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Human connection and learning: Understanding and reflecting on the power of the social dimension for learning.

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(Walle, 2016)

ABSTRACT

Human connection is fundamental to learning. Through social interaction, we consciously and unconsciously share a range of states with others in the learning environment which assists us to understand one another and the experience. Underpinning this sense of connection is a phenomenon known as social synchrony – an innate capacity that allows us to connect with and understand others. The nature of this connection is represented in the quality of the learning environment, and is colloquially referred to as the 'vibe'. We've all sensed it in our own classes or our own learning experiences in the classroom, but does it impact learning and, if so, how can we manage it to promote learning? These were the practical questions as an educator that drove my initial research into human connection and learning in school contexts. Using a science of learning lens, I wanted to understand the factors that contribute to this 'vibe', the strategies that we could use to enhance it, and the indicators of its quality. The findings have not just informed our understanding of classroom learning environments in schools, but also the role of human connection in learning beyond the classroom, into the workplace, in online environments, and across the lifespan.

KEYWORDS

Human connection; learning; social synchrony; engagement; research translation

Introduction

Have you ever noticed that when you enter a classroom, some learning environments 'feel' more comfortable than others, with a palpable positive energy or 'vibe' in the space? I became intrigued by this phenomenon when I was a Head of Faculty working in Prep-Year 12 schools: walking into the classrooms of my colleagues I would get a sense of how connected the learners were to their teacher, to each other and to the learning experience. As I pondered this phenomenon in the classrooms of my colleagues, I wondered, 'Why do the classrooms of some teachers have this positive 'vibe' when others do not? Does it even matter? Does the classroom 'vibe' have any bearing on learner outcomes?' My intuition told me that it did, and that it was far more than an innate skill

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bestowed upon some teachers and not others. However, it was not a phenomenon that was widely considered, nor a process that we are trained to manage in our pre-service teacher training. My curiosity about the quality of the classroom 'vibe' was the spark that ignited my quest into human connection and learning. What was initially a practical curiosity about the power of human connection and learning has now become my passion and a driver of both my research and my practice. Using a science of learning lens – drawing insight from education, psychology and neuroscience – I have embarked on a journey to better understand the conscious and unconscious, tangible and intangible processes involved in human connection and learning, with the hope that this holistic understanding may lead to the development of practices that are applicable in a range of teaching and learning contexts. This paper will describe this journey and how it has driven my research and practice over the past six years and will present a reflection on my own learning through the process.

The palpable classroom 'vibe'

Upon entering a learning environment such as a classroom or lecture theatre, you can often sense an energy in the room. This palpable 'vibe' could be described as the barometer of the learning environment. When it is positive, you sense that the students are comfortable with one another and with the processes surrounding the learning. You might observe that students are collaborating, asking questions, smiling, and on-task. However, when the 'vibe' feels tense or cold, there appears to be a fragility in the atmosphere – there is less interaction, perhaps less on-task behaviour or a more ego-centric approach to learning. What struck me when I visited classrooms and noticed this 'vibe' was that it seemed to align with student-reported experience of the lesson, with their enthusiasm for the subject, and with their creativity and achievement. When the energy was positive, students seemed more enthusiastic about the learning experience, they were more persistent, collaborative, and passionate, and they demonstrated higher rates of academic growth. My 'hunch' about this perceived energy turned out to be true: the quality of the learning environment is a very powerful contributor to a range of learner outcomes. In fact, it has been shown to have a greater impact on learning outcomes than the individual traits of students (Shernoff, 2013). But what is this 'vibe', where does it come from, and can we engineer it to promote learning?

When we experience a positive 'vibe' in a learning environment, what we are sensing are connections: connections between learners, connections between learners and teachers, connections to the subject matter and content, and connections to the learning experience. The strength and quality of the connections that exist within this dynamic system are what determine the nature of the learning environment, and these connections are what underpin engagement (Allodi, 2010; Shernoff, 2013). Engagement is defined as a learner's sense of connection to what they are learning, how they are learning, and who they are learning with and from (Suarez-Orozco et al., 2010). Engagement is fundamental to learning, and the quality of the learning environment has been shown to be the most influential variable affecting the level of engagement in adolescents (Allodi, 2010; Shernoff, 2013). Engagement is a multi-dimensional construct involving the sharing of cognitive, emotional, physiological and behavioural states (Fredricks, Blumenfeld, & Paris, 2004; Suarez-Orozco et al., 2010). Neurologically it is also evident in the sharing of brain states - the saying of 'being on the same wavelength' actually resonates with the neurological evidence (Dikker et al., 2017; Holper et al., 2013)! Engagement and the resulting sense of connection is facilitated by social interaction. During social interaction a chain reaction of conscious and unconscious social information is activated: an explicit or implicit social signal is presented such as a facial expression, posture, prosody, or an eye gaze, and this is followed by a response from the interacting partner, for example, mirroring a facial expression, avoiding a stimulus, imitating vocal tone, or turning gaze to see or avert (de Gelder & Hortensius, 2014; Frith & Frith, 2008; Wheatley et al., 2012). These actions and their associated emotions or thoughts are embodied by the interacting partner, allowing them to understand and feel what the other is feeling (Cacioppo & Cacioppo, 2012). These processes are

