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Coming Together: A Comprehensive Overview of the Transdisciplinary Perspectives of School Belonging

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Chapter XX

**Coming Together: A comprehensive overview of the transdisciplinary perspectives of
school belonging**

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Coming Together: A comprehensive overview of the transdisciplinary perspectives of school belonging

Interdisciplinary collaboration is necessary for the progression and solution of many social problems we face in society. Many research areas in academia are criticised for being siloed, but this is not a criticism that can be easily levelled at school belonging. There are many fields that provide input into school belonging. We see input from sociology, social psychology, economics, design, urban design and architecture, neuroscience, educational/school psychology, clinical psychology, inclusive education, behaviourism, and creative arts education – with each field offering its own set of unique insights which contribute to a nascent collective understanding of what school belonging is, what it should be, and how we can improve the experience of school belonging for students. To date, there is no published work that has encapsulated and integrated the salient work from different disciplines in the one body of work. This chapter aims to innovatively draw together perspectives of school belonging from a range of fields with the aim of exploring our commonalities, our differences and how we can work together to create stronger transdisciplinary growth and understanding in the field of school belonging.

Defining school belonging

School Belonging as a Sociological Concept

Belonging has a broad conceptual heritage which partly contributes to definitional challenges. Drawing on sociological understandings, belonging has antecedents in the concept of alienation which has been theorised as an individual's response to the perceived unequal social structures in which they are situated (Seeman, 1959). Mau (1992), in adapting Seeman's conceptualisation to the school context, applied the dimensions of powerlessness, meaninglessness, normlessness and social estrangement. In establishing the lineage between alienation and belonging, the dimension of social estrangement provides some shared ground. Socially estranged students have fragile or non-existent links to any peer or friendship group and low rates of participation in school activities (Mau, 1992). The concept of school membership emerged as sharing similar components to alienation with Smerdon (2002) developing a measure of perceived school membership consisting of belonging, commitment to the institution of school, and commitment to the academic requirements of school.

School Belonging in the Domain of Psychology

Psychological perspectives share similarities with the way school belonging is conceptualised in a theoretical and empirical sense. Several definitions of school belonging have been described across the literature including interchangeable terms (e.g., school connectedness; Lester et al., 2013; McNeely et al., 2002), and in school practices (Allen et al., 2018). A commonly reported definition is by Goodenow and Grady (1993) who reported a sense of school belonging as “the extent to which they [students] feel personally accepted, respected, included, and supported by others – especially teachers and other adults in the school

social environment” (p. 60). A qualitative meta-synthesis of student’s perspectives on school belonging highlighted the importance of students’ “feeling safe and secure in schools” (p. 1,422) and peer-to-peer relationships (Craggs & Kelly, 2018). Several psychological theories have been described across the literature in regard to school belonging. These include the belongingness hypothesis (Baumeister & Leary, 1995), Bowlby’s attachment theory (Bowlby, 1973), and self-determination theory (Ryan & Deci, 2000). A socio-ecological framework (Allen et al., 2016) of school belonging based on Bronfenbrenner’s (1979) ecological systems theory has also been proposed. A number of measures have been used to assess school belonging among student populations. These include the School Belonging Scale (SBS; Anderman, 2002), the Psychological Sense of School Membership (PSSM; Goodenow, 1993; Hagborg, 1998), and School Belongingness Scale (Arslan & Duru, 2016). Across the literature, there does not appear to be a gold-standard measure to assess school belonging. It is possible that the different measures used may stem from the variations in defining school belonging.

Social Psychology and School Belonging

The field of social psychology draws heavily from social identity theory (Tajfel & Turner, 1979) and self-categorisation theory (Turner et al., 1987). The social identity approach has become a cornerstone framework for social psychology, particularly for efforts to understand group processes and behaviour that relate to school belonging. The most central proposition of the social identity approach is that people’s sense of who they are is derived not only from their view of themselves as unique individuals (i.e., as ‘I’ or ‘me’ – their personal

identity), but also from the groups to which they belong and psychologically categorise themselves as members of (i.e., their social identities). Social identities can be broad (e.g., as an Australian, Indian, American), or narrower (e.g., as a member of a particular school, university, club). What is critical is the subjective sense of affiliation and self-definition in terms of group membership.

A key consequence of this is that the social identity approach has made a vital contribution to our understanding of belonging. A large body of research—spanning domains including business and organisations (van Knippenberg, 2000), health (Steffens et al., 2019), sport and exercise (Stevens, Rees & Polman, 2018), and, crucially, education (Mavor, Platow & Bizumic, 2017)—has focused on how the strength of one’s social identification impacts a person’s behaviours, experiences, and well-being. The psychological concepts of in-group and out-group behaviour can be powerful. In-group members can be biased in favour of the group’s position and by extension are not favourable to those classified as out-group members (Pettit & Lount, 2011). This key concept captures the degree to which one feels a strong and enduring psychological affiliation to, and defines themselves as a member of, a particular group. In education contexts, ‘school identification’ has thus often been adopted as a more specific term for the extent to which students feel, in social identity terms, a sense of belonging at their school.

A Sense of Belonging in Urban Education

From an urban education perspective, a sense of place is emphasised. As such, school belonging has been defined as that sense of being somewhere where you can be confident that you will fit in and be safe in your identity (Riley, 2017), a feeling of being valued (Flewit, 2017) and at home in a place (Yuval-Davis, 2006). The urban education perspective emphasises that belonging is as much relational as it is cultural and geographic. In a global context of “alienation and disengagement, and the possibilities of radicalisation,” schools need to offer a “safe and secure environment for young people” in which “they can feel they belong” (Riley 2017, p.65). This is particularly important in communities experiencing high levels of disadvantage or volatility.

Behaviour Analysis and School Belonging

Behaviour analysis provides a perspective on school belonging not readily visible in the academic literature. Behaviour analysis is a pragmatic science devoted to understanding and improving socially significant human behaviour that may also shed light on school belonging (Cooper, Heron & Heward, 2007). To date, the field has not put forth a unified and conceptually systematic account of a student’s sense of school belonging although the field has demonstrated a long interest in the scientific study of strategies for improving the social, behavioural, and academic development of all students. In behaviour analysis, a sense of school belonging may be conceptualised as a value, a set of behaviours, and/or an outcome.

The true meaning of school belonging may be found in the interaction between values, behaviours, and outcomes within a school community. Values without corresponding action by members of the school community are likely to be ineffective at promoting the full inclusion and active participation of all students. Actions that are not guided by values may fail to produce the type of outcomes that are deemed meaningful and important by members of the school community. This perspective acknowledges therefore that school belonging is *modifiable* in that it can be enhanced in a school setting through interventions and strategies.

School Belonging in Creative Arts Education

Creative arts education has also long accounted for belonging at school (Chappell et al., 2019) through process driven and inter-disciplinary aesthetic-affective pedagogies (Webster & Wolfe, 2013; Wolfe, 2013) that inherently account for creative and critical openings of affirmative difference and joyous affect. This is evidenced by a belonging that extends beyond the bell, where students congregate in the art-room or the music room at lunchtimes as well as outside of school hours (see Webster & Wolfe, 2013). Creative inclusive dialogues, affections, and interdisciplinarity remain core practices in creative arts education transferrable to other domains of learning. Aesthetic affective pedagogies of thinking-feeling (Massumi, 2015) inherent in arts education, account for an aesthetic mobilisation of affect that inspires innovative approaches for teachers, students, and researchers to undergo learning (Dewey, 2005) through seeing, doing, feeling that evokes situational interest (Tsai et al., 2008). Aesthetic and non-verbal communication should be scrutinised in education as both differential

and culturally coded (Hickey-Moody, 2017, p. 1084). This understanding enables a potential for creative dialogues that facilitate and foster deep understanding and student belonging at school.

School Belonging and the Economics of Education

The area of ‘economics of education’ may be the closest subject that can also help conceptualise ‘school belonging’ from a financial perspective (Dustmann et al., 2008; Hanushek & Welch, 2006). This field considers education as a form of investment in human capital. In this sense, school belonging can be viewed as an ‘output’ from the investment in education. Like other forms of investments, this also entails ‘returns on investment’ through productivity of human capital that is produced, as well as the ‘investment costs’ from the perspective of opportunity costs of ineffective educational programmes and social costs of the absence of school belonging (Dustmann et al., 2008; Lange & Topel, 2006).

