

Constructive Mutualism: Teaching 21st Century Skills in 21st Century Classrooms

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ABSTRACT

For more than fifty years education systems have been striving to go “beyond Behaviorism” without being able to reach a reliable way of mediating relationships in classrooms which assure full student engagement. ‘Constructive Mutualism’ is the name we are giving to a different paradigm, one which has been present in human societies from the moment we could call them human, and which provides the mechanism we are looking for. This paradigm is based on an explicit social dynamic which, once entered into by teacher and student, stimulates the student to willingly do their best work and to self-regulate to avoid classroom disruptions. For a student to enter such a relationship they must so value what it is that the teacher wants to provide them that full engagement becomes effortless. A key strength of this type of relationship is that once students have explicitly entered it, the teacher can direct their attention to other areas where the teacher wishes to impart their knowledge or otherwise facilitate learning. There are only a small number of teachers who have these relationships with all their students today, and we propose that the reason for this is a mismatch between what teachers are providing, which they believe is of high value, and how students are experiencing it, which many find not to be of such high value. The move towards the adoption of twenty-first century skills opens the door to a wider range of capacities that we believe are of intrinsic value to students and that could form the basis for a relationship of the type described. Our study shows that overwhelmingly students (and teachers) value psychological safety and although a large majority of teachers say they are providing this, a majority of students are not experiencing it to the required degree. We believe that this ‘gap’ can be explained through the realization that psychological safety cannot be provided consistently within the Behaviorist paradigm as this paradigm is always conditional. It is under Constructive Mutualism that students’ needs for psychological safety can be fully met. Thus, we can, finally, make a clean break from Behaviorism.

Keywords: Teacher-Student Relationships, Student Engagement, Teacher Engagement, Psychological Safety, Teacherly Authority, Constructive Mutualism, Beyond Behaviorism

Introduction

Western teaching techniques have for some time been undergoing an evolutionary change. Originally established as an autocratic system where teachers directed the learning of their students, fostering compliance amongst students in the classroom, it has largely evolved to one whereby the quality of relationships between teachers and their students has become recognized as more important [1,2].

Historically, teaching has been based upon a tradition which emerged from an authoritarian society...The traditional control

techniques used to force students to accept a teacher’s decisions were rewards and punishments. In a society which aims to promote self-discipline, respect and social equality, the use of rewards and punishments has no place [3].”

Students in the old system were cooperative largely because teachers had considerable power to enforce conformity and obedience. As societal beliefs, attitudes and behaviours have changed; so too has teaching practice and the tools required to effectively teach the class [4].

The traditional, autocratic methods of raising children are no longer effective, which places the teachers of today in a dire predicament, because the traditional methods, the only ones they know, no longer work and the new ones are not known. This

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creates confusion in both children and adults. There is a growing perception that teachers are not adequately equipped to handle the growing incidence of disruptive student behaviour [3].

Necessity has led to a change in approach both in the teacher training schools and in teaching practice [5]. Compliance to a set of imposed rules is insufficient in preparing young people for the demands of the modern workplace and society. An important element in preparing young people is to help nurture autonomous motivation [6]. Teaching has become more nuanced. No longer may a teacher reliably wield the blunt tools of punishments and rewards as students and families now reject such naked exercise of power. Even practiced autocrats whose lessons are deemed to be orderly, are no longer imparting an education which fully equips their students with the skills which they need [3]. Studies by Morgan & Kingston indicate that the autocratic style no longer meets the needs of the student to be fully engaged in her studies [7]. There needs to be an approach more appropriate to the 21st century classroom and the 21st century student.

A compliant child is seen as a good boy or girl. If the child resists, punishment or coercion is often used to elicit the desired behaviour...However they respond, the child forgoes the opportunity for self-determination; the rule determines their behaviour, not their own volition...imposing rules is not the only way to obtain the desired behaviour. Children integrate rules when they can determine for themselves the value of behaving in a certain way, which means they will continue to do so even when there is no external imposition [6].

This evolution, however, is part of a continuum of change and the journey is not yet over. Effectively, teachers have replaced naked autocracy with a benevolent form of classroom control which largely sees authority and responsibility for learning resting still in the hands of the teacher. In essence, classrooms are far more pleasant places for students and teachers alike, but when responsibility rests with one person, the lesson is only partially learnt.