what facilitates the sharing of states. A positive classroom 'vibe' appears to involve the widespread sharing of connection – a sense of collective engagement or the sharing of states across the group, facilitated through social interaction. This sharing of states is known as social synchrony and is an innate capacity to communicate and connect with others on a wider scale.

Social synchrony in the learning environment.

Through social interaction, the cognitive, emotional, behavioural and physiological states of others can be shared, allowing groups of people to 'tune in' or 'synchronise' with each other, developing mutual understanding and a sense of connection (Farmer et al., 2016; Rodriguez & Solis, 2013; Wheatley et al., 2012). Social synchrony involves the integration of neurological, psychological, physiological and emotional systems to provide an embodied socio-cultural understanding of others, their environment and the interactions that occur within it (Dumas et al., 2010; Rodriguez, 2012; Wheatley et al., 2012). It has evolved to support the fundamental human capacity for social interaction and understanding. In the classroom context, these integrated conscious and unconscious processes facilitate the sense of collective connectedness we experience when we sense that positive 'vibe' (Lakin et al., 2008; Wheatley et al., 2012).

Expert teachers demonstrate an innate capacity to create social synchrony in their classrooms, intuitively and deliberately drawing upon a breadth and depth of knowledge, awareness, and skill to engage learners (Rodriguez, 2012; Yates & Hattie, 2013; Watanabe, 2013). However, articulating how they do this is challenging due to the complexity and range of innate and intuitive pedagogical skills (Duffy et al., 2009; Rodriguez, 2013; Watanabe, 2013). But it is a challenge worth pursuing as a possible social approach to addressing disengagement. Student *dis*engagement – particularly in the middle years of schooling - is a common frustration for teachers of all experience levels (Angus et al., 2009; Sullivan et al., 2014). Commonly, attempts to address classroom disengagement tend to focus on individual student responsibility, resulting in temporary or less than satisfactory results (Sullivan et al., 2014). Instead, it is suggested that approaches consider the wider social construct of the classroom and seek to approach disengagement from the perspective of a shared sense of connection (Sullivan et al., 2014).

Conditions that promote connection

Recognising the correlations between classroom engagement and social synchrony (Dikker et al., 2017), my initial research hypothesised that if we could better understand how to facilitate the development of wider connection in the classroom we may be able to articulate how to engineer positive, engaged classroom 'vibes', promote engagement, and contribute to better outcomes for students. I wanted to investigate the experience of positive learning environments from the perspective of teachers and high school students. Using a science of learning lens, I wanted to know what conscious and unconscious *factors* influenced connection in the classroom, what deliberate and innate *strategies* teachers and students used to create connection, and what the verbal and non-verbal *indicators* of connection were. Furthermore, I wanted to know if these components could be articulated in a way that could be meaningful and useful for other teachers, and support the development of connected, positive learning environments. A central premise of my research was that through the deliberate management of personal and behavioural processes at individual and group levels, teachers can manage the quality of the learning environment and engineer a positive 'vibe' that enhances outcomes and experiences for students, and for themselves.

The conditions that promote human connection and a positive 'vibe'

In a study with secondary school teachers and students we found that the conditions for creating a positive classroom 'vibe' can be framed through utilising interpersonal and pedagogical practices that promote a sense of *familiarity* with others and the learning experience, positive *affect*, the experience of *competence* in oneself and others, and opportunities for *student voice and choice* (see MacMahon, Carroll, & Gillies, 2020).