It should also be considered that there is a cost to a rapid increase in rates of exclusion, alienation, and a sense of ‘not’ belonging in school that has led to mounting concerns about the mental health, well-being, and life chances of children and young people. This is widely accepted and acknowledged across disciplines (Chodkiewicz & Boyle, 2017). It is clear that the economics of education and the concept of school belonging are indelibly connected. Students with a low sense of school belonging have been shown to fail to thrive on factors such as positive youth development, including trusting others in the community, tolerance of ethnic

differences, trust in authorities, and taking on civic responsibilities (O'Connor et al., 2010, p. 24).

School Belonging in Design Education

Belongingness is a central part of tertiary education in design, but it is often not specifically termed as 'belonging'. Schools often describe themselves as a *vibrant, rich, pioneering community of creatives*, or use aggregative terms like *culture* and *social environment*. The membership to these creative social realities is conveyed through expressions such as being *part of, joining* or *immersing* in the community (Monash Art Design and Architecture, n.d.; Carnegie Mellon Design, n.d.). Based on their self-presentations, design academic communities are defined by a *common purpose* (e.g. "fostering social and environmental good", Parsons School of Design, n.d.), a *common practice* (e.g. "share interests, discourses, and ways of doing things", RMIT University School of Design, n.d.) and a *shared effort* (e.g. "we work together to create a social and supportive environment", (Umeå Institute of Design, n.d.). In such design communities, a student's sense of belonging is reinforced by a social environment that pays attention to, respects, appreciates and supports each learner - e.g. "students and staff who'll nurture, challenge and encourage you" (Monash Art Design and Architecture, n.d.); "candidates are supported and engaged" (RMIT University School of Design, n.d.); "classmates who offer encouragement, critiques, and opportunities for collaboration" (Carnegie Mellon Design, n.d. b).

One of the most explicit and rich vocabularies related to belongingness comes from Harvard University Graduate School of Design (n.d.), who have developed a ‘Diversity, Inclusion and Belonging’ framework in order to “be an example of a design community that can hold multiple identities and conflicting perspectives in an engaging and respectful way; one that is thoughtful of diversity and helps people understand how respect and acknowledgement of others allows us to be better design practitioners”.

A Neuroscience Perspective of School Belonging

Humans evolved working in extended family groups, where everyone knew everyone and understood the social and functional hierarchies that made their little troop work. To operate effectively in those groups, humans developed brains that run a complex set of processes designed to understand and conduct social functions. Those processes use many different brain regions, including some dedicated to helping us operate in social environments – the social brain (Johnson et al., 2005).

The purpose of the social brain is to help us *read* the minds of others (Changizi, 2009): We all signal, unintentionally and unconsciously, what we’re thinking, how we are feeling, and what we are most likely to do next. Those signals can be expressions on our face, our smell, and our movements, they can be what we say, and how we say it. Being able to detect those signals, and interpret them, is essential for normal social functioning. Our social brain provides

the tools for doing so unconsciously and automatically. In other words, our social brain allows us, with some degree of certainty, to predict the future behaviour of others.

We are best at predicting the future in environments where ambiguity and uncertainty is low. In social contexts, that means in environments where we know what is expected of us, and what to expect of others. In such environments we can most easily begin to add value to the group, and most easily be recognised for that value. When we detect that recognition, when others signal to us our value to them, belongingness develops.

In that context, school belonging is a microcosm of belonging generally. Schools are communities, and integration into the school community is equivalent to being integrated into an extended troop of known and understood individuals. There is common purpose, and predictability that allows individuals to feel safe and to belong.

The value of belonging to school

The importance of a sense of belonging in school has been well-articulated in the literature across all disciplines. The fact that school belonging has been linked to academic outcomes, student motivation, and absenteeism (Goodenow & Grady, 1993; Louis, Smylie, & Murphy, 2016) and has a strong association with other positive social outcomes, such as health and well-being (Putnam, 2000), makes it of particular high value to multiple fields interested in schools. Given the long-term outcomes in the literature associated with the psychological functioning and wellbeing of adults, most disciplines value a sense of school belonging in

young people (O'Connor et al., 2010; Steiner et al., 2019). In the field of clinical psychology, a low sense of school belonging is generally examined in the context of poor mental health and well-being specifically and it is widely acknowledged that a low sense of school belonging is strongly associated with depression, anxiety, and suicidal ideation (Allen et al., 2018; Wyman et al., 2019). These factors alone, make school belonging a relevant construct to all disciplines.

Feelings of safety and belonging are closely connected. For example, research in highly disadvantaged communities in Chile identified safety as a non-negotiable prerequisite for a sense of belonging. Principals argued that children needed to feel visible and valued—and 'loved' (Riley, Montecinos, & Ahumada, 2016, p. 7). Recent data from TIMSS (The international Study in Maths and Science) shows a strong link between children's sense of physical and emotional 'safety' in school – a key aspect of belonging – and their academic performance in maths and science (IEA, 2019).

Students' sense of belonging at school continues to be recognized as significant as it enhances student participation and successful trajectories post school. In the social sciences literature, belonging is also recognised with regards to student engagement (Solomonides, 2007; McGarrigle, 2013) however often there is less focus directly on belonging as a teachable entity within the pedagogy and curriculum assigned in the classroom. Dominant conceptions of belonging conceive that belonging pre-existed the student entering school and are derived from a psychoanalytical approach that grapples with the problem of how to fit a pre-identified

square shaped student into a pre-identified round hole that is school. The different professions have varying approaches to practising school belonging in an effective manner.

Creative arts frameworks differ from psychoanalytic approaches, by diffractively drawing on the new materialist notion of ‘intra-action’ (Barad, 2007, p.33) with contemporary affect theories (Massumi, 2015; Manning, 2016) where student belonging is not reducible to the individual student. We posit that it is the material-discursive processes of schooling as they are encountered that create belonging or not. New materialist thought accounts for ‘the unprecedented scale on which contemporary technologies, sciences and eco-crises produce ways of manipulating, living as and being affected by matter’ (Tianinen, Kontturi, & Hongisto, 2015, p. 5).

In design education, the concept of belonging is, again, seen as a collective endeavour rather than something which can be done individually with students. The importance of belonging mainly lies in its capacity to support collective creativity, problem solving, and decision making (see for example; Hennessy & Murphy 1999; Ledwith & Lynch 2017; Sanders 2001), which are deemed necessary to address social or technological problems that are too ‘wicked’ for a singular creative genius. Besides increasing the efficiency and effectiveness of the design process, the sense of belonging to a design team and to a design project is potentially relevant to increment design students’ engagement and motivation in the project (see, for example: Reid & Solomonides 2007; Kreitler & Casakin 2009; Garner & Evans 2015), trust in teammates and lecturers (see, for example: Watson, McIntyre & McArthur 2011; Holland et

al. 2007), engage in collective and mutual learning (see, for example: Turnbull, Littlejohn & Allan 2012; Chaves & Bittencourt 2018) and empathetically involve end users, clients and other stakeholders in design projects (see, for example: McDonagh, Thomas & Strickfaden 2011; Lam & Suen 2015; Brueggemann et al. 2017).

School belonging can be valued in various measures of outcome from an economic perspective as well. In the case of a Development Impact Bonds (DIB) ‘Educate Girls’ programme in India, the outcomes were measured in the form of student enrolment and learning outcomes such as literacy rates (Loraque, 2018). There are also cases where investments in education are given monetary or numerical values, either from the estimated future productivity output of the student or by the estimated savings that the government/public gains from not having to spend on programmes addressing social problems that result from school ‘disbelonging’. Additionally, there are also qualitative valuation of outcomes where numerical estimates cannot be used as a form of measure such as improvement in behaviour and attitude (Bloomgarden et al., 2014). These valuations are continuously evolving especially with the development of impact measurements from mechanisms such as social impact bonds (SIBs) and evidence-based policymaking.

There is, in neuroscience, a concept known as the “critical period”: Times during development of the brain during which experiences impact directly, immediately, and permanently on how processes and structures develop. Normal experiences are critical for

normal development. School belongingness is an important factor for supporting development of the social brain.

For example, because schools are communities, transitions between levels of school often represent transitions between communities, sometimes and for some students, with little social continuity. Disruption of community, especially chronic disruption of social bonds, presents, at the level of brain functioning, like a threat. The on-going disruption to feelings of belongingness that can arise after school transitions can impact on students like chronic physical threats unless social bonds in the new school form quickly, impacting physical and psychological health and other cognitive functions (Eisenberger & Cole 2012). In particular, perceived threat impacts creativity, imagination, and attention because in threatening environments cognitive and attentional resources are given over to the task of monitoring the environment more closely than otherwise is the case. In terms of social processing, cortical regions involved in monitoring the environment for threat also form part of the developing social brain. The potential to negatively impact learning, and psychological wellbeing is clear and has been explored by numbers of studies (for example Fu, et al. 2017; Gold, et. al. 2015). Importantly, effective signalling of the value of transitioning students to the new school community acts to ameliorate those impacts (Cooks, et. al. 2012).

