognized. For the community, bricks represented broken promises that needed to be mended.

While the team did not place in the competition, they were awarded the Solar Decathlon Director's Award, recognizing one outstanding project that captured the judges' attention. Washington School was recognized on the national stage, bringing attention to this historic place, no longer abandoned and forgotten.

Figure 4. Student proposal and meeting for OSU Solar Decathlon team

Adaptation: Historical Layers

In the spring of 2023, another cross-disciplinary opportunity emerged between History and Architecture to create a series of student design proposals for the Washington School. Through conversations with Washington School alumni, it was determined that the primary goal was for the school to once again impact the community. Members didn't have a strong preference as to the function of the building but stipulated that it should also tell the history of the site. A third-year architecture studio focused on educational projects began a collaboration with History to creatively consider the preservation and adaptation of the site.

As students visited the site, they were confronted with the history of abuse of the place. Evidence of vandalism and decay were present throughout the building. Student noted the importance of the visit in understanding this history, but even more importantly in learning the story and the significance of the school's alumni and the community that the school served. Student proposals built upon the historical and site research to propose hypothetical adaptive reuse design proposals that thoughtfully told the story of the school through creative layering. Students strived to respect the existing structure while providing a historical space and new educational function.

Beyond the Project

While these three projects have demonstrated the learning capacity embedded in taking a community-engaged approach, students have also gained much from the volunteer opportunities and celebrations of the school. Two community clean-up days have been conducted to bring broader participation and to engage the larger Stillwater community in the efforts to save the school. Washington School alumni, students, faculty, and other community members worked to clear the original structure of debris and to dismantle a series of crumbling additions to the original building. Students worked side by side with community members and descendants of alumni of the school. Mrs. Birdie Neal's mother attended the school, and she shared stories with our students as they worked together to clean bricks from the demolished portions of the building.

Finally, in spring 2024, a fundraiser gala was held to honor the four surviving members of the 1954 men's state championship Washington School basketball team. Their story was an important piece of the Washington School narrative, and students and faculty attended the gala to meet more alumni and community members.

After the Washington School Heritage Foundation was formed that year, it began conducting site investigations and conceptual programming, while working to secure grants and raise funds for the preservation of the school. Faculty are currently preparing a nomination to the National Register of Historic Places. Through community, faculty and student interactions, Washington School has

become a symbol of positive change and the catalyst for many rewarding community events aimed at saving the historic school.

Figure 5. Project Development Re-envisioned for Community Engagement

CONCLUSION

The primary lesson for students and faculty has been of the power of collective action, and the impact of multidisciplinary teamwork. We are better together, and in complimentary action. Through a series of projects and developing community relationships, the larger community of Stillwater has become involved in the project and begun contributing to the efforts to preserve this school and its critical history.

Secondly, as faculty we were able to deduce an evolved approach to project development. As we evaluated our lessons learned from the process of engaging Washington School, a hybrid version of the model of *Problem Seeking* emerged. First, identify learning intentions, then identify community projects and their needs. After collecting and analyzing facts, we can establish meaningful goals. While we must have an educational intention, the projects we discover unfold the rest. We listen to *their* needs, we collect and analyze the facts, and only then can we establish the objectives. Through this revised model, we will continue to seek meaningful engagement opportunities for our students in support of impactful learning. Often the outcomes are beyond what we expect, and the students are enriched through the process.

NOTES

[1] William Pena and Steven A. Parshall, *Problem Seeking: An Architecture Programming Primer* (New York: Wiley, 2001), 14.

[2] Pena, *Problem Seeking*, 15.

[3] John Dewey, *Experience and Education* (New York: Collier Books, 1938), 4.

[4] Dewey, *Experience*, 5.

[5] Dewey, 6.

[6] Morgan K. Williams, "John Dewey in the Twenty-first Century," *Journal of Inquiry and Action in Education* 9, no. 1 (2017): 92.

[7] Mark A. Graham, "Art, Ecology, and Art Education: Locating Art Education in a Critical Place-based Pedagogy," *Studies in Art Education* 48, no. 4 (2007): 376.

[8] Dewey, 32.

[9] National Institutes of Health, *Principles of Community Engagement*, (Washington, DC: NIH, 2011) 20.

[10] National Institutes of Health, *Principles*, 21.

[11] Jessica Marshall, "A Dream and Hope: OSU Students Focus on Washington School Restoration," Stillwater News Press, Feb. 28, 2024, accessed Dec. 19, 2024, https://www.stwnewspress.com/news/schools/a-dream-and-hope-osu-students-focus-on-washington-school-restoration/article_367b7b1a-d683-11ee-b80d-3f1588c9f6ef.html

[12] "Booker T. Washington School," Stillwater History Museum, Stillwater Museum Association, accessed March 4, 2025, https://www.stillwaterokhistory.org/washington-school-3

[13] J.F. Page, *A Study of Certain Aspects of Negro Life in Stillwater* (Stillwater: Oklahoma A&M College, 1944), 11.

[14] "Booker T. Washington School"

[15] Kiersten, Shaun, "Stillwater City Council gives nod to start plans for the Washington School," Stillwater News Press, September 12, 2024, accessed March 5, 2025, https://www.stwnewspress.com/news/stillwater-city-council-gives-nod-to-start-plans-for-the-washington-school/article_2ec8b9ac-6fb0-11ef-94cf-7b2cdd9e65bf.html.

[16] Page, *A Study, 12.*

[17] "Participate in the Design Challenge," U.S. Department of Energy Solar Decathlon, accessed March 1, 2025. https://www.solardecathlon.gov/about/design/2025

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TEMPORALITY NOW! DECOLONIALITY-PRIORITY IN THE PEDAGOGICAL TIME-SPACE

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INTRODUCTION

Curriculum decolonisation has gradually come into academic focus, as a growing concern of academics and students across the world – as the role of academia and academics is debated. This paper is situated within this greater discussion and focuses on the epistemological concerns surrounding the spatiotemporal position of decolonial themes within module curricula. Drawing on current approaches to curriculum decolonisation, postcolonial literature, psychology, and political theory, this paper presents anecdotal evidence and outlines the importance of positioning decolonial themes earlier in the curriculum, *before* Eurocentric theories and subjects. Such temporal curriculum rearrangement can help resituate the centrality and importance of decolonial subjects, instigating pedagogical reconfigurations.

Curriculum Decolonization: The Debate

Universities have begun a process of directly and pro-actively confronting their own legacies of, and involvement with, colonialism.[1] Debates surround academia's direct responsibility in challenging the production of myopic, homogenised, bounded, and exclusionary forms of knowledge.[2] This is a difficult process, with no agreed form of practice. Yet, the contours of the process are gradually being built and decided upon. Decolonising pedagogy regards the creation of education systems that challenge the internalisation of Eurocentric culture as dangerous and colonial in nature.[3] Of note in these debates is Keele University's manifesto for curriculum decolonization, published in 2020. It defines the decolonization of the curriculum as the "decolonisation of the mind from the colonisers' ideas".[4] A key issue identified regards the focus on "white men" in the curriculum, which displace non-white writers – who "are often presented as offering a response to 'mainstream' (i.e. white) thought, rather than thinkers who themselves demand response".[5] This in turn, "compromises the quality of education" affecting particularly black and minority ethnic students, who "find themselves under-represented and under-stimulated by the content of their curricula, with their histories, narratives and experiences omitted from mainstream discourse".[6] The authors situate curriculum decolonisation as (1) the acknowledgement that knowledge does not have ownership; (2) the recognition of the power relations generated by knowledge – and therefore the privileged position of the global North; (3) and propose reframing and reconstructing the curriculum to make it more inclusive; (4) not simply by bringing in minority ethnic writers and texts, but also by (5) changing

how we "read traditional mainstream texts";[7] (5) challenging and rejecting the status quo; (6) and creating spaces and resources for staff-student dialogue.

Carving a Space for 'Time' in Decolonial Pedagogy

While Keele's manifesto is a highly coherent proposal for good pedagogic practice, it does not sufficiently consider the *temporality* of decolonial teaching. Many subjects taught these days include – whether superficially or not – an engagement with decolonial subjects, and critical, decolonial or postcolonial literature. Yet, mere inclusion of such topics alone is insufficient. The pedagogical time-space is affected by the forces of hegemony,[8] and its arrow of time inevitably generates epistemological orders. Without changing the arrow and the topology, no amount of decolonial inclusion in the curriculum will be sufficient. We propose that we require a temporal approach to decolonial teaching – one that factors in the signaling and authority that is connected to the *order* of topics within a curriculum. Our concern is that these topics come *too late*. They manifest too compartmentalised. Separated from the 'core' body of literature and knowledge, they constitute a 'periphery' situated and located hierarchically as secondary, or consequential.[9]

Decolonized pedagogy requires the development of an account of the epistemology and normative power of the spatiotemporal position of taught subjects and themes within the curriculum. This paper addresses this contingency, proposing that we need to consider the *temporality* of decolonial teaching – situating this claim within the contours of a political theorization of pedagogy.[10] By situating decolonial subjects, actors, discourses, and concerns first, the Eurocentric curriculum sequence can be de-hierarchised, and students can be encouraged to experience and recognise these sensitivities as primary to their learning journey – rather than as a footnote of negligible importance. We argue that engagement with decolonial subjects should precede temporally the exploration of Eurocentric concepts. Engagement with traditional and Eurocentric agendas must therefore *follow* decolonial teaching. Doing otherwise entails implying (or creating) a dominant order of debates – whereby core Eurocentric ideas occupy positions of authority and epistemic primacy. This has the effect of signaling to students what *is* the priority – especially within the context of a commodified higher education where most students are primarily concerned with grades and evaluation outcomes, than the intrinsic benefits of learning and knowing.