The most common approach to classroom management in most schools is some form of behaviour modification. Rules, consequences, and rewards seem to be the mainstay of most teacher repertoires for student discipline [8]. In a study conducted on school wide improvement, Merry identifies the problems with even benevolent teacher centric measures:

The limitation in the approach has been the lack of significant interventions to promote intrinsic motivation amongst the students. This has led to an approach characterized by imposition or compulsion rather than any encouragement in behavioral or attitudinal changes in the students themselves...This could be the explanation for the pleasing but limited improvement in results [9].

Behaviour modification techniques, predicated on rewards and consequences whilst outwardly more progressive than what it has replaced is still only part way to the promotion of fully activated learning and learners. Responsibility, and therefore ownership, of the learning and what is learnt remains with the teacher. Whilst more nuanced and skillful, this form of classroom management still denies the student the opportunity to learn and practice contemporary skills. The next step in

the evolution will see Behaviorism replaced with a different teacher-student dynamic. One which we will describe in this study as “Constructive Mutualism”. (The concept of mutualism can be found in scientific and economic theory, initially in a biological context and then as “the action or practice of a group of people in cooperating towards a common goal and for the common good”: first used in an educational sense in 1822, Oxford English Dictionary online). The concept is based upon reciprocity or an exchange of benefit between two parties. In the case of Constructive Mutualism, a term we use here for the first time (although the underlying mechanism has been with us ever since we became identifiably human), the teacher constructs a classroom environment which fosters benefit for both parties. The students are encouraged to learn critical skills of self-determination whilst the teacher by common consent is enabled to teach her subject in an activated and engaged classroom. The term constructive has a second meaning in that this classroom is highly effective in its primary goals of imparting knowledge and developing skills.

Of note is the need for the preparation of educators to include a focus of developing relational competence as well as evaluation processes that consider the teacher-in- relationship. Regardless of the educational setting, educators are challenged to consider their beliefs and actions and the influence these exert on relationships with students [10].

The teacher’s standing in the modern classroom is predicated more upon the quality of the relationships than ever before. The most effective teaching therefore recognizes the broader imperative to model the values and skills of self-determination, intrinsic motivation and voluntary engagement [11,12].

Lewis illustrates this quite clearly:

If you want people to live by social justice there is only one way to do it, and that is to initiate them into the practice of social justice [13].

Constructive Mutualism

Behaviorism is grounded in the pleasure/pain principle and is operationalized using reward and punishment. It is a means for using external motivation to shape behaviour and direct attention wherever is required, although the quality of the attention can be very variable. Behaviorism suited education systems where the required learning was largely based on memorization and procedural repetition. The prevailing paradigm is one of conformity to an externally applied rules-based order.

Constructive Mutualism is grounded in the teacherly authority principle and, as this paper will show, is operationalized using the provision of psychological safety. It is a means for using internal motivation to achieve self-regulated behaviour and direct attention wherever is required, with the quality of the attention typically being high. Constructive Mutualism suits education systems where the required learning needs critical thinking, creativity, collaboration, and other advanced skills.

Teacherly authority is a social dynamic which can be adopted by a teacher and her students to assure full student engagement whereby students willingly do their best work and self-regulate to minimize classroom disruptions. Constructive Mutualism

is the paradigm which this social dynamic generates and thus reflects a different paradigm from the Behaviorist one and those teachers who have adopted it already have moved successfully “beyond Behaviorism”.

The authors believe that it is this dynamic which explains the behavior and performance of the small minority of ‘enlightened’ teachers [14]. The fact that Constructive Mutualism represents a different paradigm also accounts for why it is that such teachers cannot explain what they are doing differently from their peers, they can only recognize that they are different, a conundrum that Corrigan also notes without previously offering an explanation [14]. To effect real change in educators and thus education, this construct needs to be identifiable and teachable.

Stepping beyond Behaviorism

To be able to teach, teachers must have some form of authority over their students (which is not meant to imply ‘power over’) affording them the capacity to direct their students’ attention appropriately. Ideally, this authority will assure the full attention of students is appropriately directed so that learning is broad-based and efficient. The form of authority that teachers must have to be effective in the modern world is not straightforward.

The teacher has a peculiar form of authority... It is viewed as nonproblematic, and necessary because, (1) it is effecting development, and (2) it is phase-temporary or phase-specific. That is, the teacher's authority over the pupil is temporary; it effectively evaporates once the pupil's degree of understanding approaches that of the teacher... Phase-specific authority seems inescapable in any process of education (development) [15].

Positional authority and the use of reward and punishment have been effective in the past but are less so today. Margaret Mead whilst exploring cultures and cultural change in the 1970s saw the need for changes in adult behavior to keep the future open - to allow a prefigurative culture to emerge - “I call this new style prefigurative because in this new culture it will be the child-and not the parent and grandparent-that represents what is to come” [16].

