Values of the T-shaped Leader: Applying the 4M Framework to Address SoTL Grand Challenges and Foster Sustainable Development Goals in Higher Education

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Abstract

This paper follows the conceptual T-shaped model, introduced by (Eady et al., 2021), serving as a conduit for the dissemination of empirical data derived from engaging discussions with international Scholarship of Teaching and Learning (SoTL) scholars. The authors not only present the model, but also offer autoethnographic reflections, unravelling the key values embedded within it. These values (context, contribution and co-creation, ethics of care, valuing, and research) are explored in-depth, highlighting their integral role in the T-shaped model. Expanding the initial framework (Eady et al., 2021), this paper explores the interconnections between the T-shaped model's five values through the analytical lens of the 4M model, as articulated by Friberg (2016). This exploration spans all four levels: the personal (micro level), institutional (meso level), alignment with the recently released SoTL Grand Challenges (macro level) (Scharff et al., 2023), and a commitment to addressing the Sustainable Development Goals (SDGs) outlined by the United Nations (mega level). As higher education institutions worldwide ardently pursue the preparation of globally competent graduates, this paper highlights the imperative of well-informed institutions. These institutions should not only champion the significance of teaching and learning but also conscientiously safeguard finite global resources. Acting as a guidepost for the journey ahead, this paper illuminates a path toward creating an educational landscape that aligns with contemporary challenges and strives to meet the evolving demands of the future. In doing so, it contributes to the ongoing discourse on advancing pedagogical practices for holistic higher education.

Practitioner Notes

1. Educators must reflect on what they value about their teaching and their learners.
2. Reflections and actions should span the 4M model of micro, meso, macro, and mega levels of SoTL.
3. Practitioners must be cognisant of how HE is changing and is influenced by our global landscape.
4. Educators must focus on learner-centred outcomes, which are promoted in the T-shaped SoTL model.
5. Practitioners should see SoTL as fostering inquiry and discourse in the development of a T-shaped individual who can flourish in an interconnected world.

Keywords

T-shaped Values, SoTL, Sustainability, 4M Model, Global Competence

Introduction

In our first paper (Eady et al., 2021) we explored how we realign the Scholarship of Teaching and Learning (SoTL) to account for the rapid changes in the higher education (HE) landscape and a move towards student-centred approaches in lifelong learning. In this work we view SoTL as a systematic inquiry of student learning, using a range of methodologies and the sharing of findings through appropriate activities. This view was informed by our lived (*actively engaging in SoTL*), learned (*working collaboratively to assess what works*) and led (*leading SoTL projects and initiatives*) experiences. SoTL foregrounds research into teaching and learning and re-designates HE teaching as a developmental activity requiring purposeful experimentation, investigation and exploration. Bass (2020) postulated that SoTL's value lies in not simply fixing pedagogical issues but researching how, why and when they occur. SoTL aims to foster significant, long-lasting learning for all students and to advance the practice and profession of higher education (HE) teaching. This applied definition led to the design and development of the T-shaped model for SoTL (Eady et al., 2021) that envisions its role in fostering inquiry and discourse into the development of the T-shaped individual. Grounded in disciplinary knowledge and practice (represented by the vertical stroke of the T) the student must also be adept at skills of a more personal, social and employable nature (the horizontal stroke of the T), including life skills and abilities such as critical thinking, problem-solving, communication, and responsibility. As such, these life skills are necessarily transferable for application in novel situations and foster "flourishing," which allows students to reach their potential as individuals able to function towards thriving. We reposition SoTL to form both the fulcrum and the threads of discourse entwined around the structure of the T-shaped individual (Figure 1). We encourage T-shaped practitioners, and a T-shaped SoTL community (Eady et al., 2021).

The T-shaped model provides a landscape for conversations at the personal (micro), institutional (meso), SoTL-wide (macro), and global (mega) levels that discuss changes in HE globally and support a shift towards attending more purposefully and intentionally to each individual student. Our work encourages a reshaping of learning outcomes and a move towards learner centred objectives, which has the potential for educators to customise the learning experience to better support individual learning journeys, collaborative visions, institutional goals, and global concerns. The T-shaped model repositions the individual within the institution and moves towards understanding the lived versus the learned experience. Furthermore, the model tackles emotions and adversities in promoting aspirations (Eady et al., 2021). Our model has been widely presented and shared with international communities of practice who have positively interacted with the values of the T-shaped SoTL model to guide educators towards holistic, integrated, evidence-based pedagogical practices.

The co-authors of this article are six multidisciplinary international university academics who were brought together in 2019 through an International Collaborative Writing Group (ICWG) with the International Society for the Scholarship of Teaching and Learning (ISSOTL). Since our initial publication, our observations have been challenged and enriched by the newly released ISSOTL Grand Challenges (Scharff et al., 2023), which have allowed us to critically assess the intersections between teaching, learning, and societal needs. Our ongoing exploration is aligned with addressing these five Grand Challenges, which serve as pivotal considerations for understanding and enhancing postsecondary teaching and learning. These five challenges encourage one to foster critical and creative thinkers, develop student engagement in learning,

investigate the intricate processes of learning, examine the impact of identities on teaching and learning, and explore the practice, use, and growth of SoTL itself (Scharff et al., 2023).