Similarly, work with children of primary school age points to the importance of safe, nurturing environments on brain development, particularly for the development of Theories of Mind (ToM), and empathy (Gerdes, et al. 2011). In particular, safe social environments are

important for developing both ToM and empathy for children aged three to 12 years (Richardson, et al. 2018). After 12, during adolescence, more recent brain studies have shown changes in the patterns of activity in parts of the social brain (Blakemore, 2008). Those data suggest social functioning associated with belongingness remains critical through adolescence and into early adulthood.

The main issues of school belonging from transdisciplinary lenses

Adoption of School Belonging

While school belonging is known to deliver multiple benefits to young people ranging from academic success to enhanced wellbeing (Craggs & Kelly, 2018), recent sociological readings of belonging, challenge an unrestrained embrace of the concept as delivering unqualified benefits to all. School belonging is a sub-set of broader scholarly theorising within Youth Studies which is framing belonging within the context of identity, social change, inclusion, and temporal and spatial dimensions, and is characterised by ambiguity, fluctuations, and precarity (Habib & Ward, 2020). School belonging emerges from these perspectives as interacting with both individual and collective desires, dispositions and discourses, resulting in a non-linear, volatile and constantly negotiated process. This understanding of belonging requires school communities to reimagine how they enable this process, particularly for students whose attachments are etiolated and/or fragmented. When this does not happen, it can

be argued that it is because schools have failed to adopt practices and policies that maintain or increase a sense of school belonging in students.

This potential failure to adopt school belonging practices is also noted through behaviourist disciplines. School wide positive behaviour support (SWPBS) is a practical example of behaviour analysis in schools. SWPBS involves the application of principles of behaviour and learning in a school context to minimise or prevent problematic behaviour and to enhance educational outcomes for all students (Horner & Sugai, 2015). As well as this it can also help students build a sense of school belonging through equitable and fair interventions and practices. There are many factors that hinder the adoption and sustained implementation of SWPBS, and that may in turn negatively impact school belonging. The main issue is one of priorities. The predominate educational climate leans towards a strong emphasis being placed on the academic achievement of students (Hardy & Boyle, 2011; Greenberg et al., 2003) at the detriment of school wellbeing and there being an inclusive and belonging environment (Allen & Boyle, 2018; Boyle & Anderson, 2020).

Supporting Vulnerable Children

For a growing number of young people today, home and community are not fixed and schools represents one of the few points of continuity and stability in their lives. Children from disadvantaged communities are twice as likely as their more advantaged peers to feel they don't belong. For too many young people, school-life is a dispiriting or dislocating experience (Riley

& Rustique Forester, 2002). This becomes an economic concern in that students from low socioeconomic backgrounds are most at risk (OECD, 2017).

The main issue related to school belonging in the field of economics is arguably how the outcomes are defined and measured (Bloomgarden et al., 2014; Gertler et al., 2014). Another issue is on the efficiency of allocating resources for effective programmes or policies that address school belonging (Dustmann et al., 2008; Hanushek & Welch, 2006). As much of the school focus and expenditure is geared towards results the economic concerns therefore reinforce and maintain low priority funding for ensuring positive effective school belonging programmes thus benefiting vulnerable students.

Further economic concerns are present for young people who see themselves as ‘outsiders’ - the ones who don’t belong – or who are excluded from school are vulnerable to exploitation. Their access to education is limited and they are more likely to become caught up in crime. The disaffected or the excluded search for ‘belongingness’ elsewhere, finding it in many ways, including extremism (Roffey & Boyle, 2018), self-harming and gang membership. Knowledge about what is happening to young people in schools can be divided into a number of silos: inclusion, exclusion, safety, special needs, well-being, physical and mental health, and cyber bullying. These silos make it difficult to understand the broader picture and the ways in which schools’ practices shape young people’s sense of belonging or exclusion.

Urban education perspectives suggest that young people people's sense of *not* belonging in school is often reinforced by their experience of life in their community. For example, in the UK children from low-income families are four times more likely to be excluded than their more affluent peers (The Fair Education Alliance, 2017). These same young people are also more likely to experience the loss of public and relational space and the dismantling of communities.

Social Identity

Relative to other contexts (particularly business and health), research examining the consequences of social identification in school settings remains in its infancy, yet initial findings point to its benefits for both students' well-being and academic performance. For example, among almost 700 Australian schoolchildren, Bizumic et al. (2009) found that school identification was positively associated with students' self-esteem and positive affect, and negatively associated with their anxiety and depression. More recent research also speaks to the generalisability of these findings to non-western cultures, with Tong et al. (2019) finding evidence for correlations between school identification and reduced stress and depressive symptoms in a large sample (N=1,369) of Chinese schoolchildren.

With regard to academic outcomes, recent research found a positive association between school identification and Australian students' objectively assessed writing and numeracy skills (Reynolds et al., 2017). One of the reasons for this link may be that school

identification motivates students to engage more deeply with the content itself. In a university student sample, Bliu et al. (2011) found evidence that people with a stronger sense of student social identification were more likely to engage in ‘deep’ (as opposed to ‘surface’) learning.

Mental Health and Wellbeing

From a psychological perspective, one of the main issues related to school belonging is the potential impact on students’ mental health and well-being. School belonging has been found to predict students’ experience of mental ill-health including anxiety and depression (Arslan, 2020; Arslan et al., 2020; Lester et al., 2013; Pittman & Richmond, 2007). School belonging research shows that disruptions to belonging can have a detrimental impact on short- and long-term wellbeing with particular implications for students’ psychosocial adjustment and transition into adulthood (Steiner et al., 2019). Lester et al. (2013) found a reciprocal relationship between school connectedness and mental ill-health, although school connectedness was a stronger predictor of anxiety and depression. In particular, Arslan (2020) explored the relationship between school belonging constructs (i.e., social inclusion and social exclusion) and mental ill-health, and reported that feelings of loneliness mediated the relationships. Indeed, loneliness has been commonly associated with poor mental health (Matthews et al., 2018; Meltzer et al., 2013). These findings suggest loneliness may be an important factor to consider in examining school belongingness and the impact it may have on students’ mental health (Arslan, 2020).

Skills and competencies

As the literature discussed so far suggests, belongingness – being part of a safe and predictable community in which one is valued – is critical for normal social functioning and even more important for normal brain development from a neuroscience and psychological perspective. As such, skills like ToM, empathy, and so on all depend on children being able to operate in environments that are not threatening and are not neglectful. Children must be engaged, and have opportunities to test their developing skills, and to learn social functioning. That means schools must create environments where all students feel valued and safe. Doing so allows the social brain to develop alongside the cognitive skills typically the focus of learning. Certainly psychologists, and especially educational and developmental psychologists in schools, alongside educators have an important preventative role to play in teaching children social and emotional skills so that they are equipped with the competencies to engage with others and feel a sense of belonging to school.

The loss of school as we know it

During COVID-19, students experienced a variety of school disruptions, ranging from near-empty classrooms to full school closures. Children with parents unable to provide home-based learning may have had further disruptions. Still, it is the thousands of vulnerable children who rely on school for safety, social support and even breakfast programs who will feel the impact the hardest. While a sense of school belonging is a vital psychological need for all

children, school sometimes serves as the only place where the most vulnerable children belong. Their sense of belonging to school may be challenged even by the mere threat of losing access to school, as with the government enforced school closures. How can we belong to a place to which we have no physical access? Suddenly, schools that usually offer a predictable, universal and unerring place of belonging give way to uncertainty, undermining the manifest benefits they offer (Wyman et al., 2019). Digital technology (such as Zoom or Teams) has become much more ingrained in direct teaching in schools due to the COVID-19 pandemic. However, the evidence is not clear whether a sense of belonging can be achieved for students using this modality.

Addressing students who do not belong

Inclusive education

Studies in inclusive education, in a variety of disciplines, have addressed the overlap between inclusion and belonging in schools with some scholars describing inclusion as a layered and complex form of belonging (Kovač & Vaala, 2019). The ongoing exclusion of students based on some form of difference is a failure of both inclusion and belonging policies and practices in schools (Anderson & Boyle, 2019; Boyle & Anderson, 2020). Addressing these failures requires a back to basics evaluation of the everyday experiences of young people at school and a power sharing relationship between them and their school, matched by in-class

practices that are pedagogically, relationally, and culturally responsive and respectful (Berryman & Eley, 2019).