Now, with our greater understanding of the process, we must cultivate the most flexible and complex part of the system-the behavior of adults. We must, in fact, teach ourselves how to alter adult behavior so that we can give up postfigurative upbringing, with its tolerated configurative components, and discover prefigurative ways of teaching and learning that will keep the future open [16].

Zak Stein also explores the nature of authority and some of the conditions of its use:

Authority is therefore a dynamic property of relationships wherein one party is granted unique responsibilities and allowances with regards to the other. Importantly, for authority to work this asymmetry must be recognized and agreed to by all parties. ... Authority must be granted or given - one must arrange to be seen as an authority [17].

Stein then goes on to discuss teacherly authority, the basis for Constructive Mutualism:

The dynamics of teacherly authority have received less attention. Institutionalized forms of teacherly authority have existed

throughout history, from ancient apprenticeship systems to post-industrial public-school systems. Informal non-institutionalized forms of teacherly authority have also been common throughout history.

Stein thus proposes that teacherly authority is a persistent feature throughout history yet has not been widely researched. Finally, [17]:

The basic structure of teacherly authority is such an important part of human interaction (and serves such an essential function in the transmission of cultures, skills, and knowledge) that some theorists have suggested it is a species-specific trait unique to homo sapiens [18].

To recap, teachers need some form of authority to be able to direct their students’ attention [15]. Teachers need to change their behavior so that they are keeping the future open [16]. Teacherly authority is a unique human capability [18]. We propose that teacherly authority, a critical ingredient of the concept of Constructive Mutualism, can provide the means for regulating teacher-student relationships such that student engagement and student learning both rise beyond what current means are able to deliver.

Student socialization occurs on a daily basis in the classroom, whether teachers are aware of it or not. In the classrooms of effective, authoritative teachers, students are socialized to become successful students of today and successful citizens of tomorrow. Effective teachers appear to recognize this and do their best to make sure that the long-term effects they have on their students are toward this positive end. Unfortunately, ineffective teachers do not appear to understand this [19].

This can best be described as the creation of a humanistic climate in which students are encouraged and given the opportunity to become mature and responsible citizens [20].

What drives Constructive Mutualism?

The basic principle, teacherly authority, which underpins Constructive Mutualism is asymmetric, one person (‘the teacher’) has a greater capacity than the other (‘the student’) [1], a capacity which they want to teach for the benefit of the student [2]. This greater capacity is recognized and valued by the student [3] who thereby accepts to pay attention to the teacher and to follow wherever the teacher directs their attention [4]. Once this dynamic is in place the teacher can direct their students’ attention to meet other teacher and student needs. This is an example of where relationships tend to precede learning [21].

This is not tacit learning, emulation nor simple imitation from being around someone. Constructive Mutualism is based on an explicit relationship, a social role dynamic, and it hinges upon the perceived legitimacy of the relationship, on all four conditions [1-4] being met, but especially, students must willingly agree to play their part in the relationship.

The association of a student's respect for a teacher and the student's projection of the character or trustworthiness of that teacher is self-evident. Trustworthiness/character was related to teacher competence where "character involved how much a person is liked, respected, and admired [11,12].

We can also note that Constructive Mutualism does not depend on an asymmetry of power and, in relationships where power is relied on, then we have fallen back into the Behaviorist paradigm with a loss in effectiveness, some students at least will withdraw their consent or only offer it grudgingly.

This has implications for the teacher and the student:
When the sources of teacher stress have been investigated there is one cause that is always among the top three...it is their perceived inability to develop a good working relationship with students that both beginning and experienced teachers identify as a major cause of stress [13].

If teacherly authority is a species-specific trait of humans which plays an essential role in the transmission of culture, knowledge and skills we need to address the question of why there is a large percentage of students who are disengaged.

“In Australia, many students are consistently disengaged in class: as many as 40 per cent are unproductive in a given year. The main problem is not aggressive and anti-social behaviour. More prevalent and stressful for teachers are minor disruptions, such as students talking back. Nor is it just about noise: nearly one in four students are compliant but quietly disengaged. We do not know exactly what causes students in Australia to disengage [22].”

This dynamic sees teachers, whose approaches are seemingly respectful and benevolent, mystified at the disengagement they see in the classroom. Why would students not cooperate in a classroom where the teacher is expert in their field and knows that positive relationships are important? We propose that the reason for this is a breakdown in one or more of the four conditions that must be in place for the teacherly authority dynamic to come fully into force. We can be confident of the first condition on the teacher, most teachers do have a capacity superior to their students, at least in their chosen domain. It is in the second and third conditions where potentially the dynamic breaks down: some teachers may not be focused on their students’ best interest [condition 2] or many students do not value what their teacher wants to teach [condition 3] and in both cases students therefore do not agree to enter the teacherly authority dynamic. In effect, they withhold consent to learn.