Figure 1

T-Shaped SoTL Model (Eady et al., 2021)
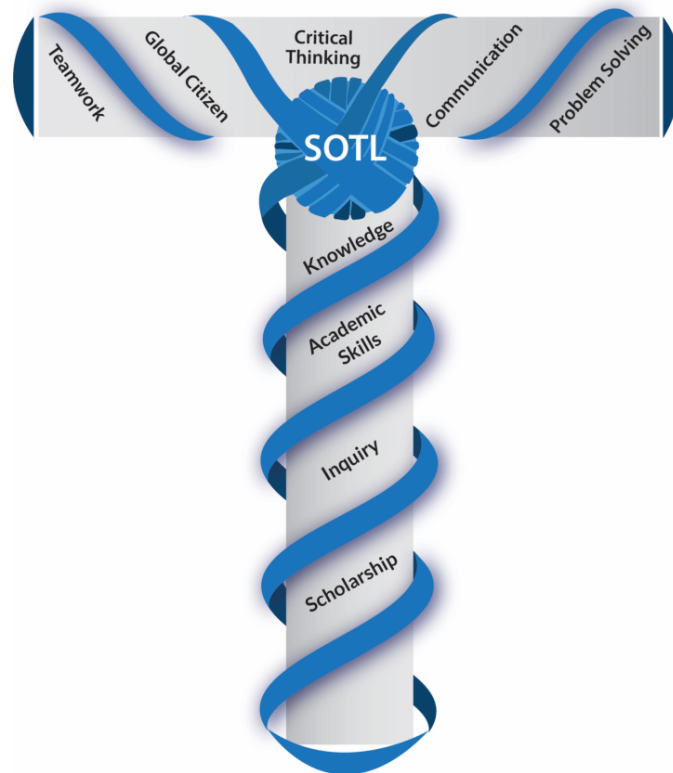
We are also witnessing trends in global HE through our SoTL perspectives. These trends are not only shaped by the evolving landscape of education but are also increasingly influenced by the broader global agenda encapsulated in the Sustainable Development Goals (SDGs) (United Nations, 2015). As HE grapples with pressing issues outlined in the SDGs, including quality education, these imperatives significantly impact the pathway of HE systems worldwide. As we navigate these challenges, our work aims to integrate these fundamental considerations with our T-shaped model, offering a comprehensive framework that aligns with Friberg's (2016) 4M Framework across personal (micro), institutional (meso), pedagogies of SoTL (macro), and global dimensions (mega) of HE.

Literature

Friberg's (2016) 4M framework provides a comprehensive structure to delineate the layers of influence within educational systems. This framework categorises micro as the realm of the individual researcher, meso encompassing department-level factors, macro involving institutional-level influences, and mega emphasising disciplinary and interdisciplinary impacts (Poole & Simmons, 2013; Simmons, 2009, 2016). Widely acknowledged in scholarly discourse, authors have employed the 4M framework to explore and analyse the expansive impact of SoTL across diverse levels, both within and extending beyond institutional boundaries (Poole & Simmons, 2013; Poole et al., 2007; Simmons, 2009, 2016). Starting with the micro level and moving towards

the big picture thinking of the framework, the following sections briefly connect the 4M framework to current higher educational issues.

The Micro Perspective – Individuals Teaching in Higher Education

There is no doubt that teachers exert a great deal of influence in shaping teaching and learning environments (Hennessey, 2013). Knewstubb and Bond (2009) highlighted variations (depending on what the teacher focused on) in the way the same materials were taught, and how this provided different objects of learning for students (see also Marton, Runesson & Tsui, 2004; Runesson, 1999). Brookfield (2017) suggested that as educators, teachers must examine how their assumptions inform their practice by viewing them through four complementary lenses - the lenses of the students' eyes, colleagues' perceptions, theoretical literature, and their own experiences. Boyer (1990, p.23) reminded us that "faculty [or academics], as scholars, are also learners" and Brookfield (2017, p.30) challenges us to "review our personal autobiographies as learners so that we can make visceral connections to, and gain a better understanding of, the pleasures and terrors our own students are experiencing".

The Meso Perspective- Higher Education Institution

Curricula in HE have been through a period of significant change where there are increasing demands for institutions to more effectively prepare graduates for the real world, and in particular, employment (Brooman et al., 2015). This is compounded by the governance of curricula decision-making, the influences of which are multi-level and vary from country to country and institution to institution. Some curricula are decided by the state, whereas others are directed by external regulators and professional bodies (Grant, 2021). There is also rising pressure on academics to provide more engaging student-focused education, which is challenged by growing student numbers and increased workloads (Dredge & Schott, 2013).

The Macro Perspective - Grand Challenges of SoTL

Scharff et al. (2023) identified five Grand Challenges for SoTL (foster critical and creative thinkers, develop student engagement in learning, investigate the intricate processes of learning, examine the impact of identities on teaching and learning, and explore the practice, use, and growth of SoTL itself) to guide research efforts and support ongoing investigations considering the evolving nature of teaching and learning contexts. Understanding the five Grand Challenges for SoTL offers a roadmap for educators deeply committed to enhancing teaching and learning. It provides a framework to structure their research endeavours, classroom strategies, and professional development goals. Ultimately, this knowledge empowers SoTL educators to make a tangible impact within their classrooms and beyond (Sipes et al., 2020). It enables them to be catalysts for change, driving improvements in teaching and learning practices, and contributing to the broader mission of advancing education on a global scale.

The Mega Perspective - Sustainable Development Goals (SDG)

More than 1,700 universities from 115 countries are actively integrating the UN SDGs into their educational frameworks (Times Higher Education, 2023). In 2015, the 2030 Agenda for Sustainable Development was adopted by all United Nations. The mission statement for these 17 goals were shared as a blueprint for peace and prosperity for people and the planet, now and into

the future (United Nations, 2015, para 1). These goals (specifically 3, 4, 10, dealing with dignity, equity and reducing inequality in education and life experiences) serve as an essential guiding framework, transcending national boundaries and uniting academia in a concerted effort toward sustainable global development. In assessing how well universities perform on the SDGs, the Times Higher Education Impact Rankings make comprehensive comparisons across broad areas, including how teaching in various contexts (in the classroom, the community, and beyond) is shaped to achieve sustainable growth. Thus, higher education institutions are influenced by a global initiative that encourages a movement towards the preparation of new world leaders who will embrace and illuminate the SDGs.