Linking theory to practice

There are many other ways that the theory and practice of place and belonging can be anchored more firmly in school communities through an urban education perspective.

(i) School-level practice: Collaborative research inquiry around the question ‘Is this school a place where everybody feels they belong? If not, what are we going to do about it?’ generates a sense of agency and belonging with student- researchers and teacher researchers (Riley, 2017).

(ii) System-level practice: Connecting the dots at a local school system level speeds up the process of change. Influenced by the work of Riley (2013, 2017, 2020), a number of school systems - such as Telford and Wrekin Council in England are moving away from traditional behaviour management approaches (with their over-emphasis on rewards and sanctions linked to behaviour) towards a more humanist, relational and universally inclusive approach (Telford & Wrekin, 2019).

(iii) Leadership: Understanding more about the ways in which school leaders shape the climate for belonging or exclusion through the lenses of leadership of ‘place’ and ‘caring leadership’ could yield rich rewards.

Leadership of place implies that leadership is a place making activity, highly dependent on the willingness of leaders to activate the physical and emotional spaces within schools; trigger the agency of staff and young people; and harvest the social capital that is all too frequently ignored in communities. For leadership of place to be enacted, it requires intentionality and an explicit theory of action that recognises the importance of developing agency and building social capital (Riley, 2020).

Caring leadership is a dynamic ministry. Principals who practise their ‘caring’ are present. In the all too busy world of principalship they are attentive to young people and what is going on in their life. They ask the ‘humble’ but authentic question and use their skills to cultivate caring communities (Smylie, Murphy, & Seashore Louis, forthcoming).

Social identity approach interventions have already shown benefits in business, health, and sports settings (e.g., Haslam et al., 2019; Slater & Barker, 2018). Although school-based work of this kind is in its infancy, recent research provides some clues regarding how gains in school identification may be achieved. Tong et al. (2019) and Reynolds et al.’s (2017) research is particularly informative in this regard, with both studies providing evidence for the role of school climate as an antecedent of school identification. Specifically, these studies suggest that schools which (a) adopt fair procedures, (b) foster strong staff-student relations, (c) instil a sense of shared mission, and (d) make academic expectations clear are most likely to imbue students with a strong sense of school identification.

We ask what ‘normal’ pedagogical practices do and emphasise that the production of belonging in classroom is collective and generated in events through affective-aesthetic relations and actions. We ask educators to scrutinise enacted pedagogies in order to not just accommodate, but positively enact valued difference in our classrooms. Pedagogical encounters, are always relational and in situ and thus interfere (diffract) with, and change affective intensities that can increase students’ sense of belonging. Affect is felt but this is not necessarily cognitive. Rather it is felt as a sense of dis/comfort, a sense of belonging or even a heart flutter. This illustrates the complexity of the aesthetic dimension as it involves affect, ‘emotions, social relationships, doing and undergoing (Dewey, 2005), feedback and further undergoing’ (Webster & Wolfe, 2013, p. 32).

From an economics perspective, the recent development on tackling the issue of school belonging can be seen in Social Impact Bonds (SIBs) and Development Impact Bonds (DIBs) that seek to improve the accessibility and quality of education (Bloomgarden et al., 2014; Loraque, 2018). SIBs and DIBs are mechanisms that raise capital primarily from the private sector to fund social intervention programmes. Returns are then provided to investors based on the achievement of outcomes or social impact. In doing so, there are different measurements of outcomes depending on the nature of the programme.

The theory underlying this is arguably the theory of change which looks at why a desired change is expected to happen from a particular input or particular context (Brook & Akin, 2019; Schindler et al., 2019). A methodology related to this is the social returns on

investment (SROI) which aims to provide a consistent quantitative measurement of understanding the impact or outcome of a programme (Then et al., 2017).

Within design education, interventions that contribute to a student's sense of belonging include the design of physical objects, digital systems, services, media, events and spaces in the educational environment. These mediate the social interactions between students, lecturers and other school staff and are typically brought about in one of two ways (but not necessarily mutually exclusive):

- *By design*; that is, designers being commissioned to design products, systems, services and infrastructure that help foster belonging. In this instance, the students and/or learning facilitators are end users and/or beneficiaries of the design incursions (see for example, Vota's (2020) group learning experience about collective social intelligence).
- *Through design*; that is, designing *with* people with the express aim of building community and individual agency through collective participation. In this approach, school belonging is supported and incremented during the design process itself, sometimes as a by-product of designing for other goals (see for example, CoMake Melbourne, 2020).

Addressing students who do not belong.

Comprehensive screening of school belonging as part of existing mental health screens conducted within schools has been proposed to help identify students at risk of, or experiencing a reduced sense of belonging, and could benefit from targeted psychological interventions to improve their mental health and well-being (Moffa et al., 2018). One example is programs such as the Youth Mental Health First Aid which can be administered by educators working with students. Jorm et al. (2010) conducted a randomised control trial (RCT) to examine the effectiveness of a Youth Mental Health First Aid course for teachers across secondary schools in South Australia. Fourteen schools were randomly divided into two conditions: i) those who received the Youth Mental Health First Aid training course, or ii) a waitlist group. Researchers found that teachers who engaged with the Youth Mental Health First Aid course reported increased knowledge about mental health difficulties in students and increased confidence in supporting students and colleagues, as well as reductions in elements of stigma (Jorm et al., 2010). Further, teachers who had completed the course were a better source of information related to mental health for students (Jorm et al., 2010).

Implications for practice and research

The malleability of the varied understanding and approaches towards belonging offers schools many opportunities to be co-creators with young people. Working together in shaping and creating new spaces and places in which multiple possible selves can be welcomed and find connections should be encouraged.

Economic perspectives guide us to consider impact measurement mechanisms to help ensure only effective school belonging programmes are implemented and allowed to continue. SIB and DIB programmes have provided a sound ‘proof of concept’ (Nabers, 2016; OECD, 2016). It allows for the improvement in response from the government and policymakers, as numerical valuations can be presented for their consideration. What can be changed is the emphasis on innovation in policymaking as well as improvements in stakeholder engagement.

A key contention of the social identity approach is that individual psychology (and thus, behaviour) is structured by one’s group memberships. This framework provides specific predictions about the ways that school belonging can (and does) shape children’s behaviours, while research underpinned by the social identity approach has yielded insights into how such belonging can be facilitated. A comprehensive account of school belonging requires the incorporation of the social identity approach.

Aesthetic-affective pedagogies of belonging should be instigated through creative arts practices across the subject domains as social mediation is created through aesthetic-affective production in situ. Belonging is not a binary term that is the opposite to nonbelonging but can be conceived as a sense of pulsing dis/comfort. The slash acts as a conjunction, to emphasise that dis/comfort (or non/belonging) is not opposite or separate to comfort but integral to it (Wolfe, forthcoming). Such an approach moves beyond phenomenological and interpretivist understandings of belonging to what is liminal, or felt within classroom encounters. Non-linguistic methods in both teaching and research open up possibilities for belonging through a

critical dialogical and material processional approach that is the making of the community with students themselves. Pedagogical encounters are central to identity through intersectional (unspoken and spoken) dialogues. Educators (and their students) are obliged to notice the crafting of what counts and is privileged as a normative student (Wolfe, 2017) in order to encourage a re/affirming entangled difference of bodies, cultures, religions and sexualities (Hickey-Moody, 2019) that is more inclusive. This account necessitates a prioritising of the senses, so often excluded in educational research, that assumes the sensuous as non-academic and in conflict with the conventional rationality of educational assemblages (Kenway & Youdell, 2011).

In order to improve student's sense of belonging at schools, there are a few implications to consider. In practice, supplementary training and support could be provided to teachers and other relevant employees within primary and secondary schools "to identify early warning signs of mental illness, trained in mental health first aid, and informed of the appropriate referral and response pathways for students at risk" (Arslan et al., 2020, p. 12). For example, Youth Mental Health First Aid training for teachers has been examined by Jorm et al. (2010) who found support for a two-day Youth Mental Health First Aid training course in improving teachers knowledge and confidence about mental health difficulties in students. The course included ways to help students who were experiencing mental health difficulties to use a mental health action plan (Jorm et al., 2010). Results indicated that the programme may be helpful in providing additional training and support to teachers to potentially recognise students

who may be experiencing mental health difficulties, and could benefit from additional support (e.g., mental health first aid response, school/educational psychologists, amongst others).