Resolving this breakdown - the primary research question

The breakdown has two possible components. The first is that some teachers may not be focused on teaching in the best interest of their students. There may be many reasons for this: for example, a teacher’s primary focus may be on getting through the curriculum, or maybe their focus is on their anxiety about losing control of the class, or maybe on something else which reduces their engagement in the matter at hand. Corrigan reports about 60% of teachers are disengaged [14]. It is also worth noting that it is entirely possible that the conditions which cause students to fully engage are also pertinent to teachers.

The second component is if students do not value what their teachers want to provide them then the teacherly authority dynamic breaks down. This might be the end of the matter except that education systems have recognized that young people need a broader range of skills than have been considered necessary in

the past [23]. This new range of skills are often called twenty-first century skills (Table 1 provides one expression of these skills). Foundational Literacies represent many of the skills which have always been central to modern schooling. The Competencies and Character Qualities - which together we will refer to as Core Growth Skills - have rarely been explicitly stated until recent times as being desired outcomes for all students of our schooling systems.

Table 1: Twenty-first century skills as formulated and published by the World Economic Forum (2015).

Foundational Literacies	Competencies	Character Qualities
How students apply core skills to everyday tasks	How students approach complex challenges	How students approach their changing environment
Literacy	Critical thinking/ problem- solving	Curiosity
Numeracy	Creativity	Persistence/grit
Scientific literacy	Communication	Adaptability
ICT literacy	Collaboration	Leadership
Financial literacy		Social and cultural awareness
Cultural and civic literacy		

With this broader range of skills to be learnt, it opens the possibility that there are areas which both teacher and student might value - one to teach and the other to learn - and therefore form the basis for a teacherly authority relationship. Recall that once the teacherly authority dynamic is in place the teacher can broaden the scope of what they want to teach to include, for example, the Foundational Literacies.

Data analysis shows that both teachers and students are the most satisfied with the classroom climate which is created by teacher-interactionist. Students’ achievements were at its highest when the teachers practiced interactionist style, and at its lowest when the teachers were interventionists [24].

We therefore have the possibility to investigate what skills might form the basis for engaging both teachers and students in a Constructive Mutualist rather than a Behaviorist dynamic. The key research question is: are there areas within the Core Growth Skills that might form the basis for relationships of teacherly authority?

Secondary question: is there a single area that will engage ALL students and teachers or are their multiple areas which, collectively, might engage all students and teachers?

Four key capacities

The range of Core Growth Skills have not been chosen at random but reflect capabilities that young people are deemed to need to face up to a changing and uncertain future and, in that sense, are a response to Mead’s call to “keep the future open” [16,25]. We propose that the Core Growth Skills are underpinned by four key capacities that emerge during childhood and that children and

young people are potentially attracted to adults who have these capacities and are willing to teach them. These four capacities are Insight, getting things done, Caring and Active Open-Mindedness.

Insight

'Relevance realization', according to Vervaeke, Lillicrap & Richards, is the fundamental process that underpins all our cognitive functions [26].

We have argued that relevance realization is a pervasive problem within cognitive science and a new framework for doing cognitive science is emerging in which relevance realization is the criterion of the cognitive. As such, we believe that the explication and explanation of cognition will ultimately be in terms of processes of relevance realization.

This is a capacity that emerges in the very youngest of children. The term 'realization' is in both senses of something coming into being and the perceiver becoming aware of this occurrence. What is being realized is that which, out of the 'combinatorically explosive' number of possibilities presented by our senses, is relevant to us in this moment. This is a child pointing at a dog and voicing "bow wow".

Insight is an expression of relevance realization which allows us to break out of the way we might have boxed in our thinking.

Insight learning is not the result of mere repetition or practice, but rather a moment of fundamental restructuring of the problem, based within the implicit procedural system of processing [27].

These authors go on to say:

Research on flow reliably documents a set of common features underlying the phenomenology of flow, including an intense or heightened concentration and attention on the activity at hand; a sense of distorted time; transcendence of the self; a reduction or loss of reflective self-consciousness; reduced or absent worry over failure; focus on the present moment; resilience against distraction; autotelic engagement in the activity itself; merging of action and awareness; and the feeling of being at one with the environment or activity-in other words, a deep sense of "at-oneness" with one's surroundings [27].