(DISRUPTING) THE IVORY TOWER

Earlier attempts to initiate discussion on curriculum decolonisation put focus on Eurocentrism as a derogatory term and sought to reframe its interpretation. For example, Nordenbo proposed that the curriculum needs to adopt the principles of "critical attitude", "curricular pluralism", and "of free discussion and human rights".[11] These earlier accounts of curriculum decolonisation focused on curriculum expansion and pluralisation as such, to increase the number of voices and perspectives – as well as the range of themes, subjects, and issues. More recent focus has additionally expanded upon epistemological considerations – including growing accounts of pedagogical 'hegemony', such as curriculum decolonization *qua* the questioning of knowledge-creation and knowledge-repetition. Based on the premise that knowledge systems are not only oppressive but also emancipatory,[12] Cross and Ndofirepi proposed the "epistemological emancipation of university education from the hegemony of western-imposed knowledge systems", decrying what they described as "a biased and skewed mainstream scholarship […] that coerces faculty and students to adhere to the paradigms that do not reflect their knowledge or experience of the world".[13]

The 'pedagogical' arrow of time

The use of the term 'temporality' in this paper refers specifically to the social ordering and controlling of pedagogic time. We draw upon Hassard's sociological account of how hegemonic discourse arranges time, as it exacts "precision, control and discipline".[14] In physics, the 'arrow of time' – always points "towards the future",[15] and designates time's one-way move from entropic order to disorder.[16] From a socio-historical perspective, however, members of a given social group experience time collectively, and indeed as "subjectively constituted and intersubjectively produced through social structures and patterns".[17] Social time is grounded in consociative processes – and creates both intersubjectivity, as well as "a sense of coordinated lifetimes in the vivid present of daily interaction".[18] Pedagogy, however, owing to its systematic nature, deprioritises intersubjective creation in favour of systematisation and schematisation. Its temporality is *skewed*, in the sense that it simultaneously describes a precision of subjects and themes, while locating those subjects and themes within a given sequence in the curriculum. In this analysis, we will deploy a *pedagogical* arrow of time which will represent the literal order of subjects: its leftmost point represents subjects of earlier precedence, and its rightmost point designates subjects explored later in the curriculum (Figure 1).

Earlier / GENERAL   *Later* / **Specific**

Figure 1. Pedagogical 'arrow of time'

We need to think of this process as the generation of *pedagogical hierarchy*. The pedagogical arrow of time moves always in this direction: from the 'General' to the 'Specific' – wherein the 'General' or *universal* instance tends to be the representative Eurocentric example, or concept, or definition, or account, or theory. This process invariably takes place in the context of ordering subjects taught. Yet, it is not a neutral process, as it is much akin to the forms of narrative rhetoric constructed to support a specific hegemonic discourse: Every time, we seem to trace the tree from its trunk up to its leaves, narrating in pedagogical temporal order what the students certainly sense as an order of general importance to particular detail – constructing orders of epistemological hegemony. The presentation of material in certain temporal sequence influences the learning and recollection process. Indeed, research has shown that the human mind recalls information based on the sequence of its presentation.[19] In psychology, these biases are called the primacy and recency effect – where the former is based on long-term memory and consolidated recollection of the knowledge, and the latter is retrieved from short-term memory. Crucially, knowledge presented at the beginning of this arrow is stored in the long-term memory, consolidated and accessible for longer time.[20]

Further research has also shown that the first trait in a sequence has more impact on opinion formation than following characteristics, indicating a primacy effect in opinion building.[21] This would mean that what students learn in the beginning is more likely to impact opinion formed about the subject. The instructional design process is a series of decisions that directly relates to how we group and order content. If related topics are taught, the sequence matters even more and can be based on chronological, procedural or "order of performance",[22] or hierarchical principles where the preceding topic is considered a prerequisite to understand the sequence.[23] Placing western knowledge at the top of this hierarchy only reinforces the message that without mastering this information *first*, following information may *not* be fully understood. Hence, our decision vis-à-vis 'where' to place non-western knowledge in the learning experience reflects our own relationship with that knowledge. This is congruent with Mignolo's theory of the geopolitics of knowledge which asserts that all knowledge is

politically located – and that the *when*, *who* and *where* of knowledge generation should be challenged.[24] This pedagogic choice therefore has consequences that we need to heed as educators.

Towards a radical emancipatory counter-hegemonic pedagogy

As highlighted thus far, the pedagogic arrow of time has significant consequences, as it directly contributes to the generation of epistemological hegemony. We therefore require an account of the *politics* of pedagogy. In Gramscian thought, history is never neutral: It emerges within a hegemonic space, wherein "homogeneity entails conformism".[25] Gramsci associated pedagogy and education with the process of intellectual hegemonisation. Curriculum design is "a scholastic programme" that is embedded with the function of hegemony, and involves "the teachers, [and…] the university professors".[26] The past and the present tell the story of a unique form of entropy, wherein history is constructed or even fabricated as "a secondary and subordinate element of the political and ideological organization of small groups struggling for cultural and political hegemony".[27] Located within this schema, education as retelling of stories and narratives is part of the (re-)generation of such hegemonic rhetoric – contributing to conformism to a *particular* hegemonic account of the past and the present, and indeed of our social world. Crucially, this process also operates inversely, given that counter-hegemonic struggle "entails establishing a new civilization, destroying the old automatisms and creating new ones, and modifying the relationship between the occasional and the permanent".[28]

Time is therefore an inherently political component of pedagogy: It can become a counter-hegemonic instrument at the hands of educators who seek the detachment of education from its hegemonic alignment. This radical emancipatory potential can be understood through the political theory of Jacques Rancière. Rancière's book *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation* presented a heretical approach to pedagogy, critiquing the disciplinary, authoritarian, and evaluative components of higher education – aspects that maintain oppression and hierarchy within education.[29] For Rancière, educators often assume the position of master, always keeping "a piece of the student's ignorance" up their sleeve – forcing upon students the impression that 'knowledge' is only attained via verification and submission to the authority, mastery, and expertise of the teacher.[30] Rancièrian philosophy proposes that educators focus not on 'verification' of knowledge, but on intellectual emancipation – to instill upon their students the *presupposition* that "everyone is of equal intelligence".[31] This is a pedagogic guiding principle that is essential to any effort to decolonize the curriculum.

Disrupting and reconfiguring spatio-temporalities

Conditions of patterning and orderization have definitive implications and impacts – because repetitions of orders *generate* systems and structures. The pedagogue as disruptor can therefore become part of an emancipatory process. Another book by Rancière can help explain this aspect. In the *Proletarian Nights*, Rancière recounts the oral histories of workers during the early 19th century.[32] The book explores how workers run newspapers, journals and wrote worker-poetry during nighttime – performing tasks and occupying roles that did not *belong* to their 'proper' time-space. Within the capitalist spatio-temporal order workers must work during daytime and rest during nighttime, so that they can be most efficient with their labor at the factory. Workers being poets, being authors, being thinkers was *out of place*. It was also out of *time*, with implications upon our notions of order and expectation, since they were performing tasks and embodying identities and discourses which they were not expected to have the *time* for. Crucially, this performative disruption has distinct pedagogic repercussions:

"For the workers of the 1830s had never needed the secrets of domination explained to them, as their problem was quite a different one. It was to withdraw themselves, intellectually and materially, from the forms by which this domination imprinted on their bodies, and imposed on their actions, modes of perceptions, attitudes, and language".[33]

Learning 'takes' time, but we can think as well in terms of how *our* taking control *of* time is itself an epistemologically disruptive – and creative – act. Indeed, we can extract from this a Rancièrian account of temporality, which focuses on how "the new world […] is taking shape every day before our eyes and in our heads",[34] as we dynamically alter its contents through emancipatory acts of defying spatio-temporal orders and expectations. This short-circuiting therefore has re-configurative potential.[35] In a pedagogical and decolonizing context, we can begin to think of a pedagogic counter-hegemony that takes the form of a radical approach to how time is apportioned, accounted, and distributed within the curriculum, one that focuses on critiquing the concept of education as homogeneous progression.[36]

Within these accounts, between Gramsci and Rancière, we can generate the contours of a theory of temporality in pedagogy, which can in turn generate practical curriculum decolonisation. While teachers are not necessarily historians, we also traverse trodden paths and situate ourselves within forms of historiography and narrative-construction. The order in which the curriculum is arranged is not neutral but, as addressed in this section, of major consequence: Order vis-à-vis temporality *matters*. It can be the ground of a counter-hegemony of education; and it can spring forth emancipatory and re-configurative potential. We must therefore not only recognize these dynamics and patterns but also take control of them in our bid to undo prior pedagogical hegemonies.