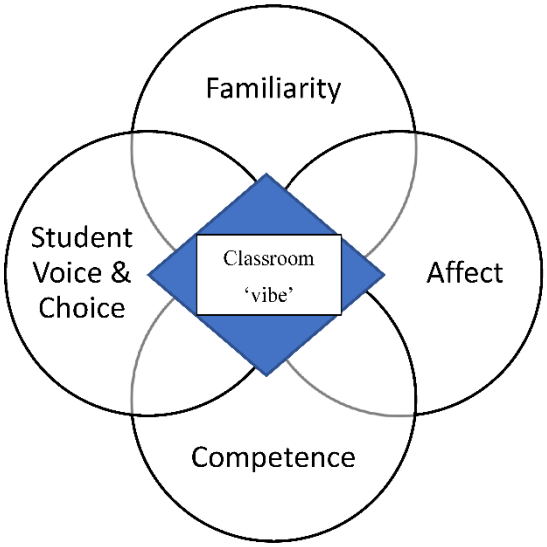

Figure 1: The four domains of the Social Synchrony Matrix: Familiarity, Affect, Competence, Student Voice and Choice.

The four domains of Familiarity, Affect, Competence and Student Voice and Choice (FACS) (see Figure 1) became the basis of what we termed the Social Synchrony Matrix: a tool to support teachers to plan for, action, monitor and reflect on the levels of connection in the classroom. This tool is a synthesis of the findings from my study and the science of learning literature on human connection and learning. The matrix provides a self-regulatory framework for teachers to be more metacognitive about the level of connection in their classrooms. The Social Synchrony Matrix was iteratively trialled and revised with teachers across Years 1 to Year 11 and was found to be a valuable tool for designing, delivering, monitoring and reflecting on the quality of the classroom 'vibe'. My thesis demonstrated that many of the intuitive and deliberate practices that promote social synchrony in the classroom, and that contribute to a positive classroom vibe, can be articulated into a useful, practical tool for teachers.

Human Connection in Adult Learning

Initially, I had anticipated that this research – and the learning I was doing as part of the process – would be relevant to Prep–12 classroom contexts. However, the more I engaged with the science of human connection and learning, the more I came to realise that the real and perceived sense of human connection played a fundamental role in the quality of the 'vibe' in any learning environment. I found myself reflecting on my own practice as a University lecturer and leader of teacher professional learning, and more fully appreciating the role and potential of the social dimension in adult learning. The role of human connection in adult learning has now become a central tenant of our Science of Learning Research Centre (SLRC) model of research translation.

Supporting Research Translation through Human Connection and Learning

Research translation is the process underpinning how effectively research is translated and disseminated into practice. It also involves the development and evaluation of translation strategies, contributing to the knowledge and evidence around the translation process itself (Palinkas & Soydan, 2011). The SLRC aims to impact learner outcomes through contributing to the knowledge base of evidence about learning. Therefore, the process of translation is fundamental to the work of the science of learning. The role of the SLRC Research Translation Team, which I manage, is to interpret findings from the multi-disciplinary field of the science of learning into accessible and usable knowledge for teachers and to support research impacting practice and learner outcomes. Many approaches to research translation are one-way – from research to practice (Green et al., 2009). However, these models are largely ineffective when it comes to impacting practice as they do not consider the unique school and classroom contexts of individual educators, or their existing knowledge and expertise (Fischer, 2009; Joram et al., 2020; Lysenko et al., 2014; Palinkas et al., 2017). In addition to context, other factors that have been identified in the literature as contributing to the gap between research and classroom practice include: the limited *access* schools and educators have to timely, relevant and meaningful research (Lysenko et al., 2014); the general undervaluing of practice-based *evidence* compared to that collected in highly-controlled experimental research settings (McKenney & Reeves, 2013; Palinkas et al., 2017); competing demands and priorities that place pressure on educators *time* to engage in or consume research (Fischer, 2009; Lysenko et al., 2014); and low *teacher self-efficacy* in relation to how research influences their engagement (Coldwell et al., 2017; Lysenko, 2014). Uni-directional models do not allow for the development of shared understanding between researchers and educators, and therefore cannot effectively address these factors contributing to the gap between research and practice.

Through reviewing the literature on the conditions required for effective research translation, it became very evident that we needed to consider the role of human connection in adult learning. Just as in the classroom, creating learning environments that promoted familiarity, positive affect, competence, and voice and choice were going to be important to any successful approach. The literature suggested that teacher *and* researcher engagement in the translation processes could be promoted by: creating a sense of familiarity and a shared understanding of professional contexts and knowledge (Begun et al., 2010); establishing ongoing professional relationships between researchers and educators (Palinkas & Soydan, 2012); eliciting positive affect through establishing mutual trust and respect and engaging in learning experiences that were interesting, relevant, enjoyable and empowering (Begun et al., 2010; Fischer, 2009); recognising and building competence through building a shared understanding of what was already known and co-creating new knowledge (Christodoulou et al., 2009; Fischer, 2009); and providing an opportunity for the voices of both educators and researchers to be heard (Fischer, 2009; McKenney & Reeves, 2013; Palinkas, et al., 2017).