In research, studies are required to develop and examine psychological interventions such as cognitive-behavioural or positive psychology interventions targeted at improving mental health outcomes (e.g., depression, anxiety), difficulties related to feeling connected at school or reduce feelings of loneliness amongst students (Arslan, 2019; Arslan et al., 2020). Specifically, Matthews et al. (2018) suggested interventions aiming to reduce loneliness should focus on children or adolescents who experience bullying or social isolation from their peers, or who present with internalising problems. Some psychological interventions may attempt to increase social contact between students but not necessarily alleviate loneliness, as it tends to relate more to the quality of social contacts, rather than the quantity (Matthews et al., 2018). A meta-analysis on interventions targeting loneliness reported the most appropriate interventions were those aimed at addressing individual's maladaptive social cognitions Masi et al. (2011).

Slaten et al. (2016) suggest that while some psychosocial interventions to improve a sense of belonging have been conducted there is still a dearth of research in this this area. Future research is required to specifically investigate psychosocial interventions which are aimed at addressing school belonging in order to develop an evidence-base towards the types of interventions that may be beneficial in promoting students' sense of belonging in schools, with the aim of improving students' mental health and wellbeing.

There is a pressing need to bring the discussion together under one broad shared narrative - that of 'belonging'. This would enable policy-makers, practitioners and researchers to understand more about the entirety of young peoples' lives. A cross-disciplinary framework which looked at young people's lives through the dimensions of the social and relational; the cultural and historical; and the embodied and geographical (Cameron & Hauari, 2019) would support this.

Building on a transdisciplinary understanding

As sociology scholars continue to theorise school belonging, the broad-brush understandings of this concept are likely to benefit from greater nuance and a deeper embrace of the multi-faceted and malleable nature of what it means to experience belonging in the school setting. Schools can act now on current understandings of the concept which foreground belonging as agentic identity work (Habib & Ward, 2020) with young people storying themselves within the social milieu of their schools.

School Wide Positive Behaviour Support (SWPBS) offers a framework for building the capacity of schools to use evidence-based practices to support the social, behavioural, and academic development of all students. However, behaviour analysis has taught us that 'organisations do not behave, people behave' (Horner & Sugai, 2015, p. 82). Although SWPBS focuses on the whole school as the context in which intervention occurs, interventions derived from this framework focus on making environmental changes that alter the behaviour of

teachers and students in meaningful ways. A primary focus is on preventing disengagement (and maximising school belonging) for all students, and a secondary emphasis is on delivering individualised interventions and supports for students who are at risk for disengagement or who have already disengaged from school. Central to this framework is the adoption of systems (leadership, training, and coaching) to help teachers learn how to select, teach, and richly reinforce prosocial behaviours that may be illustrative of school belonging. This is particularly important in light of research indicating that quality of life variables (e.g., inclusion, friendship, choices) are less than optimal among students with disabilities and students with social, emotional, and behavioural problems (Huebner & Gilman, 2004; Sacks & Kern, 2008).

The social impact measurement method is a unique approach in putting a valuation on the economic and social outcome from school belonging (Bloomgarden et al., 2014; Gertler et al., 2014). From this perspective, monetary and numerical estimate can be put towards the resulting impact of school belonging. The limitation is that there is a danger in standardisation. Therefore, different situations and different contexts would require different outcome measurements. This can be addressed by developing a common framework that has a set of principles but allows for flexibility in measuring outcomes.

Evidence from university settings highlights the need for researchers to additionally consider the content of educational identities within efforts to enhance student outcomes by fostering their school identification. Here, research has shown that students' perceptions of the normative behaviours of other students (i.e., people with whom they share an educational

identity) impact their own behaviours. For instance, Smyth et al. (2015) found that, while university students' identification as a student in their field of study was associated with greater engagement in deep learning (mirroring the findings of Bliuc and colleagues, 2011), these researchers also found that this effect was markedly attenuated if, and to the extent that, students believed their peers were engaging in surface learning (see also Smyth, Mavor, & Platow, 2017). Similarly, identification with one's student peer group was only positively associated with studying intentions if studying was normative among group members (Cruwys, Gaffney, & Skipper, 2015).

These findings align with a fundamental proposition of the social identity approach: that categorising oneself as a group member is associated with a desire to co-ordinate one's own behaviours with those that are normative of other group members (Turner et al., 1987). As such, they further speak to the value of this framework in helping us to understand the consequences of belonging in educational contexts.

Artmaking in whatever medium allows for non-verbal and collective expression where students may negotiate differences and acceptance where 'the materiality of making is core to this process of expression' (Hickey-Moody, 2017, p. 1092). Belonging through transmissions of empathy is entangled within the creative arts subjects. It is nurtured through self/world-exploration, experimentation with technique, and the development of affirming risk-taking and critique. Space and time are provided for students to be, express, and to share. Making with material explorations is the language of art (Robinson, 2001), and is central to student

belonging in the art classroom where the goal of making should not be the object produced but rather the development of the maker (Garber, 2019) through the experience. This includes learning to feel-think with the materials of practice as experience (Ingold, 2013).

Design brings unique perspectives to interdisciplinary collaboration, being a form of research that is valued for its ability to continually and creatively challenge status-quo thinking (Gaver, 2012). It is generative, speculative, provocative, propositional, ad hoc, risky and opportunistic, targeting the user to create outcomes which are theories in themselves codified for a specific context (Haynes & Carroll, 2007). Above all, design develops situated ‘solutions’ that, whether successful or not, help ground theories through artifacts, systems and services that ultimately help negotiate pathways forward. In this way, design is provisional and occasionally right -- instead of being extensible and verifiable -- theory produced by research through design (RtD) tends to be contingent and aspirational (Gaver, 2012), developing solutions that are optimal for current situations and focusing on proposing a preferred state (Zimmerman, Stolterman & Forlizzi, 2010). With these principles in mind, design offers unique practice-based approaches to developing frameworks for belongingness through research practitioner reflection-in-action collaborative projects (Schön 1938).

Belonging in schools is clearly important for wellbeing as the onset of emerging mental illness often occurs between 7 to 25 years old (Kessler et al., 2007). In an Australian survey examining the prevalence of mental illness in children and adolescents aged 4 to 17 years, approximately one in seven children and adolescents experienced mental ill-health e.g. anxiety,

depression (Lawrence et al., 2015). The report outlined that child or adolescents mental illness appeared to impact slightly more on their family (19.5%) and school (17.6%) relative to their friends (12.4%) or themselves (14.4%; (Lawrence et al., 2015). In particular, children and adolescents experiencing depression was associated with more school absenteeism, followed by anxiety disorders (Lawrence et al., 2015). A sense of low belonging may be a signal to monitor and assess for emerging mental illness.

A psychological perspective provides an opportunity to take into consideration students' mental health and well-being (i.e., assessment, diagnosis, and treatment), alongside other factors related to their school environment (e.g., bullying, feeling lonely, or disconnected from peers etc.). There is, however, limited research investigating the potential efficacy psychological interventions aimed at improving students' sense of belonging at school. Thus, there is a need for future research to gain an understanding of evidence-based psychological interventions for improving students sense of belonging in schools.

While there is little work being done in neuroscience of school belongingness *per se*, there is a vast and growing literature on brain development in school-aged children, on neurodiversity (autism and so on), on social functioning, and on environments and stimuli that positively and negatively impact each. That work provides something of a novel scaffold for understanding and developing new practices and approaches. Understanding how brains function at different stages of development, and what types of stimulation and experiences are critical during development can inform transdisciplinary research in ways that have not yet

been explored. But, for those opportunities to be realised a common vocabulary and a shared understanding of what is meant by learning both need to be developed. In that context, there is real opportunity to advance transdisciplinary programs and project by beginning to unpack accepted paradigms using that shared vocabulary.

Concluding comments

School belonging has been fashioned as a unique niche area of research that has been shown to be critically important by a variety of disciplines and fields. Research to date has remained siloed in how school belonging has been discussed in the literature, yet, with so many interdisciplinary perspectives on the problem and potential solutions it is at a detrimental cost to young people if researchers and educators do not work collaboratively. Globally we are faced with a vast number of students who do not feel like they belong to school. Without a systematic response, we will continue to see this number grow. This chapter was the first of its kind to build transdisciplinary conversations concerned with school belonging and the authors hope that it is the beginning of new pathways of collaboration.

References

Allen, K, & Boyle, C. (2018). The Varied pathways to belonging. In K. Allen & C. Boyle (Eds.), *Pathways to school belonging: Contemporary research in school belonging* (pp. 1-6). Brill.