Intersecting the 4Ms with our initial T-shaped SoTL model, and deepening it with our present research, allows us to ground HE change within the purview of individual educators. When we analyse and apply a holistic approach on an individual level (micro), we can then more effectively scale up and introduce change in the ensuing levels (meso, macro, mega).

Method

The pedagogic practices educators employ profoundly shape students' perceptions of disciplinary knowledge and the nature of expertise within their field (Conley et al., 2004; Hofer et al., 2021). These practices do not merely transmit content; they model epistemological frameworks through which students come to understand what it means to know, inquire, and thrive within a discipline. While substantial literature addresses how teachers influence learning in higher education (Samuelowicz & Bain, 2001), these studies often privilege teaching strategies over deeper engagement with the values, identities, and dispositions that educators bring to their work. In response, our study aims to illuminate how educators' foundational values shape not only their practice, but also the co-creation of future communities of shared and meaningful professional practice.

This inquiry is grounded in a qualitative, interpretivist paradigm and draws on both individual and collaborative autoethnography as method and methodology (Chang, 2008; Denzin, 2014; Ellis, 2004; Holman Jones et al., 2013; Sparkes, 2002). Interpretivism acknowledges that knowledge is contextually situated and socially constructed, and that individuals' behaviours and beliefs are shaped by their socio-cultural environments (Myers, 2008). This aligns with our philosophical and ontological stance as educators committed to understanding and enhancing the complex interplay between teaching interventions and learner experiences (Myers, 2008). As researchers and educators engaged in reflective practice across diverse international higher education contexts, we position ourselves as co-constructors of knowledge, shaped by and shaping the pedagogical values we enact. Following Heewon Chang's foundational model and the collaborative extension offered by Chang, Ngunjiri, and Hernandez (2012), we view autoethnography not simply as personal narrative, but as a critically reflexive, relational, and rigorous research methodology well-suited to exploring the complexities of educational identity and practice.

Our work also responds to the principles of the Scholarship of Teaching and Learning (SoTL), particularly Felten's (2013) emphasis on context, partnership, and inquiry grounded in reflective practice. Our central research question was: How are we enacting the T-shaped model in our teaching contexts, and what values underpin this practice? We understand T-shaped education

as integrating disciplinary depth with transdisciplinary breadth, grounded in relational and values-driven practice.

To answer this, each of us composed written autoethnographic narratives reflecting on our practice. These were treated as situated and layered accounts of lived professional experience. Individually and collectively, we analysed these narratives using a hybrid approach: Braun and Clarke's (2006) six-phase thematic analysis provided a scaffold for initial inductive coding, while Saldaña and Omasta's (2016) first- and second-cycle coding strategies enabled further analytic refinement. This was supported by Sandelowski's (1995) concept of interpretive description, which legitimises meaning derived from close, context-sensitive readings of narrative data.

Our analysis unfolded through iterative cycles of individual coding, shared discussion, and reflective dialogue, a process Lapadat (2017) calls dialogic retrospection. These collaborative engagements allowed for deeper meaning-making across disciplinary, institutional, and geographic contexts. Five foundational values consistently emerged across our reflections. Rather than abstract themes, these values reflect the affective, ethical, and pedagogical dimensions of our work and act as conceptual anchors that reveal how T-shaped learning is lived and cultivated.

Importantly, we reject the artificial separation of findings and discussion. In line with narrative research conventions (Ellis, Adams & Bochner, 2011), we consciously fuse data, literature, and interpretation to offer a coherent, integrative account of our practices. The contemplative questions threaded through the text serve not only as reflective prompts but as invitations for reader engagement, though we acknowledge their use must be balanced to avoid narrative disruption.

Our findings are structured using a micro–meso–macro–mega framework (Friberg, 2016) strategies. The meso level connects these practices to institutional cultures and systems. The macro level draws on the SoTL Grand Challenges (Scharff et al., 2023) to articulate broader sector-wide priorities, and the mega level situates our inquiry within global educational aspirations such as the United Nations Sustainable Development Goals (SDGs). This layered structure supports a more integrative understanding of how local teaching practices contribute to systemic and global educational change.

Finally, our research group operates as a Community of Practice (Wenger, 1998) - a dynamic space of mutual learning, shared inquiry, and participatory meaning-making. Our collaborative process not only shaped the methodological rigour of the study, but also reflected the very values we seek to understand: connection, curiosity, criticality, and care.

Results

Values Underpinning a T-shaped Education

The analysis of our autoethnographic reflections identified five values to help others move forward as T-shaped educators from micro to meso to macro and mega levels of change in higher education. We unpack these values and provide examples of how they are enacted in our own T-shaped teaching and learning in our individual and international higher education contexts. We present the five cardinal values of the T-shaped educator together with a series of reflective questions to direct and challenge future thinking around each of the values. In our analysis of each T-shaped value, we pose questions to enable readers to consider the application of the value within their own context, which provides a lens to not only read the work but apply it as well.

Value 1. Context

The T-shaped educator who integrates a SoTL approach knows that context matters. They pay close attention to context – one's own context, the learners' context, and the larger socio-cultural, global context. They also adapt to the changing landscape, again, that impacts their learners, their fields, their institutions, and their own lives. That flexibility and willingness to adapt leads to important partnerships that expand opportunities for all learners involved.

Understanding oneself and one's positionality deeply influence one's thoughts and behaviours, particularly in teaching. This is seen below in the comment from Michelle (Author 2) where she articulates clearly the way in which her prior experiences and context impacted the way in which she moved through life, shaping her choices, interactions, and intentions with students:

> Everything that I have done since my ability to be employed has been to do with people and therefore, the skills that I have mastered over nearly forty years of employment have mainly to do with people - communicating with, caring for, mentoring, developing, role modelling, setting examples, are all ways in which I have worked with people in the past. In order to do this, there are accompanying skills that are needed to succeed in working with people. These include attributes such as patience, vulnerability, empathy, understanding, perseverance, creativity, resilience, willingness to take risks and "put myself out there." As a teacher, I grew these skills through the experiences I had on a day-to-day basis dealing with difficult parents, breaking up a fight on the playground, meetings with executive staff, discussions with community members, working with the parent on a community committee, involving Indigenous community members in schools. All of these things, along with the day-to-day business of being a school teacher has resulted in me carrying a sort of tool kit around with me, perhaps even a backpack of resources, that helps me to navigate through my community and the larger global community as both an educated and compassionate member of society.