(RE-MANIFESTING) CURRICULUM DECOLONISATION

The last part of this paper will present anecdotal and observational data, which we aspire to empirically test subsequently. Our claim is premised on an *observational hypothesis*, that most modules that engage with decoloniality position decolonized angles and subjects at a later time than dominant (or core) topics and theories. As educators, we have been teaching for several years and we have come across dozens of curricula and module handbooks, designed by academics from all parts of the world. What we have witnessed invariably is the typical structure of a module handbook where 'core' subjects (typically of a Eurocentric nature) are presented *first* within the curriculum. For example, in Security Studies, before one teaches the 'failed' state, one must teach Weber, and *the* definition of the state. Before one teaches critical theory, or feminism, or radical ecology, they must teach *the* central theories of IR – from realism to liberalism.

We have observed that students tend to engage more with the earlier content taught in our modules – even if they find themselves to be more interested in later topics. This has a variety of explanations which fall beyond the task of this paper,[37] and we have presented explanations through psychology. Continuing with this anecdotal account, in a module taught by one of us, which did not consider the temporality of curriculum decolonization, students were given the opportunity to write on a range of topics – representing every single weekly subject. Out of more than 200 students who were given the option to choose an essay subject, from a list of subjects covering the entire curriculum, only 1 to 2 percent of students chose to write on subjects such as critical theory, feminism, or anti-racism – when these subjects were taught during the last third of the course. Most students chose to write on the topics of the first few weeks, with the first three weekly subjects representing a significant part of the total assessments.

(Unsettling) the proper order and its derivatives

Why does this happen? To us, it is evident why: students, implicitly or not, understand that there is an importance to the order of topics. Higgs suggested that a curriculum is designed to convey "in a systematic and planned way" an "amalgam of knowledge and skills that are determined to be appropriate and necessary to society",[38] which entails inclusion and exclusion of knowledge and skills. Topics are taught from the more fundamental to the least important. Even if a module is designed to convey complexity – in the sense that later subjects *require* prior subjects – students are still more likely to interpret this sequence of topics, as a sequence of *primacy*: the first topic is more fundamental, and 'core'. The last topic is consequential, and 'derivative'. What is similar in this observation with Rancière's theory illustrated earlier is the way in which we associate the 'proper' within a spatiotemporal nexus: for it is not 'right'.[39] The exact same thing occurs to chosen subjects within a curriculum: the latter topic is in its assumed 'proper' position. Students can discern these sensibilities and have been conditioned to witness these subjects as mere reactions to the core of their education – as a supplement of little pedagogic or evaluative consequence.

But what happens when this spatiotemporal order is reconfigured? In a series of preliminary experiments we conducted, we came across a very interesting outcome which we believe can become key to rethinking curriculum decolonization. We performed an intervention at some of the institutions in which we have worked over the last year and a half. Having inherited a module in International Political Economy which considered decolonial literature and subjects, but which did not factor in for the spatial and temporal position of decolonial teaching, only a small change was made to the curriculum: Instead of starting with a discussion of general themes of International Political Economy, or an introduction to Liberal and Economic Nationalist positions, the first lecture was on the subject of inequality as a result of processes of human organisation across history. Students were asked whether they think inequality is natural, and whether the humans living during the last Ice Age were unequal. We introduced to them Babylon and the Persian Empire, the Transatlantic Slave Trade System, and the colonisation of Australia and Polynesia. For the second week, we explored the subject of colonial governance during the 20th century. In the fourth week, we addressed Dambisa Moyo's macroeconomic thesis on charity and aid regarding the African continent,[40] juxtaposing it with discussions of underdevelopment by Walter Rodney.[41] It was only in the second half of the module that attention turned to what would normally be constituted 'core' to the discipline of IPE. Excitingly, nearly 9 in 10 students wrote their assignments on subjects relating to decoloniality. The module was recognized for its excellence, and the University's Student Union awarded the teaching team with an Award for Engagement – and a nomination for Feedback & Development.[42] We believe this is not coincidental and are prepared to engage in further systematic experimentation to verify this observation.

CONCLUSION

There is little doubt that curriculum decolonization will continue to accelerate – as universities begin to disentangle themselves from centuries of colonial pedagogic practices. This paper situated itself within this greater process, and brought together ideas from postcolonial literature, psychology, and political theory, developing an account of how temporality ought to play a significant role in curriculum decolonization. The spatiotemporal arrangement of topics within the curriculum matters. We call this principle, the principle of *temporality now*! We urge our fellow academics to consider the importance of space and time in their teaching and approach to pedagogy. We wish to see whether our idea can gain traction, and whether it can be part of a series of interconnected strategies to manifest decolonization in universities, by unsettling the order of taught subjects, topics and theories. We are

keen to learn whether others have witnessed the same phenomena, whether they have come to the same observations as we have. This paper constitutes the beginning of an idea, and the start of a project that we wish to take forward, and to study further empirically and theoretically. It is also the beginning of a new dialogue: We welcome your questions, interventions, criticisms, and concerns, to help us crystallise these ideas into something more coherent and cohesive.[43]

NOTES

[1] See Carol Azumah Dennis, "Decolonising Education: A Pedagogic Intervention," in *Decolonising the University*, eds. G. K. Bhambra, D. Gebrial, and K. Nişancıoğlu (Pluto Press, 2018); Lesley Le Grange, "The Curriculum Case for Decolonisation," in *Decolonisation in Universities: The Politics of Knowledge*, ed. J. D. Jansen (Wits University Press, 2019); and Dalia Gebrial, "Rhodes Must Fall: Oxford and Movements for Change," in *Decolonising the University*, eds. G. K. Bhambra, D. Gebrial, and K. Nişancıoğlu (Pluto Press, 2018).

[2] An indicative – but not exhaustive – list, includes the works and contributions of Mbembe (see Achille Mbembe, "Curriculum Responsiveness: The Anatomy of a Concept", in *Decolonisation in Universities: The Politics of Knowledge*, ed. J. D. Jansen (Wits University Press, 2019)); Tlostanova and Walter (see Madina V. Tlostanova and Walter D. Mignolo, *Learning to Unlearn: Decolonial Reflections from Eurasia and the Americas* (The Ohio State University Press, 2012)); and Lockley (see Pat Lockley, "Open Initiatives for Decolonising the Curriculum", in *Decolonising the University*, eds. G. K. Bhambra, D. Gebrial, and K. Nişancıoğlu (Pluto Press, 2018)).

[3] Srinivasan, Ramani, "Decolonising Knowledge Systems", *Economic and Political Weekly*, 46:30 (2011), 17.

[4] Keele University, "Keele's Manifesto for Decolonising the Curriculum," *Journal of Global Faultlines*, 7:1 (2020): 108.

[5] Keele University, *Keele's Manifesto*, 109.

[6] Keele University, *Keele's Manifesto*.

[7] Keele University, *Keele's Manifesto*.

[8] We use this term in a Gramscian sense, to refer to the ways in which cultural hegemony is shaped and maintained via social norms and structures, and thus to justify a given socio-economic and political status quo (see Kalevi J. Holsti, *The Dividing Discipline: Hegemony and Diversity in International Theory* (Allen & Unwin, 1985).

[9] We take inspiration here from Prebisch's and Friedman's work in political economy – which ascribe to the working of global production systems certain colonial dynamics, such as an economically developed core and an underdeveloped periphery. In Prebisch, the core exploits the periphery by extracting resources and surplus value from it, while the periphery provides cheap workforce (see Raúl Prebisch, *The Economic Development of Latin America and Its Principal Problems* (United Nations Department of Economic Affairs, 1950). In Friedman, economic colonialism is expanded to additionally include the political and cultural fields (see John Friedman, *Regional Development Policy: A Case Study of Venezuela* (MIT Press, 1966); also see Magdalena Klimczuk-Kochańska and Andrzej Klimczuk, "Core-Periphery Model," in *The Palgrave Encyclopedia of Global Security Studies*, eds. S. N. Romaniuk, M. Thapa, and P. Marton (Palgrave Macmillan, 2019), 4. In our thinking, a modified core-periphery model is compatible as a framework for understanding teaching and research in academia, due to a similar form of upward and downward epistemological transfer of knowledge, research, and teaching. This paper does not expand on this aspect, but a subsequent publication will.

[10] The present paper is intended as the blueprint for the beginning of a discussion to generate an improved decolonised curriculum, rather than a fully formed idea. Our eventual aim is to refine and expand the present theoretical model outlined here, and to pursue empirical testing of what currently is derived from anecdotal data.

[11] Sven Erik, Nordenbo, "What Is Implied by a 'European Curriculum'? Issues of Eurocentrism, Rationality and Education," *Oxford Review of Education*, 21:1 (1995), 44-45.