- Allen, K.-A., Kern, M. L., Vella-Brodrick, D., & Waters, L. (2018). Understanding the Priorities of Australian Secondary Schools Through an Analysis of Their Mission and Vision Statements. *Educational Administration Quarterly*, *54*(2), 249-274.
- Allen, K.-A., Vella-Brodrick, D., & Waters, L. (2016). Fostering School Belonging in Secondary Schools Using a Socio-Ecological Framework. *The Educational and Developmental Psychologist*, *33*(1), 97-121. <https://doi.org/10.1017/edp.2016.5>
- Arslan, G. (2019). School belonging in adolescents: Exploring the associations with school achievement and internalising and externalising problems. *Educational and Child Psychology*, *36*(4), 22-33.
- Arslan, G. (2020). School belongingness, well-being, and mental health among adolescents: Exploring the role of loneliness. *Australian Journal of Psychology*. <https://doi.org/10.1111/ajpy.12274>
- Arslan, G., Allen, K.-A., & Ryan, T. (2020). Exploring the Impacts of School Belonging on Youth Wellbeing and Mental Health among Turkish Adolescents. *Child Indicators Research*. <https://doi.org/10.1007/s12187-020-09721-z>
- Arslan, G., & Duru, E. (2016). Initial Development and Validation of the School Belongingness Scale. *Child Indicators Research*, *10*(4), 1043-1058. <https://doi.org/10.1007/s12187-016-9414-y>

- Anderman, E. M. (2002). School effects on psychological outcomes during adolescence. *Journal of Educational Psychology, 94*(4), 795-809. <https://doi.org/10.1037//0022-0663.94.4.795>
- Barad, K. (2007). *Meeting the universe halfway : quantum physics and the entanglement of matter and meaning*. Durham: Duke University Press.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological bulletin, 117*(3), 497.
- Berryman, M., & Eley, E. (2019). Student belonging: Critical relationships and responsibilities. *International Journal of Inclusive Education, 1-17*.
doi:10.1080/13603116.2019.1602365
- Bizumic, B., Reynolds, K. J., Turner, J. C., Bromhead, D., & Subasic, E. (2009). The role of the group in individual functioning: School identification and the psychological well-being of staff and students. *Applied Psychology: An International Review, 58*(1), 171-192. doi:10.1111/j.1464-0597.2008.00387.x
- Bliuc, A.-M., Ellis, R. A., Goodyear, P., & Hendres, D. M. (2011). The role of social identification as university student in learning: Relationships between students' social identity, approaches to learning, and academic achievement. *Educational Psychology, 31*(5), 559-574. doi:10.1080/01443410.2011.585948

Bloomgarden, D., Eddy, M., & Levey, Z. (2014). *Social Impact Bonds & Education in Latin America*

Bowlby, J. (1973). *Attachment and loss, volume 2: Separation*. Basic Books.

Boyle, C. (2007). The challenge of interviewing adolescents: Which psychotherapeutic approaches are useful in educational psychology? *Educational and Child Psychology*, 24(1), 36-45.

Boyle, C., & Anderson, J. (2020). Including into what? Reigniting the 'good education' debate in an age of diversity'. In C. Boyle, J. Anderson, A. Page, & S. Mavropoulou (Eds.), *Inclusive education: Global issues & controversies* (pp. 15-34). Brill. doi: 10.1163/9789004431171_002

Broadhead, S. (2018). Friendship, discourse and belonging in the studio: the experiences of 'non-traditional' students in Design Higher Education. In *Continuity and Discontinuity in Learning Careers* (pp. 17-28). Brill Sense.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Brook, J., & Akin, B. (2019). Using theory of change as a framework for examining community context and philanthropic impact. *Evaluation and Program Planning*, 77. <https://doi.org/10.1016/j.evalprogplan.2019.101708>

Brueggemann, M. J., Strohmayer, A., Marshall, M., Birbeck, N., & Thomas, V. (2017).

Reflexive practices for the future of design education: An exercise in ethno-empathy.

The Design Journal, 20(sup1), S1260-S1269.

Cameron, C. & Hauari, H. (2019). Foster Care Disruption and Belonging. Institute of

Education: Thomas Coram Research Unit.

Carnegie Mellon Design (n.d. a). International Network.

<https://www.design.cmu.edu/content/international-network>

Carnegie Mellon Design (n.d. b). Campus and facilities.

<https://www.design.cmu.edu/content/campus-and-facilities>

Changizi, M. (2010). The Vision Revolution: How the Latest Research Overturns Everything

We Thought We Knew About Human Vision. Benbella Books: Dallas.

Chappell, K., Hetherington, L., Keene, H. R., Wren, H., Alexopoulos, A., Ben-Horin, O., . . .

Bogner, F. X. (2019). Dialogue and materiality/embodiment in science|arts creative pedagogy: Their role and manifestation. *Thinking Skills and Creativity*, 31, 296-322.

doi:10.1016/j.tsc.2018.12.008

Chaves, I. G., & Bittencourt, J. P. (2018). Collaborative learning by way of human-centered

design in design classes. *Strategic Design Research Journal*, 11(1), 27-33.

Chodkiewicz, A. R., & Boyle, C. (2017). Positive psychology school-based interventions: A reflection on current success and future directions. *Review of Education, 5*(1), 60-86. doi: 10.1002/rev3.3080

CoMake Melbourne (2020). <https://comakemelbourne.wordpress.com/>

Cooks, J.E., Purdie-Vaughns, V., Garcia, J., & Cohen, G.L. (2012). Chronic threat and contingent belonging: Protective benefits of values affirmation on identity development. *Journal of Personality and Social Psychology, 102*, 479-496.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Pearson.

Craggs, H., & Kelly, C. (2018). Adolescents' experiences of school belonging: A qualitative meta-synthesis. *Journal of Youth Studies, 21*(10), 1411-1425. doi:10.1080/13676261.2018.1477125

Cruwys, T., Gaffney, A., & Skipper, Y. (2017). Uncertainty in transition: The influence of group cohesion on learning. In K. I. Mavor, M. J. Platow, & B. Bizumic. (Eds.). *Self and Social Identity in Educational Contexts*. Routledge.

Dewey, J. (2005). *Art as experience* (Trade pbk. ed.). New York: Perigee Books.

Dustmann, C., Fitzenberger, B., & Machin, S. (2008). *The Economics and Training of Education*. Springer.

Eisenberger NI, & Cole SW (2012). Social neuroscience and health: neurophysiological mechanisms linking social ties with physical health. *Nature neuroscience*, 15 (5), 669-74
PMID: 22504347

Farkas, M. S., Simonsen, B., Migdole, S., Donovan, M. E., Clemens, K., & Cicchese, V. (2012). Schoolwide positive behavior support in an alternative school setting an evaluation of fidelity, outcomes, and social validity of tier 1 implementation. *Journal of Emotional and Behavioral Disorders*, 20, 275-288.

Garber, E. (2019). Objects and New Materialisms: A Journey Across Making and Living With Objects. *Studies in Art Education*, 60(1), 7–21.

Garner, S., & Evans, C. (2015). Fostering motivation in undergraduate design education. In Tovey, M. M. (Ed.). (2015). *Design pedagogy: Developments in art and design education*. Ashgate Publishing Ltd.

Gerdes, K.E., Segal, E.A., Jackson, K.F., & Mullins J.L. (2011) Teaching empathy: A framework rooted in social cognitive neuroscience and social justice. *Journal of Social Work Education*, 47, 109-131. DOI: 10.5175/JSWE.2011.200900085

Gold, A.L., Morey, R.A., & McCarthy, G. (2015). Amygdala–Prefrontal Cortex Functional Connectivity During Threat-Induced Anxiety and Goal Distraction. *Biological Psychiatry*, *77*, 394-403.

Goodenow, C. (1993, 1993/01/01). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, *30*(1), 79-90. [https://doi.org/10.1002/1520-6807\(199301\)30:1](https://doi.org/10.1002/1520-6807(199301)30:1)

Goodenow, C., & Grady, K. E. (1993). The Relationship of School Belonging and Friends' Values to Academic Motivation Among Urban Adolescent Students. *The Journal of Experimental Education*, *62*(1), 60-71. <https://doi.org/10.1080/00220973.1993.9943831>

Hagborg, W. J. (1998). An investigation of a brief measure of school membership. *Adolescence*, *33*(130), 461.

Hanushek, E. A., & Welch, F. (2006). *Handbook of the Economics of Education, Volume 1* North Holland.