Finally, they "argue(d) that flow is characterized by a dynamic cascade of insight, coupled with enhanced implicit learning [27]."

In terms of twenty-first century skills, insight underpins creativity, curiosity and adaptability, contributes to problem-solving and provides the basic machinery for social and cultural awareness (Table 1).

We propose that helping young people to develop insight - into their work, how to do their work, how to position themselves vis-à-vis the world around them and, most profoundly, to uncover unsuspected capacities and opportunities that will shape their future lives - could form one basis for Constructive Mutualist relationships.

The following three capacities are derived from the STAGES model of consciousness development. This is a research-based framework coupled with a theoretical model, which combine to make it a "useful model" [28]. There are four recognized stages in this model up to and including the mature second-person perspective usually emerging between ten and twelve years old. The characteristics, behaviours and emerging capabilities of these four stages are summarized by Corrigan and used in the following three sections [14].

Getting things done

From the age of about 18 months intrepid toddlers begin the process of learning how to get what they want and to get things done. Aside from an intuitive capacity for manipulation through various categories - physical (grabbing what they want), intellectual (being tricky), emotional (tantrums) and social (calling on others to intervene) - an increasing ability to act in the world follows the stages of empowerment. These five stages comprise the recognition that they have choice (autonomy), the capacity to take the first step to act on that choice (initiative), the capacity to sustain effort to make it through whatever gets in the way (follow-through), the ability to actually complete the project to finish and say "this is done" (completion) and, the ability to rejoice in the completion of the task (celebration) [14]. Think toddler pushing a stool up to the kitchen bench, climbing up to the cookie jar, struggling to get the lid off, taking a cookie, climbing back down and then eating the cookie with great satisfaction.

The importance of this capacity is self-evident in its application in the modern world and is further emphasized by the fact we begin to learn this capacity as soon as we are old enough to act in the world. In terms of twenty-first century skills, this capacity underpins initiative and persistence and delivering projects successfully requires leadership skills. Many schools use some form of action inquiry to support teachers in improving their practice in a systematic way i.e., to "get things done". We propose that helping young people to "get things done" is a second capacity that could form a basis for a Constructive Mutualist relationship.

Caring

From the age of somewhere between four and six, a young child, who until now has viewed the world from a purely first-person perspective, begins to realize that other people may see the world differently from how she sees it. This is the emergence of a second-person perspective and its concepts of reciprocity and fairness: "If I hurt you, you can hurt me back" and "one for you and one for me". The child begins to prefer the friend to the toy and needs to learn the rules for having friends, and foundational to this, she needs to learn to care for another [14].

Relationships are central to human health and wellbeing so that developing the capacity to care for others is at the heart of a long and healthy life [29]. As Nodding notes, caring is strongly related to resilience:

Students must believe that the adults in their schools and communities care about them and that their well-being and growth matter. Kids seem to be able to survive material poverty,

and many can ignore much of the violence in the media - or at least keep its effects to a minimum - if they have continuing relationships with adults who obviously care for them [21].

Some of the ways that we show how we care: by making people feel safe (both physically and psychologically), by being accepting of people as they are, by being interested in them and what they are interested in, by being a good listener (a quiet mind, open to the new and different), by empathizing and recognizing the other's feelings, by being compassionate, by celebrating and showing gratitude, by being accessible and supportive, by being trustworthy, dependable, reliable. Caring for others becomes the basis for collaboration which, in turn, is both a twenty-first century skill and one of the key drivers of organizational success in the modern world. High performing teams are characterized by having high levels of psychological safety and mutual dependability amongst team members [30]. Further, many schools organize themselves around teams of all sorts encouraging, although often by trial and error, the development of this core capacity. Caring for others is also the basis for effective communication, another twenty-first century skill.

When we ourselves feel cared for and valued, it stimulates us to respond in kind and it is easy to see how a Constructive Mutualist relationship can be built around providing and teaching - especially through modelling - this essential capacity.

The most effective teachers who are most aware of their interactions with students and the results of those interactions, describe specific forms of care (i.e., listening to students) and respect (i.e., being forgiving/nonjudgmental and being fair/consistent) that lead to the development of: 1) trust with students, 2) student cooperation, and 3) legitimate authority to which students willingly respond...care, respect, and trust are necessary to the process of authority development [19].

We propose that caring might be another basis for developing Constructive Mutualist relationships.