[12] See Sabelo J. Ndlovu-Gatsheni, "The Emergence and Trajectories of Struggles for an 'African University': The Case of Unfinished Business of African Epistemic Decolonisation", *Kronos*, 43:1 (2017).

[13] Michael Cross and Amasa Ndofirepi, "Reconnecting the University to Society: The Role of Knowledge as Public Good in South African Higher Education", *Journal of Higher Education in Africa*, 14:1 (2016), 134. Such replication of Eurocentric methods and knowledge has been described variously – as "epistemological imperialism" (Sanya Osha, "Appraising Africa: Modernity, Decolonisation and Globalisation", in *Philosophy and African Development: Theory and Practice*, ed. L. Keita (CODESTRIA, 2011), 152); "epistemicide" (Mogobe Ramose, "I Doubt, Therefore African Philosophy Exists," *South African Journal of Philosophy*, 22:2 (2003)); "paradigmatic tyranny" (Majid Rahnema, "Science, Universities and Subjugated Knowledges", in *Knowledge Across Cultures: A Contribution among Civilisations*, eds. R. Hahoe, and J. Pan (University of Hong Kong, Comparative Education Research Centre, 2001)); or "epistemological authoritarianism" (Didier, N. Kaphagawani, "What is African Philosophy?" in *The African Philosophy Reader*, eds. P. H. Coetzee, and A. P. J. Roux (Routledge, 1998)).

[14] John Hassard, "Images of Time in Work and Organisation," in *Work and Society: A Reader*, ed. K. Grint, (Polity Press, 2000), 17.

[15] Arthur Stanley Eddington, *The Nature of the Physical World* (Cambridge University Press, 1929), 71.

[16] In physics, low entropy describes a highly ordered and structured system, whereas high entropy describes complete disorder, i.e. 'chaotic' randomness. Within a pedagogic frame, however, education is essentially inversing this arrow of time – as it seeks to impose order upon disorder, and to locate subjects within a knowable and controllable pattern.

[17] Catherine Bailey and Adrian Madden, "Time Reclaimed: Temporality and the Experience of Meaningful Work," *Work, Employment and Society*, 31:1 (2017), 5.

[18] Nancy D. Munn, "The Cultural Anthropology of Time: A Critical Essay", *Annual Review of Anthropology*, 21 (1992), 99. See also Georgina Born, "Making Time: Temporality, History, and the Cultural Object", *New Literary History*, 46 (2015), 363.

[19] Peter Dockrill, "'Time Cells' in Human Brain Encode The Flow of time, Study Finds", *Science Alert*, December 16, 2023, accessed 10 February 2025, https://www.sciencealert.com/time-cells-in-human-brain-encode-the-flow-of-time-study-finds.

[20] Murray Glanzer and Anita R. Cunitz, "Two Storage Mechanisms in Free Recall", *Journal of Verbal Learning and Verbal Behaviour*, 5:4 (1966).

[21] Jessica Sullivan, "The Primacy Effect in Impression Formation: Some Replications and Extensions", *Social Psychological and Personality Science*, 10:4 (2019).

[22] Sullivan, *The Primacy Effect*, 23.

[23] Charles M. Reigeluth, "Order, First Step to Mastery: An Introduction to Sequencing in Instructional Design", in *In Order to Learn: How the Sequence of Topics Influences Learning*, eds. F. E. Ritter, J. Nerb, E. Lehtinen, and T. O'Shea (Oxford Academic, 2010).

[24] Walter D. Mignolo, *The Darker Side of Western Modernity: Global Futures, Decolonial Options* (Duke University Press, 2011).

[25] Michele Filippini, *Using Gramsci: A New Approach* (Pluto Press, 2016), 118.

[26] Antonio Gramsci, *Prison Notebooks. Volume III*, ed. & trans. J. A. Buttigieg (Columbia University Press, 2007 [1975]), 103-104.

[27] Gramsci, *Prison Notebooks*, 71.

[28] Filippini, *Using Gramsci*, 107.

[29] Jacques Rancière, *The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation*, trans. K. Ross (Stanford University Press, 1991).

[30] Rancière, *The Ignorant Schoolmaster*, 21.

[31] Rancière, *The Ignorant Schoolmaster*, 101.

[32] Jacques Rancière, *Nights of Labor: The Workers Dream in Nineteenth Century France* (Verso, 2012).

[33] Rancière, *Nights of Labor*, ix.

[34] Rancière, *Nights of Labor*, 428.

[35] This idea links back to Rancière's general theoretical framework regarding how aesthetic and logical revolutions are premised on short-circuiting the social time-space (see Jacques Rancière, *Dis-agreement: Politics and Philosophy*, trans. J. Rose (University of Minnesota Press, 1995), 34, 52 & 57-59). This process of reconfiguration is instigated via an intersubjective politics of contestation, wherein sense-making is linked to normative and epistemological performativity.

[36] The process of ordering events (e.g., in history) to generate a 'meaningful' account of truth echoes Gramsci's account of epochs and hegemony. Unlike the physical arrow of time, which observes an entropy in the natural sense, the social and historicist arrow of time does not in fact account something in independence of the social world, but generates the conditions for understanding, learning, and experiencing the world. A similar idea is recounted by Benjamin (see Walter Benjamin, "Theses on the Concept of History", *Libcom*, 1947, accessed 10 February, 2025, https://libcom.org/article/theses-concept-history). Benjamin recounts that radical historiography must "stop telling the sequence of events like the beads of a rosary" (Ibid, Thesis XVIII). Deleuze and Guattari have similarly expressed that "discontinuity, rupture, and multiplicity" can undo systems and structures (see Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. B. Massumi (University of Minnesota Press, 1987), 16).

[37] Some of these alternative explanations are linked to engagement and attendance, but also to what students perceive they are being signaled by the lecturer. In this paper, we concern ourselves only with this latter aspect.

[38] Philip Higgs, "The African Renaissance and the Decolonisation of the Curriculum". In *Africanising the Curriculum: Indigenous Perspectives and Theories*, eds. V. Msila and M.T. Gumbo (Sun Press, 2016), 4.

[39] It is in this sense not in the 'right' place, and not in the 'right' time. But this dissonance can in the same sense be reconfigurative – as it unsettles the 'proper' pedagogical time-space. Similar proposals of how unsettling the 'proper' order of social time-space can result in political and societal reconfiguration(s) can be found in the works of Lefebvre (see Henri Lefebvre, *The Production of Space*, trans. D. Nicholson-Smith (Basil Blackwell, 1991)), and Viderman et al. (see Tihomir Viderman, Sabine Knierbein, Elina Kränzle, Sybille Frank, Nikolai Roskamm, Ed Wall, eds. *Unsettled Urban Space: Routines, Temporalities and Contestations* (Routledge, 2022)).

[40] Dambisa Moyo, *Dead Aid: Why Aid Is Not Working and How There Is Another Way for Africa* (Penguin Books, 2010).

[41] Walter Rodney, *How Europe Underdeveloped Africa* (Black Classic Press, 2011 [1972]).

[42] Aston Students' Union, "2024 Winners", accessed March 12, 2025, https://astonsu.com/voice/slta/.

[43] The authors would like to thank the contributions of the panel members and of the audience of the New Schools of Thought conference, who helped shape this paper. We also extend our gratitude to the members of the Centre for Political Thought at the University of Exeter, of which Dr Andreas Karoutas is a member, and whose probing questions have proved productive in refining the project. We extent our sincere thanks, specifically, to Dr Dario Castiglione, Dr Karen Scott, Prof Alex Prichard, Dr Jack Tagney, Dr Regenia Gagnier, and Dr Pam Patterson.

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MODULE OFFICE HOURS AS A SPACE FOR CRITICAL THINKING IN BUSINESS SCHOOL CONTEXT: POSTGRADUATE STUDENTS' PERCEPTIONS

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INTRODUCTION

Critical thinking development remains a challenge and priority for business schools in HE, yet specific pedagogical spaces remain underexplored in their potential to cultivate this must-have, employer-desired skill. This research examines one such space—lecturers' office hours—in the context of two large cohort postgraduate business school modules at two UK universities. (For simplicity's sake we refer to all teaching academics as lecturers).