This tool kit of people skills and experiences is what shapes Michelle's drive to provide structured, intentional opportunities for her students to create their own personal backpack of resources so they, too, can become educated, compassionate members of society.

Corinne (Author 6) understands the realities of both her students' need for work-life experience and her community colleagues' press for time and resources. Attending to both contexts, she

developed a project for her teachers-in-training students to help with the unmet needs of local teachers. She explains:

> In my course, we partnered with around 8 local primary schools to give WIL [work-integrated learning] opportunities to our students that also benefited our school-based colleagues. We asked teachers at each school to suggest a topic that they would like to focus on as a staff/school but have not yet had the time to explore in depth ... Over the semester, these groups of students independently researched their chosen topic (with tutor support) and developed resources that the school could use.

The project allowed students to develop their research skills, while also fulfilling a need that teachers had within their individual environments that they couldn't address. Bridging both contexts, and fully respecting teachers' ability to delineate areas of need, Corinne's students acquired and practised the many skills needed as future teachers while also fulfilling an important community need.

Discerning one's institutional context and leveraging it for the benefit of learners is yet another step towards showing how context matters. For instance, Lisa (Author 1) notes that being cognisant of their areas of growth makes their centre for teaching and learning (CTL) actively partner with other entities on campus. She states:

> We, as a CTL, are learning ourselves and partnering with our colleagues in Educational Improvement and Innovation (the umbrella under which we sit) who have great expertise in diversity, equity, and inclusion work. We are also partnering with colleagues from the Library on open educational resources work and other overlapping or common work.

By admitting that they don't know everything or can provide all to everyone, Nina's (Author 5) team partners with colleagues in other sections and divisions to provide more effective, collaborative faculty support and resources. These partnerships have led to co-facilitated workshops about creating more equitable syllabi, handling difficult conversations in the classroom, and more.

Meanwhile, Earle (Author 3) highlights how the context of employability shapes how he conceptualises and teaches his students. He maintains,

> Within the horizontal bar of the T-shaped model, critical skills such as communication and informed problem solving become central to the graduate suite of attributes. These serve to enhance employability opportunities by focusing on how the graduate applies, and not necessarily acquires, knowledge.

If successful application is the focus instead of mere knowledge acquisition, then skill-building and the process of learning move to the forefront. The students' context, both present and future, delineate the necessary methodologies, pedagogies, and foci.

Lastly, the socio-cultural, global context influence must be recognised, particularly in the Covid-19-impacted years. We cannot fully see all the impacts the global pandemic has had on our learners, but the changing landscape affords educators the opportunity to question the status quo and staid perspectives on teaching and learning. Lisa comments:

> What did we learn when we all went remote? Two faculty members I listened to today said they're not going back to face-to-face teaching. If we take the best of remote learning,

we're really talking about integrating the T-shaped skills into our curriculum. If we don't, the online medium won't be effective.

Collaboration, community, and peer-teaching are all possibilities when faced with massive disruptions to traditional educational systems.

Again, context matters and the T-shaped educator who integrates a SoTL approach attends to the various layers: the educator's experiences, the students' present and future contexts, the university or department's context, the community's context, and the "larger" socio-cultural context. They all matter and shape the educator's choices and behaviours that enhance learning.

Reflection questions for you to contemplate, from micro to mega perspectives:

What are your learners' context, your own context, and the larger socio-cultural, global context? How are you adapting, or not, to those realities?

How and why did you become an educator? How did that path impact what you do today?

What is your philosophy of teaching and learning? Why is it so?

What are your strengths and opportunities for growth in teaching and learning?

What partnerships, collaborations, and/or connections could be made to better leverage your students', community members', and your own learning?

Value 2. Valuing Peoples' Experiences and Perspectives

Related to seeing and leveraging context, the T-shaped educator with a SoTL approach values people's experiences and perspectives. They are learner-centred, responsive to learners' needs, and constantly searching for ways to empower them. An intercultural, interpersonal, and/or diversity, equity and inclusivity orientation is central to their work – not as something extra or added, but rather part-and-parcel to what they do because valuing people is foundational. This constructivist philosophy shifts the focus from teacher-driven instruction to one where learners actively construct knowledge through experiences and collaboration.

Learner-centred approaches emphasise the active participation and agency of students in the learning process. Associated pedagogies such as problem-based learning, inquiry-based learning, and collaborative learning activities encourage students to investigate, analyse, and solve problems both independently and collaboratively. These methods equip students with critical thinking, communication, and self-directed learning skills, fostering deeper understanding and lasting knowledge compared to traditional, teacher-centred methods. While not without its challenges, learner-centred pedagogies offer powerful frameworks for fostering engaged, motivated, and well-equipped learners who can thrive in a rapidly changing world. This philosophy shifts the focus from teacher-driven instruction to constructivism, where learners actively construct knowledge through experiences, reflection, and collaboration.