Active Open-Mindedness

Formal reasoning begins to appear around ten to twelve years old as interior senses mature making memory more reliable, also affording the delaying of gratification and the capacity to anticipate consequences. Individuals begin to establish and internalize principles, using the reciprocity dynamic to determine which patterns are 'good' and which 'bad', which begin to define behavior making it more stable and solid and creating an internalized foundation for making choices, in turn this allows the young person to persevere in the face of social pressure [14].

Habermas's theory of knowing has been instrumental in much of the thought that educationists have seized on in attempting to deepen our understanding of learning Beyond the importance of empirical-analytic knowing (the knowing and understanding of facts and figures), Habermas spoke ... of the more challenging and authentic learning of what he described as historical-hermeneutic or "communicative knowledge" (the knowing and understanding that results from engagement and interrelationship with others) and of "critical knowing" or

"self-reflectivity" (the knowing and understanding that comes from critique of all one's sources of knowledge and ultimately from critique of one's own self or, in Habermas's terms, from knowing oneself, perhaps for the first time). For Habermas, this latter was the supreme knowledge that marked a point of one's having arrived as a human being [31].

Active Open-Mindedness (AOM) - also known as actively open-minded thinking (AOT) - is a means for ensuring that the ideas we hold are well-founded and not formed through any of the many forms of bias that we are prone to "AOT predicted the tendency to collect information, and information acquisition predicted performance [32]." In a superbly detailed paper Stanovich and West investigate the multiple factors which affect our ability to think in this way, starting from [33].

Discussions of critical thinking in the educational and psychological literature consistently point to the importance of decontextualized reasoning styles that foster the tendency to evaluate arguments and evidence in a way that is not contaminated by one's prior beliefs. The disposition toward such unbiased reasoning is almost universally viewed as a characteristic of good critical thought [33].

Modelling to students that our own views are held provisionally, and can change when new evidence becomes available, is a powerful way to ensure students develop the same capacity. For example, not becoming defensive when our view is challenged, and listening openly to others' views.

It is not coincidental that critical thinking/problem-solving is the first of the competencies to be listed and the capacity to hold well-founded views is sorely needed to aid the struggle against the polarization of views that have become ingrained in political systems [34].

Active Open-Mindedness is a fourth capacity that might serve as the basis for forming Constructive Mutualist relationships.

Methods

This research study used a multipart survey to seek the views of teachers, and year 10 students about how important these core capacities are and how well they are being offered by teachers and experienced by students.

Participant Recruitment

To attract participants to the study, the researchers approached eight schools of the Associated Grammar Schools of Victoria (AGSV) in Australia: Assumption College, Camberwell Grammar, Ivanhoe Grammar, Marcellin College, Mentone Grammar, Penleigh and Essendon Grammar, Trinity Grammar, and Yarra Valley Grammar. This group includes boys' only schools and coeducational schools, both Catholic and independent.

An information email was sent out to the principals of the eight AGSV schools for them to forward to their staff and to their Year 10 students. The email contained a link to the study which was unique for each school. All principals agreed to participate as described. Participation in the survey was voluntary.

Survey Design

To answer the primary research question, we designed an online survey questionnaire. The survey was conducted through an unbranded site on a commercial platform using multiple URLs, one for each participating school, to access the survey.

Thirty statements were developed to describe behaviours that are representative of the four core capacities that were elaborated in earlier sections (see Tables 2 and 3 which show the 30 statements modified to represent what teachers might be providing and what students might be experiencing as used in the first part of the survey and Table 4 which shows neutral versions of the 30 statements used in the second part of the survey), the four core capacities are:

- Insight
- Getting things done
- Caring
- Active Open-Mindedness

The survey was divided into three parts.

Table 2: The 30 statements used in the Teacher branch of the survey and the core capacity to which they are assigned

Core Capacity	Statement
Insight	TQ1 - I help students solve problems through having insights
Insight	TQ2 - I encourage students to find their own solutions
Insight	TQ3 - I highlight and celebrate students' insights
Insight	TQ4 - I help students place issues in a larger context
Insight	TQ5 - I help students properly frame problems
Insight	TQ6 - I help students re-frame problems to find solutions
Insight	TQ7 - I take opportunities to help individual students realise unsuspected possibilities
Getting things done	TQ8 - I encourage students to have their own ideas
Getting things done	TQ9 - I encourage students to act on their ideas
Getting things done	TQ10 - I encourage students to keep going when things become difficult
Getting things done	TQ11 - I encourage students to complete projects or bring ideas to completion
Getting things done	TQ12 - I highlight and celebrate students' successes
Getting things done	TQ13 - I encourage students to set goals and the steps to achieve them
Caring	TQ14 - I make people feel safe
Caring	TQ15 - I fully accept students as they are without discrimination
Caring	TQ16 - I am genuinely interested in all my students
Caring	TQ17 - I listen with an open mind and heart
Caring	TQ18 - I am empathic, recognising others' feelings