LITERATURE REVIEW

Critical thinking is an academic ability that reinforces logical,[1] cognitive problem-solving and decision-making across disciplines.[2] It requires students to utilize cognitive skills[3] to think philosophically, understand, examine, and explain phenomena, then reach justifiable decisions.[4]

Critical Thinking in Business Schools

Critical thinking may enhance analytical thinking, a must-have skill that is sought-after by employers.[5] It encourages students to question phenomena, which may reveal discrepancies, gather evidence from reliable sources, and make proper decisions that solve real-world challenges.[6]

UK business schools place a robust emphasis on educating critical thinking through their curriculum design, pedagogical practices, and assessment methods, not least because of its links to employability. The UK HE Quality Code stresses that HE ought to co-create teaching and learning approaches proactively with students[7] and the 'Subject Benchmark Statement', stresses the importance of equipping students with analytical skills to appraise information to solve real-world scenarios, and nurture independent learning and intellectual curiosity.[8] Lecturers may embed classroom-based active learning strategies,[9] including problem-based learning[10] and Socratic questioning,[11] in real-world case studies and group activities.[12] These may include recognizing false information,[13] evaluating stakeholders' interests,[14] or developing moral understanding through reflection, so as to challenge immoral business practices.[15]

Spaces

Business schools may communicate with their students in diverse ways including emails and virtual learning environments, in addition to traditional engagement touchpoints, including lectures, seminars, and face-to-face meetings. In line with debunking the idea that younger generations are 'digital natives',[16] the latter may be the only channels[17] students feel comfortable[18] using to communicate with their lecturers.[19]

Office hours may allow lecturers to offer unstandardized time and space for students to have informal conversations that may resolve academic challenges.[20] There might be an assumption that lecturers may utilize office hours more[21] given that student outcomes may improve,[22] but not all lecturers may choose to offer office hours.[23] Office hour practices also vary between institutions. At Nottingham University Business School (NUBS), the contact information for all module teachers and details of office hours (face-to-face and/or online) should be communicated to students, but content and process is not prescribed. At Coventry University London Campus (CULC), there should be two-hour office hours on varied days and times each week (face-to-face and/or online). This lack of prescription is perhaps surprising in the current UK HE context.

Some lecturers may find conversations taking place during office hours can be more impactful[24] because face-to-face conversations are less task-oriented, which may quickly build trusted relationships[25] and encourage proactive student engagement.[26] While mapping Bloom's taxonomy[27] to office hours delivery may not be a common practice, this approach suggests a high academic potential to enrich students' critical thinking skills and learning experience and systematically encourage 'higher-order thinking'[28] because students may examine case studies further with lecturers in low-stress[29] psychologically and pedagogically safe space, one-on-one.[30]

With the development of space on and around campuses, academic offices may be increasingly dislocated from teaching spaces. Campuses that are spreading across the city, or breaking off into satellite spaces may be increasingly far from student living and social spaces, reducing the likelihood that students 'drop-in'. (Individual) academic offices may locate in third locations, or even disappear entirely.[31] Without physical office space, and the objects and books with which lecturers personalize it, items that may break the ice between students and academics[32] or even spark inspiration for asking critical questions, [33] is some essential quality of the academic's office hour lost?

Evolving Perceptions

With 63 per cent of postgraduate students aged 21 and over,[34] UK HE business schools continue to attract diverse cohorts from Baby Boomers, and Generations X, Y and Z. To enhance student engagement and outcomes in critical thinking, business schools may address learning preferences that arise from such generational diversity, e.g., Baby Boomers may prefer in-person conversations, Generation X may prefer blended delivery, Generation Y may prefer experiential learning opportunities, and Generation Z[35] may prefer personalized learning experiences.[36] Applied to office hours context, such learner characteristics may map to tailoring them: Baby Boomers and Generation X students may appreciate one-on-one in-person consultative conversations instead of using the space for participatory critical thinking, while Generation Y and Z students may perceive office hours as virtual informal learning spaces. Where Generation Y students may appreciate collaborative learning, those from Generation Z may prefer virtual conversations.[37] Here the development of chatbots for use in HE is of interest in its potential for complementing and facilitating (but not replacing) office hours. They are potentially solutions not just for overloaded lecturers (potentially creating more space for office hours), but also to address student overload and disconnection.[38]

Lecturers will also be aware of the inevitable changes in learning environments, models, learning focus, and students' cultural diversity in HE due to globalization. Globalization interconnects our global systems.[39] With exponential growth of utilization of artificial intelligence (AI), where these changes evolve outside of the HE system,[40] some lecturers may find it disruptive,[41] while others welcome the new opportunities change may bring.[42] HE, moving forward, may encourage students to learn in a global, hybrid, and blended model and involve themselves in 'immersive learning environments' that focus more on skills acquisition.[43] While neoliberalism may continue to contribute to the failure of HE teaching[44] to embrace cultural diversity fully, an 'autoethnographic pedagogical approach'[45] may help to engage with students from diverse cultural backgrounds. It develops self-awareness, empathy, and feelings of interconnection with broader, global society through critical reflection on 'personal stories' with their peers and lecturers, without focusing on their social and organizational hierarchies, where such 'cultural therapy' may drive us closer to absolute inclusion in HE. Office hours are perhaps a suitable space for such reflection on the personal.
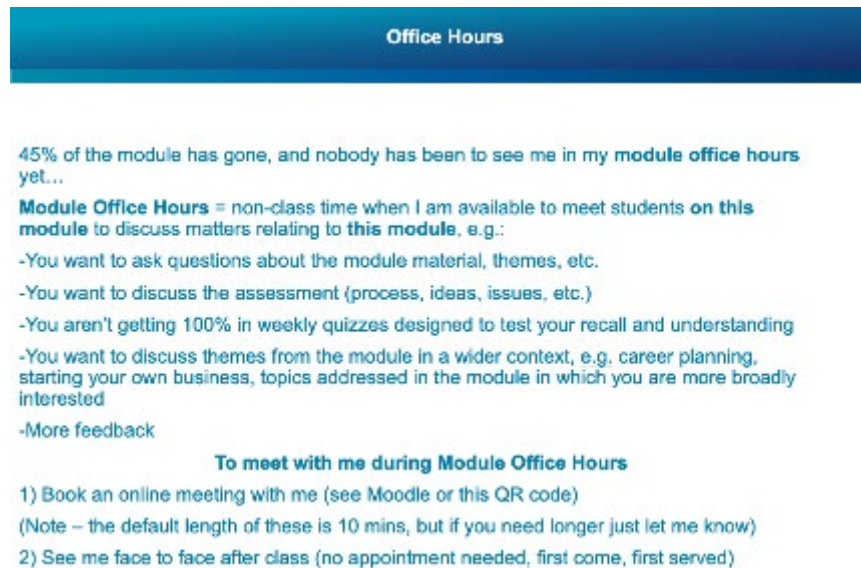
METHODS

Our research question is, 'What is the use of the teaching academic module office hour as a space and place for students to develop and apply critical thinking?'. Our sub-research questions are, 'What are the students' perceived understanding of module office hours (MOH)?', 'What is the perceived value of MOH for students?', and 'How can lecturers encourage the uses of MOH for developing and applying critical thinking?'.

This pilot research applies a qualitative approach that embeds qualitative research methodologies. It examines perceptions of two cohorts in successive academic years, one on a module at NUBS, the other at CULC. These postgraduate modules typically have more than 100 students, comprising home and international students. We collected data through two online surveys designed to capture student understanding, attitudes and perceptions about lecturer office hours. Analysis of results of the first survey, issued in September 2024 (near the end of cohort year) were used to design an intervention highlighting the value of office hours, targeting the second cohort. The second cohort was then surveyed in December 2024 (near the beginning of cohort year), using the same questions as the first survey. We apply descriptive statistical and thematic coding to examine perception trends and contexts.

FINDINGS

Most survey respondents did not use advertised office hours, nor did they feel the need to use office hours. They also failed to describe office hours accurately. These findings suggest that respondents may not truly understand the function, purpose or prospective benefits of office hours, and as a result do not utilize them. Findings from the survey were used to develop an intervention in the form of an information slide (Figure 1) displayed at the start of a lecture midway through the next iteration of our modules (October 2024) to better advertise module office hours to students.

Figure 1. Slide

A follow-up survey to evaluate the effect of this intervention was shared in December 2024. Sample size for both surveys was broadly similar, although it should be noted that class size had increased considerably, meaning the response rate was lower for the second cohort. In the second survey, all students were confident that they understood what office hours were at the end of the module (an improvement on the first survey). Of the free text responses asking students to describe what office hours were in their own words, half of responses in the second survey matched our definition (an improvement on the first survey). However, fewer respondents in the second survey reported utilizing office hours, and, of those, fewer reported using the face-to-face format. This might be explained by students making greater use of informal pre/post-lecture time for face-to-face contact, in place of formal office hours. Respondents reporting using office hours to discuss subject matter increased considerably.

Satisfaction with alignment of office hours to the students' schedules was broadly similar across Surveys One and Two, reflecting minor change in the format and availability of office hours between the two surveys. Similarly, both surveys indicated that students preferred office hours availability in the morning and the afternoon, with lunchtime coming third in preference, and a small percentage of students preferring evening slots (currently not offered). In Survey One, the main reasons given for students not attending office hours saw lack of awareness and lack of need tied, with timeslot inconvenience coming second, while a better understanding of what they are for, and more online options, were given as things that were likely to increase take-up. In Survey Two, the main reason given for not using them was a lack of need, with a lack of awareness, and a lack of understanding of what they were for tied in second place. Finally, respondents were asked what would make them more likely to attend office hours. In Survey One, students' priority was a better understanding of what office hours were for (and this informed the intervention). However, in Survey Two, their priorities were more in-person and online attendance options, although they also emphasized better understanding, and greater flexibility.