Since the learner and their current and future needs are her focus, Mayi (Author 4) teaches beyond her discipline to include necessary life skills. These skills include seeing patterns, scientific literacy, cooperative and collective learning, metacognition, and deep, critical reflection. She notes, "students learn to recognise themes and threads elsewhere, in everyday life, building on prior understanding to make sense of new information, lending the possibility of order even in

chaotic, unpredictable situations". She continues, "as my cell biology students strive to gain discipline mastery, they acquire skills and attitudes that prepare them for life beyond the classroom or the academe." By carefully scaffolding work and attending to both content and skills-based learning, Mayi empowers students to take ownership of their learning and the learning community that is created within the classroom. She also empowers them to transfer their skills well beyond the classroom into their lives and future professions. Importantly, she is responsive to students' changing learning needs, and her activities and pedagogies adapt accordingly. The same skills that she asks of her students, she implements herself as she teaches her courses, which leads to effective and impactful learning.

As a faculty developer, Corinne responds to her colleagues' needs. They need to advance their pedagogical effectiveness within the context of a reward system that demands published research and service to the institution. She finds a way to bridge with them by presenting SoTL as that way to advance both aims:

> I have been involved in a variety of induction-style workshops for academic staff who are new to teaching. Some of the participants have backgrounds in education (e.g., formerly teachers in primary school settings) while others are completely new to teaching at any level... Given the participants' range of experience as educators, I am careful to emphasise that SoTL may be something they're already doing, or just a small stretch from what they're already doing. Alternatively, this introduction of SoTL might be a seed planted today that they can come back to in the future once they have a clearer picture of their academic role.

SoTL allows both advanced and early-career educators to explore, methodologically, teaching and learning. Both Mayi and Corinne value their learners' perspectives and lived experiences, past, present and future. In doing so, they respond to their learners' contexts and needs, and choose pedagogies that will enhance their learning.

The T-shaped educator takes a constructivist approach to teaching rather than taking a positivist approach. In doing so, one can't help but foreground diverse experiences that can create more equitable environments. When we question whose stories are told (and not told), we reflect and act on the answers we find. This critical approach to teaching and learning forces educators to situate their courses in personal and social contexts that promote applicability to their present and future selves.

Amongst the research team, Lisa articulated most fully the DEIA (Diversity, Equity, Inclusion, and Anti-Racism – this term is common in the United States though the "A" has also stood for Accessibility, among other words) frame that is integral to the T-shaped educator with a SoTL approach. She explains:

> We all agree that Diversity, Equity, Inclusivity and Anti-Racism (DEIA) principles should not be simply added on as an "extra" to what we already do, but I would say that what we already do is dependent on where we already are with DEIA work. Our decisions in and out of the classroom have always been made with whatever worldviews we have developed based on the assumptions we have ingrained internally. How we approach teaching and learning (Did you assume that you are the teacher and the student is the learner?), what we do that first day in the classroom, comes with our DEIA and T-shaped framework already in play – it's a matter of where we are on the DEIA continuum and the

T itself. So the first step is awareness and then acknowledgement of where we are on these lines (are they straight, curved, coiled) and then thinking about where we want to be.

As Lisa voices, the DEIA frame or worldview, in many ways, prescribes how we perceive core issues in teaching and learning, and our ensuing behaviours. A DEIA framework doesn't mean we know it all – it just means we attend to our own and our learners' multiple contexts, adapt our pedagogical strategies to better address their learning needs, and see those (often skill-based) needs as much larger than our delineated disciplinary content or field. Importantly, they use their own self-awareness, metacognitive, and critical reflection skills to constantly assess their positionality and bridge with their learners' positionalities so that all may learn.

Reflection questions for you to contemplate, from micro to mega perspectives:

Is your classroom leaner-centred? If so, how and why? If not, why not?

How do you empower students to take ownership of their learning and of creating a (collective) learning environment?

How does "being responsive to learners' needs" affect you? Is it empowering to you or do you perceive such as burdensome - or some combination?

How does, or does not, a DEIA worldview prescribe the teaching you do and the learning that happens with your students?

Value 3. Ethic of Care

The T-shaped educator who integrates a SoTL approach to the "fabric of everyday life" (Poole & Chick, 2015, p. 2) does so with an ethic of care embedded in their daily practice of teaching. They teach beyond their narrow discipline and focus on "educating for empowerment, emancipation, and social responsibility" (Kreber, 2005, p. 402). According to our autoethnographic reflections, T-shaped SoTL educators aim for holistic, transformative learning in and out of the classroom. They focus on skills and competencies, not just content, including metacognitive skills, and transferal of learning that transcends disciplinary boundaries. They also tend to the well-being and development of the whole learner. Obviously, the tactics educators use are varied and diverse, but their insistence on integrated and applied learning leads them to focus on fostering well-rounded, contributing individuals and groups, and to use transformative learning-based teaching tactics.

Educators speak repeatedly of the need to have a "big picture" view of their learners as multifaceted individuals, to foster contributing future members of society and to implement transformative learning-based teaching tactics. For instance, Michelle states,

> I also see the institution's role as helping students to build the ability to be a person, in fact, person-able so that when students leave university, they know how to communicate, how to empathise, how to strategise and problem solve.

She uses the image of helping students construct a tool kit and fill a backpack:

> … [I help] my students to leave the higher tertiary institution setting with their own backpack that is filled with not only their disciplinary knowledge that they have acquired

within the walls of the institution but that is brimming with compassion, understanding, hands on experience, communication skills, empathy for others, stories of their own to share and an understanding of how to share them so that they too can go forward into the world, in their chosen vocation or career as person-able members of society.

Michelle is teaching towards a larger goal – to foster learning so as to create valuable, contributing, connected members of society. As such, she sees students on a trajectory and helps them acquire the skillsets necessary to develop as human beings.

Nina is equally emphatic in the need to teach to the whole person, and constructs a particular classroom environment to ensure such. She asserts:

> For my students to thrive I cannot simply teach them my discipline; I must attend to their needs holistically. I need to address the stress and anxiety of being in constant cognitive dissonance. I need to be explicit and transparent about the fact that all in-class activities are opportunities for collective feedback and scaffolded development of skills.