Hardy, I., & Boyle C. (2011). My School? Critiquing the abstraction and quantification of education. *Asia-Pacific Journal of Teacher Education*, *39*(3), 211-222. <http://dx.doi.org/10.1080/1359866X.2011.588312>

Harvard University Graduate School of Design (n.d.). Commitment to diversity, inclusion, and belonging. <https://www.gsd.harvard.edu/commitment-to-diversity-inclusion-and-belonging/>

Hennessy, S., & Murphy, P. (1999). The potential for collaborative problem solving in design and technology. *International journal of technology and design education*, 9(1), 1-36.

Hickey-Moody, A., & Willcox, M. (2019). Entanglements of Difference as Community Togetherness: Faith, Art and Feminism. *Social Sciences*, 8(9).
doi:10.3390/socsci8090264

Hickey-Moody, A. C. (2017). Arts practice as method, urban spaces and intra-active faiths. *International Journal of Inclusive Education*, 21(11), 1083-1096.
doi:10.1080/13603116.2017.1350317

Holland, R., Kim, B., Kang, B., & Borja de Mozota, B. (2007). Design education for successful cross-functional cooperation in NPD. In DS 43: Proceedings of E&PDE 2007, the 9th International Conference on Engineering and Product Design Education, University of Northumbria, Newcastle, UK, 13.-14.09. 2007.

Horner, R. H., & Sugai, G. (2015). School-wide PBIS: An example of applied behavior analysis implemented at a scale of social importance. *Behavior Analysis in Practice*, 8(1), 80-85.

- Horner, R. H., Sugai, G., & Anderson, C. M. (2010). Examining the evidence base for school-wide positive behavior support. *Focus on Exceptional Children, 42*, 1-14.
- Huebner, E. S., & Gilman, R. (2004). Perceived quality of life: A neglected component of assessments and intervention plans for students in school settings. *California School Psychologist, 9*, 127–134.
- Ingold, T. (2013). *Making: Anthropology, archaeology, art and architecture*. Routledge.
- Johnson, M. H., Griffin, R., Csibra, G., Halit, H., Farroni, T., de Haan, M., Tucker, L. A., Baron-Cohen, S., & Richards, J. (2005). The emergence of the social brain network: evidence from typical and atypical development. *Development and psychopathology, 17*(3), 599–619. <https://doi.org/10.1017/S0954579405050297>
- Johnston, J. M. (2014). *Radical behaviorism for ABA practitioners*. Cornwall-on-Hudson, NY: Sloan Publishing.
- Jorm, A. F., Kitchener, B. A., Sawyer, M. G., Scales, H., & Cvetkovski, S. (2010). Mental health first aid training for high school teachers: a cluster randomized trial. *BMC Psychiatry, 10*, 1-12.
- Kenway, J., & Youdell, D. (2011). The emotional geographies of education: Beginning a conversation. *Emotion, Space and Society*(4), 131-136.

- Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., , Lee, S., & Ustun, T. B. (2007). Age of onset of mental disorders: A review of recent literature. *Curr Opin Psychiatry*, 20(4), 359-364.
- Kovač, V. B., & Vaala, B. L. (2019). Educational inclusion and belonging: A conceptual analysis and implications for practice. *International Journal of Inclusive Education*, 1-15. doi:10.1080/13603116.2019.1603330
- Kreitler, S., & Casakin, H. (2009). Motivation for creativity in design students. *Creativity Research Journal*, 21(2-3), 282-293.
- Lam, Y. Y., & Suen, B. Y. S. (2015). Experiencing empathy in design education through community engagement. *International Journal of Continuing Education and Lifelong Learning*, 7(2), 53.
- Lange, F., & Topel, R. (2006). The Social Value of Education and Human Capital. In K. J. Arrow & M. D. Intriligator (Eds.), *Handbook of the Economics of Education* (Vol. 1, pp. 865): North Holland.
- Ledwith, A., & Lynch, R. (2017). How design education can support collaboration in teams. In DS 88: Proceedings of the 19th International Conference on Engineering and Product Design Education (E&PDE17), Building Community: Design Education for a Sustainable Future, Oslo, Norway, 7 & 8 September 2017 (pp. 014-019).

- Lester, L., Waters, S., & Cross, D. (2013). The Relationship Between School Connectedness and Mental Health During the Transition to Secondary School: A Path Analysis. *Australian Journal of Guidance and Counselling*, 23(2), 157-171. <https://doi.org/10.1017/jgc.2013.20>
- Loraque, J. (2018). Development Impact Bonds: Bringing innovation to education development financing and delivery. *Childhood Education*, 94(4), 64-68. doi:10.1080/00094056.2018.1494454
- Louis, K. S., Smylie, M., & Murphy, J. (2016). Caring leadership for schools: Findings from exploratory analyses. *Education Administration Quarterly*, 52(2), 310-348. <https://doi.org/10.1177/0013161X15627678>
- Meltzer, H., Bebbington, P., Dennis, M. S., Jenkins, R., McManus, S., & Brugha, T. S. (2013). Feelings of loneliness among adults with mental disorder. *Social Psychiatry and Psychiatric Epidemiology*, 48(1), 5-13. <https://doi.org/10.1007/s00127-012-0515-8>
- Moffa, K., Dowdy, E., & Furlong, M. J. (2018). Does Including School Belonging Measures Enhance Complete Mental Health Screening in Schools? In *Pathways to Belonging: contemporary research in school belonging* (pp. 65-81). Brill.
- Manning, E. (2016). *The Minor Gesture*. Duke University Press.

Masi, C. M., Chen, H. Y., Hawkley, L. C., & Cacioppo, J. T. (2011, Aug). A meta-analysis of interventions to reduce loneliness. *Pers Soc Psychol Rev*, 15(3), 219-266.
<https://doi.org/10.1177/1088868310377394>

Massumi, B. (2015). *Politics of affect*. Cambridge, UK ; Malden, MA: Polity.

Matthews, T., Danese, A., Caspi, A., Fisher, H. L., Goldman-Mellor, S., Kopa, A., Moffitt, T. E., Odgers, C. L., & Arseneault, L. (2018). Lonely Young Adults in Modern Britain: Findings From an Epidemiological Cohort Study. *Psychological Medicine*, 49, 268-277.
<https://doi.org/10.1017/>

Mavor, K. I., Platow, M. J., & Bizumic, B. (2017). *Self and Social Identity in Educational Contexts*. Routledge.

Mau, R. Y. (1992). The validity and devolution of a concept: Student alienation. *Adolescence*, 27(107), 731-741.

McDonagh, D., Thomas, J., & Strickfaden, M. (2011). Empathic Design Research: Moving Towards a New Mode of Industrial Design Education. *Design Principles & Practice: An International Journal*, 5(4).

McGarrigle, J. (2013). Exploring student engagement and collaborative learning in a community-based module in fine art. *Irish Journal of Academic Practice*, 2(1), 1.

McNeely, C. A., Nonnemaker, J. M., & Blum, R. W. (2002). Promoting school connectedness: Evidence from the national longitudinal study of adolescent health. *Journal of School Health, 72*(4), 138-146.

Monash Art Design and Architecture (n.d.). Why study at MADA?
<https://www.monash.edu/mada/future-students/why-study-at-mada>

Nabers, M. S. (2016). Social Impact Bonds: New Opportunities for Public-Private Partnerships. Retrieved from <http://economicdevelopment.org/2016/02/social-impact-bonds-new-opportunities-for-public-private-partnerships/>

O'Connor, M. (2010) Life beyond school: The role of school bonding in preparing adolescents for adulthood. *Independence, 35*(1), 24-28.

OECD. (2016). *Social Impact Bonds: State of Play & Lessons Learnt*. Retrieved from <https://www.oecd.org/cfe/leed/SIBs-State-Play-Lessons-Final.pdf>

OECD (2017). PISA Results 2015 (Volume III). https://www.oecd-ilibrary.org/education/pisa-2015results-volume-iii_9789264273856-en

Parsons School of Design (n.d.). About Parsons. <https://www.newschool.edu/parsons/about/>

Pettit, N. C., & Lount, R. B. (2011). Through whose eyes? The impact of identification on judgments of group status. *Group Processes & Intergroup Relations, 14*(4), 533–547.
<https://doi.org/10.1177/1368430210379005>

- Pittman, L. D., & Richmond, A. (2007). Academic and Psychological Functioning in Late Adolescence: The Importance of School Belonging. *The Journal of Experimental Education*, 75(4), 270-290. <https://doi.org/10.3200/jexe.75.4.270-292>
- Plattner, H. (2020). Design for Belonging. <<https://dschool.stanford.edu/resources/design-for-belonging>>.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and Schuster.
- Reid, A., & Solomonides, I. (2007). Design students' experience of engagement and creativity. *Art, Design & Communication in Higher Education*, 6(1), 27-39.
- Reynolds, K. J., Lee, E., Turner, I., Bromhead, D., & Subasic, E. (2017). How does school climate impact academic achievement? An examination of social identity processes. *School Psychology International*, 38(1), 78-97. doi:10.1177/0143034316682295
- Richardson, H., Lisandrelli, G., Riobueno-Naylor, A. et al. Development of the social brain from age three to twelve years. *Nature Communications*, 9, 1027. <https://doi.org/10.1038/s41467-018-03399-2>
- Riley, K. (2013). *Leadership of Place: Stories for Schools in the US, UK and South Africa*. Bloomsbury.