DISCUSSION

Critical Thinking in Business Schools

The potential underutilization of office hours represents something of a missed opportunity for critical thinking development[46] as reflected in benchmarks.[47] Survey respondents' struggles to accurately describe office hours suggest they did not necessarily recognize them as an opportunity for personalized academic support and the development of valuable critical and analytical thinking skills that so appeal to employers.[48] Clearly, there is more that could be done to communicate the use and availability of office hours, and much to gain from this, as even our limited intervention appeared to improve understanding and uptake. Our intervention is a first step toward the Quality Code[49] prioritization of student engagement in their learning experience. However, the second survey respondents' preference for various times and formats shows that lecturers may need further student input to better align office hours delivery with student needs.

While lecturers in both business schools may implement problem-based learning[50] and Socratic questioning[51] in classroom settings, our findings suggest these pedagogical strategies may not be fully extended to office hours. The increase in students using office hours to discuss subject matter following our intervention suggests potential for office hours to become must-have extensions of active learning strategies.[52]

The shift toward online office hours seen in Survey Two illustrates how accessibility becomes more effective while supporting the development of critical and analytical skills.[53] This seems to be aligned with industry priorities. Our intervention appears to have had modest success in improving understanding without significantly increasing utilization, suggesting that knowing what office hours are does not automatically translate to recognizing their value for developing reflective practices.[54]

Spaces

Our findings suggest a shift toward online office hours, which aligns with generational learning preferences.[55] The preference for morning and afternoon slots with limited interest in other options perhaps reflects the diverse needs of a multi-generational student body.[56] Generation Y and Z students likely drive the increased demand for online options noted in Survey Two.[57] The shift toward online office hours in Survey Two seems to reflect wider questions[58] regarding office hours without physical spaces. Our findings suggest students may have adapted to post-COVID realities, where academic offices may be increasingly dislocated from teaching spaces. However, this transition might raise concerns about losing physical spaces' informal, inspirational aspects, as highlighted.[59] Our findings seem also to align with research suggesting that office hours are a crucial yet underutilized communication channel.[60] The gap between respondents' confidence in understanding office hours and the accuracy of their descriptions of them may be explored, and the impact of office hours depends on clear conceptualization.[61] The tension between traditional office hours and evolving student expectations mirrors broader challenges regarding globalization's impact.[62] Our intervention attempted to address awareness gaps but did not fully account for a 'global, hybrid, and blended model'[63] that may become necessary.

The increase in subject matter discussions may indicate potential alignment with the concept of office hours facilitating 'higher-order thinking'.[64] However, our findings of persistent underutilization may suggest we have not fully created psychologically safe spaces.[65] The increase in subject matter discussions may also suggest potential for office hours to support critical thinking development. However, we have not yet created office hours as 'immersive learning environments'[66] where students can practice critical thinking skills. The persistent 'lack of need' reported by students may indicate a failure to demonstrate how office hours connect to workplace skills.[67] Our findings do not analyze

cultural dimensions affecting office hours utilization. Our interpretation of our findings may only partly explain why traditional office hours formats are not meeting diverse student needs. The potential for an 'autoethnographic approach' to create safe spaces for critical reflection suggests alternative models[68] beyond our current intervention. The disconnect between what we communicate about office hours and what students understand them to be as revealed in our findings is similar to the 'mismatch' identified by Smith *et al.*[69]

Evolving Perceptions

While the intervention we introduced may not fully address globalization's impact, it marked an attempt to cater to learning preferences across generations and cultures. The increased preference for online office hours in the second survey may indicate a generational shift in our cohorts.[34] That office hours attendance remained low despite improved awareness suggests that structural factors, such as i. perceived needs (students may think they do not need to train themselves to think more critically, students might think they are already writing critically in their assessments or getting assistance elsewhere), ii. convenience (students may seek help only when they want it, and expect it on demand), and iii. learning habits (some students may see AI tools as their learning assistant, or enjoy peer conversations to learn collectively, rather than exploring the subject matter individually, while others may prefer one-on-one conversations with lecturers). These structural factors may be more significant than simple awareness.

CONCLUSION AND RECOMMENDATIONS

A reconsideration and development of office hours may enable lecturers to add value in terms of opportunities for tailored support for individual students in large cohorts in several ways, e.g., embedding office hours alongside lectures/seminars with a more transparent booking system, quizzes to guide students in booking office hours, and advertisement to encourage students to book a slot with lecturers, emphasizing their value in nurturing intellectual curiosity alongside professional interpersonal skills. While future interventions may consider explicitly connecting office hours to developing critical thinking as emphasized in benchmarks, this approach may turn office hours into simply another class from students' perspective. Nevertheless, office hours may benefit from having a co-created good practice toolkit based on both students' and lecturers' experience (the next phase of our research is to investigate the perspectives of lecturers). We also suggest a consideration of mentoring and coaching in office hours, while recognizing that this may require further upskilling for practitioners.

PRACTICAL IMPLICATIONS

This research may guide lecturers in improving office hours' accessibility. It also sets a foundation for further research by linking standards and quality assurance to office hours to improve effective measures required to justify existing practices.

LIMITATIONS

The small sample size of this research may limit the generalizability of the findings,[70] which means the perceptions examined may only be relevant to the specific contexts of both business schools (arguably, perhaps only to those specific modules and cohorts). In particular, the decreased proportion of respondents relative to cohort size in Survey Two limits generalizability. Our interventions focused on awareness rather than explicitly connecting office hours to developing critical and analytical thinking skills. Utilization of online surveys and intervention testing may have introduced response

bias as students may have given us socially desirable answers, skewing our understanding of how and why office hours are used.[71] While this research did not define ways to measure the effectiveness of office hours, it provides a foundation for future research direction.

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DESIGNING FUTURES: INTERIOR SPACES OF REFUGEE EDUCATION IN KENYAN COMMUNITIES

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INTRODUCTION

This study examined the interiors of community spaces in Nairobi, Kenya that provide educational services to refugee populations. Interiors were broadly defined to include traveling field hospitals providing accessible prenatal care, urban farming courses, orphanages, crowded training rooms where women learned to sew and the unique vernacular use of the courtyard. Similarly, education was understood broadly encompassing craft skill development, entrepreneurship training, and advocacy for mental and physical health. These broad definitions highlight the need for design research that considers interiors beyond the conventional Western framework.

Many refugee-led education initiatives operate with minimal resources yet play a crucial role in providing essential learning opportunities. This study was conducted as part of a research initiative on global health--Developing an Interdisciplinary Global Forced Migration and Health Collaborative (FMHC).[1]

This study aimed to highlight the inclusive and transformative potential of interior spaces, while recognizing and celebrating the efforts of these communities to improve the lives of some of the world's most vulnerable populations. Using visual research methods, the study constructed a narrative that underscored the significance of these interiors within refugee communities.

This research demonstrated the need to rethink the concept of interiors—moving beyond static, enclosed spaces to recognize their role as dynamic environments capable of fostering empowerment. By examining the intersection of design, education, and community, this study emphasized that interiors are not merely physical structures but active agents of change. As design research continues to evolve, these findings advocate for an expanded framework that prioritizes inclusivity and acknowledges the diverse realities in which interiors function.

FAMILIAR FORMS

Architecture and design educators are well acquainted with the traditional studio classroom typology, illustrated in Figure 1.

Figure 1. Learning-by-Doing University Classrooms. Left: c.1908 University of Northern Iowa industrial arts classroom[2]. Right: 2025 University of Nebraska-Lincoln College of Architecture HDR Pavilion[3]

Learning and Doing Spatial Zones

In studio-based education, students transition between learning zones and doing zones throughout a studio session. The breakout space, such as the stadium stairs depicted in Figure 1, supports knowledge dissemination and discussion facilitating instructional delivery with tiered seating designed to accommodate large groups.

The doing zone consists of individual or group workstations where students engage in project development, relying on peer interaction and instructor critique to refine their work. Within this space students construct models, test concepts, and integrate insights gained from the learning zone. The ability to experiment, receive immediate feedback, and iteratively refine ideas within a collaborative environment remains a cornerstone of studio-based education.

Despite significant advancements in technology, pedagogy, and collaborative methodologies in design education the fundamental learning and doing zoned dual typology of studio-based learning remains largely intact. This spatial organization of studio education reflects the traditional division between knowledge-sharing and hands-on application and its persistence underscores how deeply these ideas are engrained into the education practice.

Social Spatial Zones

At Amref International University, student social integration is facilitated through the open corridors and central courtyard, as depicted in Figure 2. Attracting students from diverse international backgrounds, the central courtyard plays a vital role in fostering cross-cultural engagement and social cohesion. This central space serves as a primary gathering area, fostering interaction among students between classes while providing direct access to adjacent classrooms.

Designed to be both welcoming and functional, this shared environment supports informal interactions contributing to a strong sense of place and community on campus. Additionally, the courtyard connects to the campus dining hall where traditional Kenyan cuisine is served, further enhancing the communal atmosphere. Moreover, the integration of natural elements within the

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campus setting offers mental health benefits, functioning as a "third space" that provides students and faculty with a respite from academic demands while promoting well-being.