As such, Nina constructs a particular classroom:

> While admittedly I cannot replicate many of the learning situations from study abroad, I can and do treat my courses [on campus] as if they were a full immersion and experiential-learning semester for students. In particular, my courses are an immersive experience in decentralised, democratic, polyvocal, cooperative, and collaborative learning in which knowledge is constructed in community.

Therefore, students have lots of choice and freedom when leading discussion activities, writing group papers, designing portfolios that demonstrate their learning and growth, etc. As a result of Nina's classroom and teaching practices, students "understand the importance of community, team building, group work, and how to rely on and respect one another's strengths and equally our weaknesses in working together to make our world whole."

If holistic, transformative learning is part-and-parcel of an educator's internalised SoTL approach, their pedagogical practices reflect such. They teach well beyond their narrow discipline and focus on skills and competencies that will encourage development and growth. As such, the process of learning becomes much more important than the disciplinary acquisition of content. Earle emphasises this by employing a process-driven feedback approach that goes beyond simply correcting content or adhering to disciplinary boundaries. His feedback conversations centre around the student, encouraging transformation of application through targeted questions and prompts. This fosters the development of critical thinking (Scharff et al., 2023) by prompting students to analyse their work, evaluate its effectiveness, and consider alternative approaches. Furthermore, his feedback cultivates metacognitive skills by encouraging students to reflect on their learning process and identify areas for improvement. Additionally, he integrates strategies to strengthen writing skills by providing feedback on clarity, organisation, and argumentation. Through this multi-faceted approach, Earle's feedback goes beyond content mastery to equip students with the tools necessary for lifelong learning and personal growth.

Mayi, too, expands disciplinary concepts to focus on processes that transcend disciplinary boundaries and guide her transformative learning and teaching tactics. For instance, she expresses, "I posit that scientific literacy has the arguably more consequential role of equipping students for active, intelligent engagement in scientific issues that affect society at large." Thus,

she structures her course so that students implement that level of engagement via working groups:

> Every week, students work together to complete assignments to discover patterns and uncover connections between and among topics already covered in lecture and yet to come. They discuss, vet ideas, argue pros and cons, come to consensus. In succeeding weeks, these mind maps start to fill in and spread out with the integration of new concepts and take on a daunting complexity.

The working groups become a vehicle for critical engagement as well as support systems to process complex, interconnected ideas. Importantly, Mayi attends to the well-being and development of her students through metacognitive skills-based reflections and pulse checks. In doing so she can be responsive and adapt according to students' needs:

> With the open-ended question I post in the chat box at the start of each class, I get a sense of where students are at that moment, physically, emotionally, even cognitively. Listening to that collective cry, I respond with words of encouragement or with appropriate and positive action, such as extending a deadline or changing pace.

She goes on to say, "Reading these weekly reflections and those accompanying major writing assignments helps me to get to know my students as whole persons, facing challenges in other courses, juggling extra-curricular commitments, having lives, cares, and concerns outside of the classroom."

As the educators' reflections indicate, viewing students as "people in development" (instead of mere learners of disciplinary content) leads them to implement transformative learning pedagogies. They provide students with opportunities to practice communication, reflection and meta-reflection, critical thinking, analysis/synthesis, and team building skills. They guide and ask students to integrate and apply their learning, and to transfer their learning to larger contexts to actively engage in large, pressing issues that face our time.

Reflection questions for you to contemplate, from micro to mega perspectives:

How do you view students or learners? Is it more expansive than creating experts in your discipline? Why or why not?

How does your view of students impact your pedagogy and practice of teaching?

How does your view of students impact what skills you want learners to have and develop?

What pressures and demands come with viewing and teaching towards developing a whole human being? Why?

Value 4. Students as Contributors; Co-Learning; Reciprocal Learning

An important aspect of the T-shaped educator with a SoTL approach is creating a collaborative, collective-learning focused community. Scaffolded learning activities promote positive group dynamics, skills, and understanding. Educators use varied channels for communication, including feedback and generative dialogue, to construct a relationship-rich environment for learning. Importantly, students are seen as key contributors and agents in reciprocal learning. In essence,

the classroom becomes a community of practice (Wenger, 1998) for knowledge and skills to be created in community.

Constructivism emphasises active knowledge construction through individual and collaborative experiences (Piaget, 1972; Vygotsky, 1978), aligning with communities of practice (CoPs), which highlight social learning through interaction and collaboration (Wenger, 1998). CoPs create dynamic environments where individuals with diverse expertise engage in problem-solving and knowledge sharing (Brown & Duguid, 1991). This collaboration allows learners to refine their understanding, fostering a constructivist approach (Duffy & Jonassen, 1991). CoPs can be formal in classrooms or informal in professional settings (Lave & Wenger, 1991), facilitating constructivist learning by leveraging collective knowledge and diverse perspectives (Wenger-Trayner, 2014).

A community of practice focus enhances teaching practices, emphasising the importance of group activities and projects for skills acquisition. Corinne uses group contracts to promote positive dynamics: "I encourage students to generate group contracts to prevent conflict and set everyone up for success." Additionally, Corinne highlights how structured assessments provide feedback and scaffolding, allowing students to develop incrementally and build a strong foundation for future learning.

Feedback, too, allows educators to guide, and in some cases create a structure for increased dialogue. Earle noted that feedback wasn't constructively applied unless part of a larger process. He notes:

> Feedback has been important in not only developing pathways for learning but more functionally reforming the purpose and duality of the process. I have recognised the need for refining the language used to feedback and subsequently developed feedback conversations to foster progression of professional competencies and invite students into the reciprocal process of giving, receiving and acting upon feedback for learning.

As a result of the changes, Earle notes that "feedback now becomes a purposeful exchange of ideas, values, and experiences; a portal that invites one into conversation whilst simultaneously reflecting on use, impact, and value." Those conversations build bridges and connections between educator and learners, and advance learning.