Caring	TQ19 - I am compassionate towards myself and others
Caring	TQ20 - I readily respond with gratitude
Caring	TQ21 - I am open and supportive in responding to the needs of my students
Caring	TQ22 - I am trustworthy and can be relied on to do what I say
AOM	TQ23 - I am open to be proven wrong
AOM	TQ24 - I hold views and opinions lightly; being open to other ideas
AOM	TQ25 - I take great care before settling on an opinion
AOM	TQ26 - I know that even my deeply held views may need to be modified
AOM	TQ27 - I encourage my students to consider all aspects of an issue
AOM	TQ28 - I encourage airing of contrary views
AOM	TQ29 - I encourage my students to explain the reasoning behind their opinions
AOM	TQ30 - I don't become defensive when my opinion is challenged

Table 3: The 30 statements used in the Student branch of the survey and the core capacity to which they are assigned

Core Capacity	Statement
Insight	SQ1 - I am helped to have insights to solve problems
Insight	SQ2 - I am encouraged to find my own solutions
Insight	SQ3 - Students' insights are highlighted and celebrated
Insight	SQ4 - I am helped to place issues in a larger context
Insight	SQ5 - I am helped to properly frame problems
Insight	SQ6 - I am helped to re-frame problems to find solutions
Insight	SQ7 - My teachers give me opportunities to unearth unimagined possibilities
Getting things done	SQ8 - I am encouraged to have my own ideas
Getting things done	SQ9 - I am encouraged to act on my ideas
Getting things done	SQ10 - I am encouraged to keep going when things become difficult
Getting things done	SQ11 - I am encouraged to complete projects or bring ideas to completion
Getting things done	SQ12 - Students' successes are highlighted and celebrated
Getting things done	SQ13 - I am encouraged to set goals and the steps to achieve them
Caring	SQ14 - Teachers make me feel safe
Caring	SQ15 - I feel fully accepted by my teachers

Caring	SQ16 - I feel my teachers are genuinely interested in their students
Caring	SQ17 - I feel fully listened to by my teachers
Caring	SQ18 - Teachers are empathic, recognising others' feelings
Caring	SQ19 - Teachers are compassionate towards themselves and their students
Caring	SQ20 - Teachers readily respond with gratitude
Caring	SQ21 - Teachers are open and supportive in responding to the needs of students
Caring	SQ22 - Teachers are trustworthy and can be relied on to do what they say
AOM	SQ23 - Teachers are open to be proven wrong
AOM	SQ24 - Teachers hold views and opinions lightly; being open to other ideas
AOM	SQ25 - Teachers show great care before settling on an opinion
AOM	SQ26 - Teachers express that even their deeply held views may be modified
AOM	SQ27 - I am encouraged to consider all aspects of an issue
AOM	SQ28 - I am encouraged to air contrary views
AOM	SQ29 - I am encouraged to explain the reasoning behind my opinions
AOM	SQ30 - Teachers don't become defensive when their opinion is challenged

Getting things done	Q12 - Highlighting and celebrating students' successes
Getting things done	Q13 - Encouraging students to set goals and the steps to achieve them
Caring	Q14 - Making people feel safe
Caring	Q15 - Fully accepting students as they are without discrimination
Caring	Q16 - Being genuinely interested in all students
Caring	Q17 - Listening with an open mind and heart
Caring	Q18 - Being empathic, recognising others' feelings
Caring	Q19 - Being compassionate towards self and others
Caring	Q20 - Readily responding with gratitude
Caring	Q21 - Being open and supportive in responding to the needs of students
Caring	Q22 - Being trustworthy and can be relied on to do what they say
AOM	Q23 - Being open to be proven wrong
AOM	Q24 - Holding views and opinions lightly; being open to other ideas
AOM	Q25 - Taking great care before settling on an opinion
AOM	Q26 - Knowing that even deeply held views may need to be modified
AOM	Q27 - Encouraging students to consider all aspects of an issue
AOM	Q28 - Encouraging airing of contrary views
AOM	Q29 - Encouraging students to explain the reasoning behind their opinions
AOM	Q30 - Not becoming defensive when opinion is challenged

Table 4: The 30 statements used in Part 2 of the survey and the core capacity to which they are assigned which also form the basis for the modified statements in Tables 2 and 3.