Figure 2. Amref University courtyard and corridors[4]

FRAMEWORK OF REFUGEE VOCATIONAL EDUCATION IN KENYA

While formal education is directed by the Ministry of Education and Non-profit Organizations, informal vocational training has fewer mandated standards. Largely led by Refugee Led Organizations (RLO) vocational training aims at small educational gains to improve employability and social integration of refugees. Refuge Point[5] and RELON-Kenya[6] are national networks of RLOs uniting these largely grassroots efforts in finding funding opportunities and sharing practical operational strategies.

During our fieldwork, we collaborated with Jonas Ndayisenga, the Executive Director and Co-Founder of Umoja Refugee Creatives. Founded in 2015 by a group of Burundian refugees who migrated to urban Nairobi, Umoja emerged as a vital community resource built to empower the refugee community through entrepreneurship, skill-building, and mental health services. Participants attend free courses in a variety of practical skills, including sewing and tailoring, soapmaking, photography, and cinematography offered by Umoja. We were invited to observe and participate in Umoja's programs, as well as engage with other partners aligned with its mission providing opportunities to witness the scope and impact of RLOs operating in real-time.

WORKING WITHIN VISUAL NARRATIVE METHODOLOGY

This study employed visual methodologies for data collection, interpreting images, sketches, and field notes from the FMHC June 2024 research trip as it constructs a narrative highlighting the role of interior spaces within refugee communities and their social, educational, and cultural significance.

Visual narratives are grounded in the premise that images can serve as powerful tools for revealing insights into both social behaviors and the material culture of designed environments.[7] Inherently partial and interpretive, visual representations offer perspectives on how viewers interact and navigate through these spaces.[8] Through this methodological approach, this study contributes to a deeper understanding of the ways in which refugee-led educational environments function, adapt, and evolve within resource-constrained settings.

The authors engaged in a collaborative interpretative process[9] to determine the selection and framing of visual narrative carefully considering each image's significance within the study. Engaging in a process of "captioning" the images, the authors drew upon their respective areas of expertise: interior designer (Sonya), architectural studies (Josh), public health research (Patrick), and psychology with a focus on refugee communities (Ericsson) guiding readers through the visual data, while integrating diverse perspectives. The inclusion of captions alongside the images facilitates a dynamic reading experience, allowing for a deeper engagement with the ideas. In line with Fiske's concept of "producerly texts," the images remain open-ended resisting definitive truths and allowing for multiple meanings to emerge.[10] This indeterminacy reflects the complexity of the refugee experience and underscores the evolving nature of visual research as a method for documenting and understanding lived realities.

These images confronted our expectations about both interiors and education and this investigation led to meaning(s) of these images that exceeded any power to discipline them. Gaps remain intentionally wide enough for whole new narrative to be produced within them from the viewer's own perspective —the images and the narrative are in a very real sense, beyond our control. Arts-based research methods in health research continues to evolve as an engaging way to tell stories often overlooked in more traditional research methods.[11] Visual narratives invite the viewer to experience the story in ways that resonate with their own interpretations, perspectives, and lived experiences converging with the story being narrated. This visual narrative seeks to take along the viewer while also inviting them to be a part of it as Berger[12] and Sontag[13]'s influences are found in the insistence that viewers are engaged in a conversation about what the images mean and how they operate in telling but one version of the narrative.

OUR STORY
Karabuni "Welcome"

Figure 3. Security Gates at Umoja[14]

In planning the Kenya trip the principal investigators (PIs) prioritized direct engagement with Refugee-Led Organizations (RLOs) operating on the ground. Given the objectives of the FMHC grant, the team sought to gain firsthand insights regarding the resources and support necessary to

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sustain RLO initiatives ensuring that the collaborative framework would be both relevant and impactful.

From a visual research perspective, documenting these interactions was critical in capturing the knowledge exchanged during the visit. These blue security gates led into Umoja Refugee Collective site. As the team drove through the surrounding neighbourhood, they were struck by the stark realities of poverty and lack of public infrastructure. Alongside these challenges, they also came to learn the remarkable resilience among the RLOs working in the community. This juxtaposition of hardship and perseverance underscored the importance of centering refugee voices in discussions about sustainable solutions to forced displacement and public health challenges.

Namanga Health Centre

Figure 4. Outreach Medical Services[15]

Public health team members visited this rural health clinic near the Tanzanian border. Ericsson stated that this clinic is among the first healthcare facilities for the Maasai, a nomadic community, offering essential healthcare services to the local Maasai population. Additionally, it extends services to some refugees migrating from Tanzania to Kenya via the Namanga border.

Maternal and infant clinicians promote Kangaroo Mother Care depicted in the educational poster. Emphasizing skin-to-skin contact for newborns is critical in regulating body temperature among malnourished infants who struggle with thermoregulation. Patrick noted that breastfeeding education is equally essential for new mothers as it significantly contributes to improved long-term health outcomes for their children.

During the visit, clinicians demonstrated the use of mobile ultrasound technology via iPads enabling real-time prenatal imaging for women providing critical diagnostic capabilities in a region where healthcare facilities are inaccessible. The dedication of the healthcare professionals at the clinic who often operate beyond conventional medical roles to provide holistic care to their patients. This work underscored the importance of understanding the situational and environmental contexts in which healthcare is delivered ensuring that medical interventions are responsive to the needs of displaced and marginalized populations.

Brain United for Development

Figure 5. Urban Farming[16]

Brain United for Development (BUD), provides agricultural education equipping program participants with essential skills for food subsistence. Through hands-on engagement in crop cultivation and animal husbandry, the program not only imparts practical agricultural skills but also underscores the therapeutic benefits of working with nature, promoting both physical well-being and mental health. During the visit Josh expressed a sense of serenity finding relief from the dense, fast-paced urban environment of Nairobi. The valley's topographic shift and tree-lined periphery provided a sense of enclosure and tranquility, challenging conventional definitions of "private" and "semi-private" spaces. In the fields, program participants engage in weeding crops and drawing water from a nearby creek for irrigation. In an adjacent courtyard, geese are fed and cared for as part of the organization's animal husbandry education program. Upon successful completion of the course, participants had the opportunity to take home geese or chickens, allowing them to apply their newly acquired skills to sustain themselves and their families.

BUD challenged traditional notions of interior learning environments, where conventional classroom structures were absent, and yet education was delivered effectively. Additionally, the integration of nature into the learning process reinforced the mental health benefits of agricultural work, found both physical exercise and psychological relief through active engagement with the land.
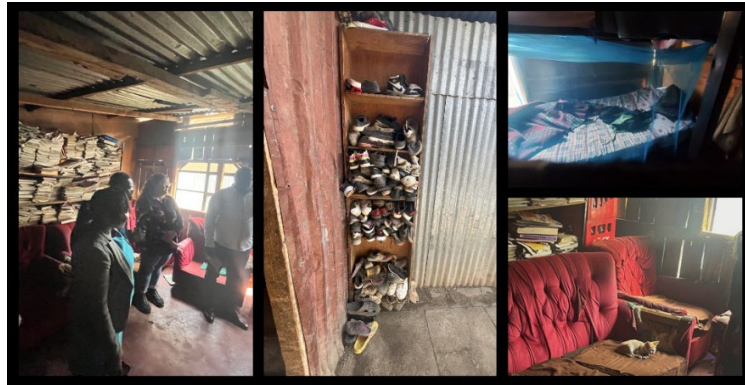
Vijito School

Figure 6. Inside the Orphanage[17]

The Vijito School provides shelter and education to vulnerable children serving as a refuge for school-aged children facing extreme hardship, including those who are orphaned, living with HIV, or experiencing severe poverty. With a total enrollment of 113 students, ranging in age from five to twenty, the school functions as both a home and a learning environment. This school offers critical stability in otherwise precarious circumstances.

The school operates under a structured schedule designed to instill discipline, personal responsibility, and spiritual development, while also ensuring that students receive a foundational education. Spatially domestic and academic spaces seamlessly overlay reflecting their holistic approach to education. Operating with limited resources, the school faces significant challenges in maintaining adequate infrastructure, providing nutritious meals, and ensuring access to educational materials. During our visit, we toured the shared living quarters where 44 students shared 12 beds and classroom space that doubled as the library. The school provides basic social services, promoting the survival and well-being of children. It enhances resilience in children and young people who have faced trauma during forced displacement, enabling them to come together, bond, and share experiences, which significantly aids in healing, cognitive restoration, and revitalization which is essential during the learning period and socialization.

Umoja Digital Literacy and Language Training

Figure 7. Digital Literacy at Umoja[18]

Within Umoja's educational spaces students learn digital literacy and language acquisition, both of which are essential skills for social and economic integration. The image on the left showcases a

conference room equipped with laptops, primarily designed for teenagers and young adults providing opportunities for youth to engage with technology in ways that enhance their educational and professional prospects.