Riley, K. (2017). *Place, belonging and school leadership: Researching to make the difference*. Bloomsbury.

Riley, K. (2020). Transforming Schools into Places of Belonging, International Congress for School Effectiveness and Improvement. Monograph Series pp1-27,

Riley, K., Montecinos, C., & Ahumada, L. (2016). Effective Principals serving in high poverty schools in Chile: Managing competing realities (pp 1-8), *Procedia - Social and Behavioral Sciences*. Retrieved from <http://dx.doi.org/10.1016/j.sbspro.2017.02.181>

Riley, K., & Rustique-Forrester, E. (2002). *Why children lose interest in school and what we can do about it*. Sage.

RMIT University School of Design (n.d.). Master of Design overview. <https://www.rmit.edu.au/study-with-us/levels-of-study/research-programs/masters-by-research/master-of-design-mr235>

Robinson, K. (2001). *Out of our minds: Learning to be creative*. Wiley.

Roffey, S., & Boyle, C. (2018). Belief, belonging and the role of schools in reducing the risk of home-grown extremism. In K. Allen & C. Boyle *Pathways to school belonging: Contemporary research in school belonging* (pp. 149-166). Brill.

Ryan, R. M., & Deci, E. I. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and wellbeing. *American Psychologist*, 55, 68-78.

- Sacks, G., & Kern, L. (2008). A comparison of quality of life variables for students with emotional and behavioral disorders and students without disabilities. *Journal of Behavioral Education, 17*, 111–127.
- Sanders, L. (2001). Collective creativity. *Design, 6*(3), 1-6.
- Schindler, H. S., McCoy, D. C., Fisher, P. A., & Shonkoff, J. P. (2019). A historical look at theories of change in early childhood education research. *Early Childhood Research Quarterly, 48*, 146-154. doi:10.1016/j.ecresq.2019.03.004
- Schön, D. (1938). *The reflective practitioner*. New York, 1083.
- Scott, A., Jerome, K., & Thomson, S. (2001). Orienting Design Education: Implementing an Orientation Field Trip as an Introduction to Design Education. In *Proceedings of the ICSID Educational Seminar 2001 Seongnam* (pp. 62-68). Seongnam City, Korea.
- Seeman, M. (1959). On the meaning of alienation. *American Sociological Review, 24*(6), 783-791.
- Simonsen, B., & Sugai, G. (2013). PBIS in alternative education settings: Positive support for youth with high-risk behavior. *Education and Treatment of Children, 36*, 3-14. doi:10.1353/etc.2013.0030
- Slaten, C. D., Ferguson, J. K., Allen, K.-A., Brodrick, D.-V., & Waters, L. (2016). School Belonging: A Review of the History, Current Trends, and Future Directions. *The*

Educational and Developmental Psychologist, 33(1), 1-15.

<https://doi.org/10.1017/edp.2016.6>

Slater, M. J., & Barker, J. B. (2018). Doing social identity leadership: Exploring the efficacy of an identity leadership intervention on perceived leadership and mobilization in elite disability soccer. *Journal of Applied Sport Psychology*. doi:10.1080/10413200.2017.1410255

Solomonides, I. (2007). Design students' experience of engagement and creativity. *Art*, 6(1), 27–39.

Smerdon, B. A. (2002). Students' perceptions of membership in their high schools. *Sociology of Education*, 75(4), 287-305.

Smyth, L., Mavor, K. I., Platow, M. J., Grace, D. M., & Reynolds, K. J. (2015). Discipline social identification, study norms and learning approach in university students. *Educational Psychology*, 35(1), 53-72. doi:10.1080/01443410.2013.822962

Smyth, L., Mavor, K. I., & Platow, M. J. (2017). Learning behaviour and learning outcomes: The roles for social influence and field of study. *Social Psychology of Education*, 20(1), 69-95. doi:10.1007/s11218-016-9365-7

Smylie, M. A., Murphy, J. & Seashore Louis, K. (forthcoming). *The Practice of Caring School Leadership*. Corwin Press.

- Steffens, N. K., LaRue, C. J., Haslam, C., Walter, Z. C., Cruwys, T., Munt, K. A., . . . Tarrant, M. (2019). Social identification-building interventions to improve health: A systematic review and meta-analysis. *Health Psychology Review*, 1-28.
doi:10.1080/17437199.2019.1669481
- Steiner, R. J., Sheremenko, G., Lesesne, C., Dittus, P. J., Sieving, R. E., & Ethier, K. A. (2019). Adolescent connectedness and adult health outcomes. *Pediatrics*, 144(1), e20183766.
- Stevens, M., Rees, T., & Polman, R. (2018). Social identification, exercise participation, and positive exercise experiences: Evidence from parkrun. *Journal of Sports Sciences*, 37(2), 221-228. doi:10.1080/02640414.2018.1489360
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The Social Psychology of Intergroup Relations* (pp. 33-47). Brooks/Cole.
- Then, V., Schober, C., Rauscher, O., & Kehl, K. (2017). *Social Return on Investment Analysis: Measuring the Impact of Social Investment*. Palgrave.
- Tianinen, M., Kontturi, K.-K., & Hongisto, I. (2015). Movement, Aesthetics, Ontology. *Cultural Studies Review*, 21(2), 44-13.

- Tong, L., Reynolds, K. J., Lee, E., & Liu, Y. (2019). School relational climate, social identity, and student well-being: New evidence from China on student depression and stress levels. *School Mental Health, 11*(3), 509-521. doi:10.1007/s12310-018-9293-0
- Tsai, Y.-M., Kunter, Mareike., Ludtke, Oliver., Trautwein, Ulrich., Ryan, & Richard., M. (2008). What Makes Lessons Interesting? The Role of Situational and Individual Factors in Three School Subjects. *Journal of Educational Psychology, 100*(2), 460-472.
- Turnbull, M., Littlejohn, A., & Allan, M. (2012). Preparing graduates for work in the creative industries: a collaborative learning approach for design students. *Industry and Higher Education, 26*(4), 291-300.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the Social Group: A Self-Categorization Theory*. Blackwell.
- Umeå Institute of Design (n.d.). What is UID? <http://www.dh.umu.se/en/about-us/what-is-uid/>
- Vota, R.M. (2020). GALACSI: Gameful Lab for Collective Social Intelligence. <https://www.collectivesocialintelligence.org/>
- Watson, K., McIntyre, S., & McArthur, I. (2011). Trust and relationship building: Critical skills for the future of design education in online contexts. *Iridescent, 1*(1), 22-29.
- Webster, R. S., & Wolfe, M. (2013). Incorporating the Aesthetic Dimension into Pedagogy. *Australian Journal of Teacher Education, 38*(10).

Wolfe, M. J. (2013). Affective aesthetic pedagogy-interactions between teachers and students.

In B. Knight & R. V. D. Zwan (Eds.), *Teaching Innovations: supporting student outcomes in the 21st century* (pp. 116-127): Oxford Global Press.

Wolfe, M. J. (2017). Affective schoolgirl assemblages making school spaces of non/belonging.

Emotion, Space and Society, 25, 63-70.

Wolfe, M. J (forthcoming)

Wyman, P. A., Pickering, T. A., Pisani, A. R., Rulison, K., Schmeelk-Cone, K., Hartley, C., &

Brown, C. H. (2019). Peer-adult network structure and suicide attempts in 38 high schools: implications for network-informed suicide prevention. *Journal of child psychology and psychiatry*, 60(10), 1065-1075.

Yuval-Davis, N. (2006). Belonging and the politics of belonging, *Patterns of Prejudice*, 40 (3),

197– 214. <https://doi.org/10.1080/00313220600769331>

Zamberlan, L., & Wilson, S. (2015). Developing an embedded peer tutor program in design

studio to support first year design students. *Journal of Peer Learning*, 8(1), 5-17.