Creating a community in which collective learning happens routinely can be challenging, depending on the cultural context. Students may be more amenable or more resistant to collaborative learning; nevertheless, the educators must stress the value of reciprocity and collective endeavours. One way to build community is to foster rich relationships amongst the students in the classroom, and via group work for students to build on those relationships to work together to accomplish a learning task. Mayi builds connections between her students by asking students to publicly share their ideas:

> To foster transparency and mutual trust, I ask students to post individual reflections visible to their group mates in response to weekly prompts to step back and comment on their learning experiences (such as when they completed their first essay, prepared and wrote the midterm exam) and to think about issues of agency and autonomy, of collaborative work and building community.

The shared prompts move implicit ideas into explicitly stated ones, all the while fostering connection and further prompting collective understanding.

Reflection questions for you to contemplate, from micro to mega perspectives:

How do you foster positive relationships in your classroom, amongst students and between the learners and yourself?

How do you set your students up for success? What tasks or learning do you purposefully scaffold, and why?

How could you provide more varied outlets for communication that enhance learning and build skills?

Value 5. Research as Integral (not extra)

Research as integral to their practice is yet another aspect central to a T-shaped educator with a SoTL approach. Educators ask 'big' questions and are spurred by critical inquiry. They read others' SoTL findings and pedagogical texts to enhance learning – both their own, and that of their learners. They find various ways to embed research into their teaching approaches. They use assessments to guide analysis and to make evidence-based decisions. They then make intentional revisions to their pedagogical practices. Ultimately, the T-shaped educator with a SoTL approach views research as integral to their work and to learning, and acts accordingly.

SoTL transcends mere teaching effectiveness. It embodies a systematic and reflective approach to enhancing students' learning experience. This concept, as defined by Boyer (1990), encompasses research, scholarship, and creative activity specifically dedicated to understanding and improving teaching and learning.

SoTL serves a multifaceted role within higher education. Firstly, it fosters continuous professional development for educators, encouraging them to critically examine their practices, experiment with innovative pedagogies, and engage in dialogues with peers. This reflective inquiry leads to deeper understanding of student learning needs and informs the development of more effective teaching methods. Secondly, SoTL contributes to a broader knowledge base within the educational field. By documenting and sharing their scholarly endeavours, educators contribute to the collective understanding of how students learn and how instructional practices can be optimised to foster their development. Ultimately, SoTL aims to transform educational practice by promoting evidence-based decision-making and promoting a culture of innovation within learning environments. This collective effort towards improving teaching and learning serves to enhance student success and contribute to the overall advancement of higher education.

Kreber (2005) notes that a shift in the focus of SoTL leads to asking "big" questions. Thus, they suggest the value of reflecting on the broader aims and objectives of undergraduate education. Rather than solely examining the methods or extent of student learning, they propose also scrutinising the content and structure of the curriculum itself. Key questions arise about what students are learning and the reasons behind it—specifically, what knowledge holds relevance today, and how it equips students to confront urgent societal, political, and environmental challenges.

Teaching and learning constantly pushes Nina to ask these larger questions, that in many cases require research and colleagues to answer. She comments,

> I have verified that most students thrive with a growth-oriented class community, while a few others do not. Observing this has led me to ask: What happens when a fixed mindset

or rigid worldview doesn't allow students to receive, or even perceive, collective learning? How do we co-develop academic and developmental skills at the same time, particularly when faced with vastly different resiliency skillsets? What support do educators need to teach the whole student and/or global learning, particularly under "duress" (pandemic) teaching and learning situations? What explicit and implicit support do students need to learn, grow, and thrive while at university and beyond? What helps students shift from an extremely individualistic mindframe to a more collective one, particularly in a learning context? In intercultural learning, research tells us that you can only aim for one level above where a person is or else they recede to earlier orientations. How do you differentiate effectively when in any given class you have a wide range of intercultural orientations? How does a fixed mindset or closed worldview impact an educator's approach to a learner-centred classroom? How do you do the "big ask" of the time and energy necessary to do this intensive type of learning, for students and educators?

The constant questioning encourages and is encouraged by critical inquiry. Often, those questions lead educators to start their own research projects, whether in the form of scholarly teaching or a formal SoTL study. Depending upon one's discipline, humanities for instance, the constant back and forth between 'big' picture questions and the 'small' details that provide the evidence is a constant conversation or flow; for others it might take more intentional practice to pull back and look at larger, almost existential, questions. Nevertheless, the intellectual curiosity, questioning, inquiry, and follow through allow research to be integral to one's teaching and learning.

As Zou and Geertsema (2020, p.609) assert, "teachers and students are researchers and co-learners, with teaching and research integrated through learning and knowledge construction". The integration of research can be seen in many variations: students as partners work where students help guide pedagogical inquiry and changes to the curriculum (Mercer-Mapstone et al., 2018), communities of practice where everyone contributes something to the collective learning, teaching observations by colleagues that then spur a small pilot critical inquiry study to solve a puzzling class dilemma, etc. The T-shaped educator integrates research into daily practices and mindframes; it isn't seen as something extra or above and beyond, but rather a part of the process of discovery to better understand and solve the complexities in learning.

Institutions that are fortunate enough to have professional developers, in particular faculty development (also known as educational development or academic development), lead the way in framing research and teaching as seamless companions. Sometimes educators perceive SoTL as yet another discipline or field in which one has to gain expertise, almost as if one needs to get another advanced degree to enter into it. Fortunately, faculty developers intervene and help change such a perception. Via workshops, Corinne helps her faculty to see that SoTL can be an extension of what they are already doing, and that they can combine teaching and research. She maintains:

> SoTL can enable them [faculty] to embed research in their teaching. In doing so, they can capitalise on the time and space afforded to them for research (20% for teaching-focused; 40% for balanced academics) while enhancing the educational experience for themselves and their students.