The desktop computers designated for digital literacy classes, which primarily serve older adults focusing on equipping participants with the foundational technological skills necessary to navigate digital platforms, particularly for practical applications such as seeking employment, accessing financial resources, and applying for aid. Digitial literacy is a fundamental competency, even for individuals with limited financial means. The ability to access online services, communicate through digital platforms, and engage with government and humanitarian assistance programs is increasingly critical for social inclusion.

The poster outlines fundamental English language skills, underscoring the importance of linguistic proficiency in complementing digital literacy. Language acquisition serves as a crucial bridge, enabling individuals to fully utilize technological tools, engage with online resources, and participate more effectively in community and economic activities. These educational initiatives not only empower individuals with practical skills, but also address systemic barriers to access, ensuring that displaced and marginalized populations are better positioned to navigate and succeed in a technology-driven world.

Umoja Sewing and Tailoring Training

Figure 8. Selling Fabric Goods in Umoja Courtyard[19]

Umoja also offers educational programs aimed at developing sewing skills, equipping participants with the technical expertise necessary to secure employment in factories or produce handmade goods for sale. These courses attract women who seek to gain proficiency in sewing, pattern-making, and garment construction. On the day of our visit, approximately twelve women were actively engaged in a class project focused on developing final products for selling.

This image captures several women from the class showcasing their completed products, highlighting their progress and creative achievements. To the right, additional images display the selection of fabrics available for students to incorporate into their designs, along with individual sewing machines provided for skill development. The program emphasizes not only technical training but also economic empowerment, as participants are encouraged to sell their handcrafted goods within the communal courtyard space as well as in broader commercial markets throughout Nairobi. The prominence of colorful textiles and meticulous attention to detail in the designs reflect both the artistic expression and cultural significance of these handcrafted items. By fostering entrepreneurship and

vocational training, this initiative contributes to economic sustainability and skill-based empowerment within the refugee and displaced communities.

Umoja's Central Courtyard

Figure 9. Selling Fabric Goods in Umoja Courtyard[20]

Here Martha, the social media coordinator for Umoja, and Brittany Bearss, a graduate student at the University of Nebraska-Lincoln (UNL), utilizing the courtyard as a space for discussing fieldwork activities. Due to spatial limitations within the Umoja buildings, where interior spaces were predominantly occupied by programming, the courtyard effectively functioned as an extension of the interior environment, accommodating conversations and various activities. Given Kenya's temperate climate, exterior spaces are frequently used for gatherings, social interactions, and commercial activities. These courtyards serve as liminal spaces, both physically—positioned between buildings— and conceptually, blurring the distinctions between interior and exterior environments. In the background, a table marks the site of a luncheon hosted by Umoja, featuring traditional Kenyan dishes prepared by chefs who received training through one of the organization's educational programs.

DISCUSSIONS

Visual research serves as both a methodological process for generating knowledge and a tangible means of disseminating research findings[21]. In the context of forced migration and displacement, this research highlights the complexity of refugees' education experiences in their country of origin and their adaptation to new environments. Many displaced individuals hold aspirations of peace and an eventual return to their homeland. However, their immediate reality in host countries, such as Kenya,

presents significant challenges, particularly concerning human rights such as healthcare and education, vulnerability due to lack of language and skills to be self-sufficient.

One notable outcome of the RLOs is the training and education programs that equip individuals with skills for economic self-sufficiency. Refugees engage in small-scale entrepreneurial activities, such as selling goods in communal courtyards, which serve both economic and social functions. These activities not only provide financial support but also foster community cohesion and a sense of agency among displaced people. The development of goods and services through entrepreneurship further illustrates how refugees actively contribute to the economy despite the structural barriers they face.

The knowledge produced through visual research critically interrogates assumptions about spatial interior adaptations and education in the RLO contexts. Refugees frequently encounter significant obstacles in navigating policies and legal systems often facing marginalization, human rights violations, and being perceived as outsiders. This sense of exclusion can contribute to their dehumanization, reinforcing their struggle to establish a stable and dignified life in their host country. Nonetheless, research also reveals the resilience of refugee communities[22] in shaping alternative opportunities for empowerment.

The physical and environmental conditions within refugee communities raise significant concerns regarding health and well-being. Overcrowding and high-density living conditions create challenges related to sanitation, privacy, and mental health. The adaptability of courtyards as flexible, multi-purpose spaces offers potential solutions to mitigate these challenges, providing areas for economic activity, education, and social interaction. Future research could explore approaches to improve spatial design within refugee environments, ensuring that such spaces contribute positively to health outcomes.

Broadening the conceptualization of interior spaces and education challenges dominant assumptions about how refugees should live and learn. In integrating visual research with policy interventions, a more holistic understanding of displacement emerges—one that acknowledges both the vulnerabilities and the capacities of refugee populations. In doing so, this research encourages a shift toward more inclusive, adaptive, and dignified approaches to refugee integration.

NOTES

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[3] Photo credits: Sonya G. Türkman

[4] Photo credits: Sonya G. Türkman

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[14] Photo credits: Sonya G. Türkman

[15] Photo credits: Brittany Bearss and Joshua Holstein

[16] Photo credits: Joshua Holstein

[17] Photo credits: Joshua Holstein

[18] Photo credits: Brittany Bearss and Joshua Holstein

[19] Photo credits: Sonya G. Türkman, Francisca Klenam, and Brittany Bearss

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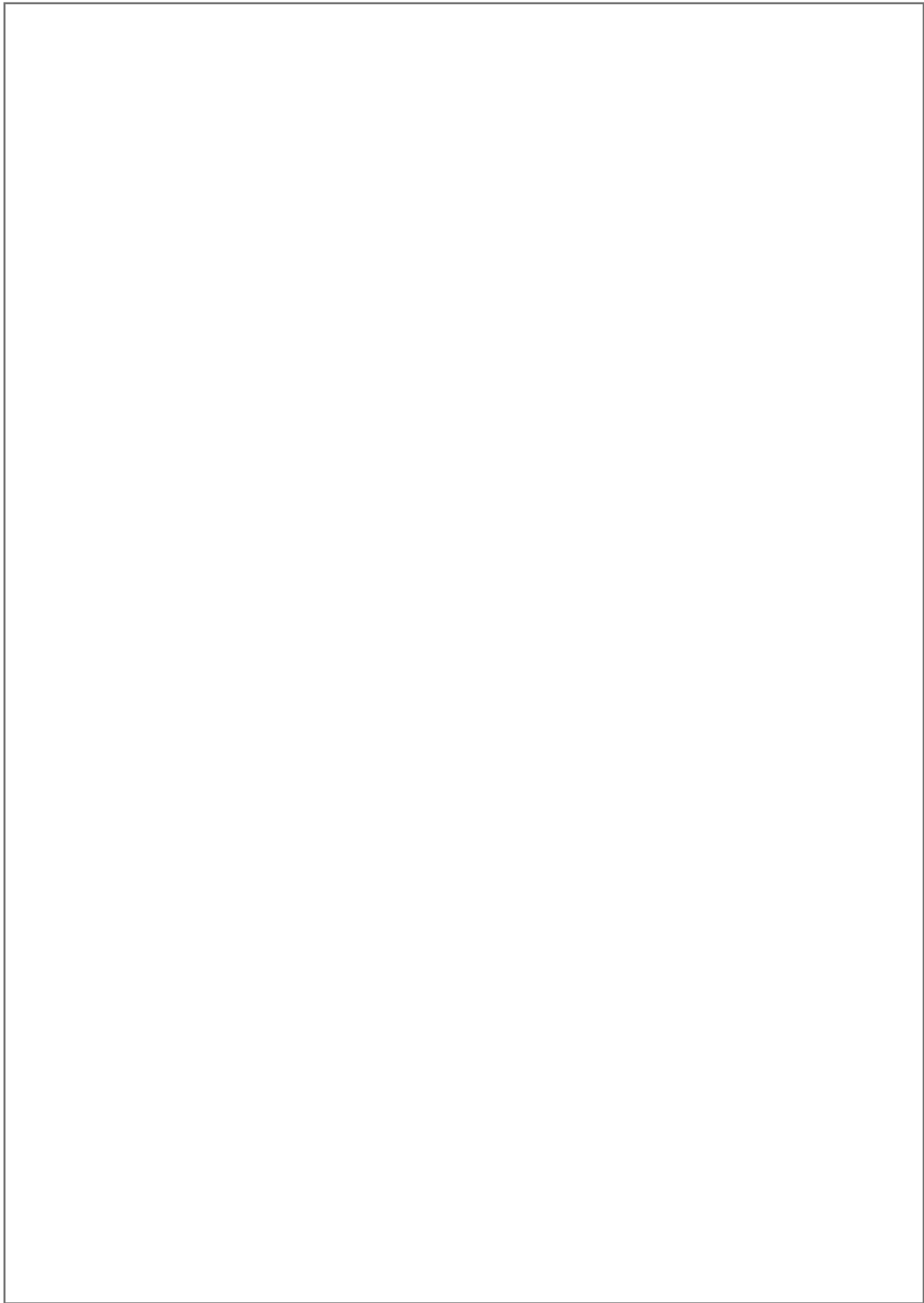
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