Therefore, to effectively translate research into meaningful, contextually relevant practice, we identified that strong connections between researchers and educators needed to be established, through which could develop a shared understanding of context, needs, beliefs, skills, expertise, and understanding. Essentially, we needed a model in which research could meet practice – and this would mean different things for different practitioners. The development of a bi-directional model of research translation that involved ongoing dialogue and collaboration between researchers and educators was identified as a priority if research was to have an impact on practice. In 2017, the SLRC launched the pilot of Triadic Partnership Model (see MacMahon, Nugent, & Carroll, 2020) through our flagship translation program, the Partner Schools Program. This program saw educators, researchers, and research brokers collaborate on school-identified problems of practice. By establishing ongoing partnerships with small teams of educators in schools we could support schools in meaningful engagement with research that was contextually relevant and valuable to their practice. It also allowed us to develop a shared understanding with our school and sector

partners of what the challenges and opportunities were in relation to engaging in school-based research or applying and evaluating evidence-informed practices.

Connecting, Collaborating, Learning Together

In 2019, in response to what we were learning through our partnerships with our schools and education sectors, we revised our SLRC Partner Schools Program to explicitly address the identified factors that contribute to the gap between research and practice. We developed and delivered an ongoing program of professional collaboration with our schools in which we supported them in identifying research that is contextually relevant, making it more accessible in terms of its meaning and its reach, providing a platform to integrate research evidence with systematically collected evidence from practice, recognising time constraints and embedding the program within existing professional learning, and building teacher self- and collective-efficacy through the development of research knowledge and skill (see MacMahon, Leggett, Thomasse, & Carroll, under review, for a full description of the Partner Schools Program). By focusing on a school-identified phenomenon, expanding the definition of evidence, aligning with school priorities and existing professional learning, and supporting the development of teacher capability in research methodology, we connected better with our partners – developing shared understanding, goals and intentions. The professional and interpersonal connections formed through the Partner Schools Program has led to the development of further research projects within schools, further collaborations between schools/education sectors and the SLRC, further study by some of our teachers, and the establishment of ongoing professional networks. Importantly, the connections facilitated by this program have promoted ongoing learning, not just for the educators involved, but for the researchers also. The researchers have built a better understanding of the needs of schools and teachers in relation to research and evidence-informed practice, and this understanding is now starting to drive an education-informed research agenda.

As the lead developer of the program, these connections were also invaluable for my learning and the learning of the team: responding to the discussions with our schools by adapting and improving the program. Through the development, delivery and evaluation of the Partner Schools Program I have experienced first-hand how educators, school leaders, students, families, communities, education sector leaders, researchers, academics, and research brokers are all part of a highly connected learning ecosystem. The social ecosystem of human connection and learning is not confined to the four walls of the classroom, but extends into the lives, practice, and learning of all. Understanding the processes involved in human connection can inform effective learning across the lifespan and under a range of conditions, including online environments.

Connecting when apart

The power of human connection in learning has never been more pronounced than it has been in recent months as we all deal with the social isolation and remote learning resulting from COVID-19 restrictions. During this time of social distancing and social isolation, the importance of human connection to our lives has rarely been more pronounced. We are all grateful for the technology that allows us to video call our family, friends, colleagues, and students, but the absence of face-to-face interpersonal interactions places a strain on our capacity to really and meaningfully connect. In the online environment, we are less able to observe and process those subtle non-verbal cues that provide us with conscious and unconscious information about others: how they are feeling, what they are thinking, how they are coping. However, what video calls have been able to provide for many is a direct line of communication, perhaps more so than when lost in a sea of others in larger classroom, lecture or staff groups. Anecdotally, some of our partners have reported that video calls have provided, for some learners and their teachers, an increased sense of connection due to, as one teacher described, “every student being seated in the front row”. A new line of research inquiry for

me now is to better understand the conditions under which human connection and learning can be promoted in the online environment.

Conclusion

Being able to socially interact and connect with others is essential for our learning and our wellbeing, individually and collectively (MacMahon, Carroll, & Gillies, 2020; Rodriguez & Sollis, 2013; Shernoff, 2013; Wheatley, et al., 2012). The science of learning can provide us with a unique, holistic lens through which to explore the multi-dimensional and interrelated nature of being connected to a learning experience and those within it. Whilst many of the processes of social understanding and connection are innate - perhaps intuitive - and often unconscious, it is invaluable for us to better understand these to promote learning.

Notes on contributor

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