She goes on to explain, "I use the T-shaped model to show that SoTL doesn't have to be another thing for them to be doing on top of an already large workload; SoTL can enable them to embed research in their teaching". Corinne further provides concrete tactics to help staff reframe their mindframes to see research as integral. These include:

> Research-driven pedagogy: Instead of simply presenting research findings as separate entities, she encourages faculty to leverage research to identify specific teaching challenges in their courses. These challenges then become the springboard for further research, exploring potential solutions through SoTL practices.

> Data-driven decision making: SoTL doesn't stop at identifying challenges. Data collected through surveys, quizzes, and assessments informs the effectiveness of implemented solutions. This data-driven approach allows for continuous refinement of teaching methods based on evidence, not intuition.

> Student co-creation: Integrating research she argues doesn't have to be a solitary endeavour. Students can be involved in the research process, assisting with data collection or even participating in discussions that shape the direction of further exploration. This fosters deeper engagement with learning and a sense of ownership over their educational journey.

Educators often respond quickly to student needs, such as addressing world events in class or offering extra study sessions during stressful periods. While these immediate responses are important, deep learning and fundamental pedagogical shifts require a research or inquiry-based process. This can involve small-scale changes, like revising a problematic question or improving essay scaffolding, or larger-scale studies, such as investigating the impact of new teaching methods on student learning through formal research. The T-shaped educator, using a Scholarship of Teaching and Learning (SoTL) approach, bases decisions on evidence collected from student work and feedback, rather than relying on intuition. This research-driven process, common across academic disciplines, ensures that teaching evolves based on data, leading to more effective learning outcomes.

Reflection questions for you to contemplate, from micro to mega perspectives:

How do you conceptualise the role of critical inquiry, research and/or SoTL, in your teaching and in your discipline?

How does that conceptualisation impact how you teach? Why?

How might you be able to engage (more) with critical inquiry and/or SoTL in a meaningful way?

How do you implement a feedback loop and make evidence-based decisions and changes to your courses, curriculum, and/or teaching?

Connecting the Dots

The values underlying the T-shaped educator—context, valuing people's experiences, an ethic of care, students as contributors, and research as integral to teaching—synergistically interact to create impactful educational experiences. The five cardinal values of the T-shaped educator

connect to the Grand Challenges of SoTL and the SDGs to illustrate how higher education leaders can impact teaching and learning at various levels. We utilise auto-ethnographic reflections of our T-shaped model to demonstrate how daily teaching practices can foster significant changes in our world.

Firstly, recognising context addresses learners' diverse backgrounds and needs, aligning with SDG 4, which promotes equity, inclusion, and quality education. Understanding these contexts allows educators to enhance teaching practices to meet evolving learning environments (Scharff et al., 2023). At the micro level of the 4M Model, educators create inclusive and supportive environments.

Valuing people's experiences extends to the meso level, influencing institutional practices that foster continuous improvement and inclusivity (SDG 10). This learner-centred approach empowers students to participate actively in learning.

An ethic of care promotes holistic student development. At the macro level, educators engage in disciplinary scholarship and advocate for evidence-based policy changes, aligning with SDG 3's focus on well-being. Prioritising learner growth cultivates essential skills and competencies for societal success and transformative learning experiences.

Students as contributors reflect the collaborative spirit necessary for achieving the SDGs, particularly SDG 17, which focuses on partnerships. This approach fosters environments where knowledge is co-constructed, empowering students as agents of change and contributing to educational equity and sustainability globally.

Research as integral to teaching embodies the inquiry and innovation needed to address complex societal challenges. Educators engage in critical inquiry to enhance teaching practices and student outcomes, supporting the Grand Challenges by fostering continuous improvement and innovation in education.

Conclusion

The T-shaped model provides a landscape for conversations, both personal and collaborative, around changes in global Higher Education. This encourages a reshaping of learning outcomes and a move towards learner-centred objectives and a customised learning experience to better support individual learning journeys. The T-shape model repositions the individual within the institution towards understanding the lived versus learned experience thus moving towards holistic approaches to HE.

By examining our respective experiences of implementing the T-shaped model, we have uncovered five cardinal values. Our coming to this collaborative work from different disciplines and educational roles drives home the importance of context (Value 1) and valuing different perspectives and experiences (Value 2) in enacting a T-shaped education at the micro level of individual practitioners, and foreshadows the necessity for recognising the value of multiple perspectives for successful implementation at the meso level of the HE institution, the macro level of the field of teaching and learning, and ultimately, the mega level of the HE global stage.

Because the graduate should be world-ready, knowledgeable and skilled (vertical stroke of the T), and responsible, collaborative, and communicative (horizontal bar), we posit that our practice must embody an ethic of care that attends to the student as a whole person (Value 3). Essential

to that attention is the recognition that students are our partners, as co-learners and co-creators (Value 4). HE institutions recognise the importance of training graduates who are equipped to take on the world, who have that "backpack", as so imaginatively put by Michelle to make an impact in their respective professions (macro), and in the world (mega).

Finally, and no less importantly, given that circumstances change, and environments evolve, we need to continue to develop as individuals and institutions to be able to address challenges in the field and to achieve global sustainability. We propose that to foster that nimbleness, purposeful inquiry and research must be integral to our practice (Value 5), informing what questions to ask and how answers are put to the test.

The interconnectedness of the five cardinal values demonstrates the multifaceted nature of a T-shaped student, educator, and leader. By aligning with the SDGs and addressing the Grand Challenges, together we can make a tangible impact at all four levels of the 4M framework in HE, ultimately driving positive change in teaching and learning practices on a global scale.

This paper illuminates a path toward creating an educational landscape that aligns with contemporary challenges and strives to meet the evolving demands of the future. In doing so, we hope to contribute to the ongoing discourse on advancing pedagogical practices for holistic higher education in a constantly evolving and often difficult HE landscape.

Acknowledgements

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