Core Capacity	Statement
Insight	Q1 - Helping students solve problems through having insights
Insight	Q2 - Encouraging students to find their own solutions
Insight	Q3 - Highlighting and celebrating students' insights
Insight	Q4 - Helping students place issues in a larger context
Insight	Q5 - Helping students properly frame problems
Insight	Q6 - Helping students re-frame problems to find solutions
Insight	Q7 - Providing opportunities to help individual students realise unsuspected possibilities
Getting things done	Q8 - Encouraging students to have their own ideas
Getting things done	Q9 - Encouraging students to act on their ideas
Getting things done	Q10 - Encouraging students to keep going when things become difficult
Getting things done	Q11 - Encouraging students to complete projects or bring ideas to completion

Part 1 of the survey was designed to collect information on the experiences of students in terms of the behaviours represented by the 30 statements in the student survey and to collect information on the expression of these behaviours represented by the 30 statements in the teacher survey by teachers in the same school. To achieve this end, Part 1 of the survey branched into two surveys, one for year 10 students and one for teachers. Both teachers and students were asked to respond on a 5-point Likert scale covering the range from “Disagree completely” (score of 1) to “Agree completely” (score of 5) for each of the 30 statements. For example, SQ10 - I am encouraged to keep going when things become difficult in the student branch of the survey matches to TQ10 - I encourage students to keep going when things become difficult in the teacher branch of the survey.

Part 2 of the survey was identical for both students and teachers. In Part 2a of the survey, each respondent was asked to indicate the level of importance they would give to each statement representing a behavior -for example, Q30 - *Not becoming defensive when opinion is challenged* - on a 5-point Likert scale from “Not important at all” (score of 1) to “Very important” (score of 5).

In Part 2b, the statements that received a response of “Very important” were re-presented to the respondent with the instruction to order these statements (using a “drag and drop” technique) from the one that would have the most influence on their school experience down to the one with the least influence.

In Part 2a of the survey, the 30 statements were presented in a random order to each respondent, either teacher or student, the subset that passed to Part 2b were also presented in a random order. This meant that if a respondent only partially ordered their list of statements the unordered statements would appear as noise rather than as a systematic bias.

On accessing the survey, a respondent was required to select their role either as student or teacher, which choice led to the appropriate survey, and to specify their gender with three options: male, female and other/prefer not to say. In the teacher branch teachers were also asked about their length of teaching experience with five options: 1-5 years, 6-10 years, 11-15 years, 16-20 years and 20+ years.

Part 1 of the survey was obligatory, meaning that if it was not completed the survey would end. Part 2a of the survey was also obligatory (or the survey would end) but Part 2b was not obligatory so that completion was voluntary.

156 teachers and 390 students (546 respondents in total) completed Parts 1, 2a and 2b (see Table 5 for the numbers of respondents at each stage). In addition, 6 teachers and 189 students completed Parts 1 and 2a but were not presented with Part 2b as they had not selected any items as being ‘Very important’ and 45 teachers and 118 students only completed Part 1, exiting the survey without completing any of Part 2. As noted, gender information was collected for each respondent and length of teaching experience was collected for teachers. Separate URLs were used for each participating school.

Results

Table 5 shows the number of respondents in each part of the survey, and it makes logical sense to first consider the outcomes from Part 2 of the survey before considering the outcomes from Part 1 and results are laid out in that order.

Table 5: Participation rates for respondents at each stage of the survey process. Part 1 means that a respondent completed the first part of the survey, Part 2a means they completed the second part and Part 2b means that they completed the final part of the survey (note that not all those who completed Part 2a were eligible to complete Part 2b).

	Part 1	Part 1 only	Part 2a	Part 2b
Teachers	230	45	185	156
Students	735	118	617	390
Totals	965	163	802	546

Part 2

Part 2a

In this part of the survey the neutral version of the 30 statements were presented, and participants were asked to evaluate each statement on a 5-point Likert scale ranging from ‘Not important at all’ (score of 1) to ‘Very important’ (score of 5). Table 6 shows the numbers who rated at least one of the statements ‘Very important’ and those who rated none as being ‘Very important’. This latter group did not proceed to Part 2b of the survey where the statements considered ‘Very important’ were re-presented to then be ranked in priority order.

Table 6. Response rates for Part 2a of the survey. Some students and teachers considered none of the statements to be ‘Very important, and so did not proceed to Part 2b of the survey where those statements considered ‘Very important’ were re-presented to then be ranked by importance.

	Rated some ‘Very important’	Rated none ‘Very important’	
Total			
Teachers	179	6	185
Students	428	189	617
Totals	607	195	802

Figure 1 shows the items considered “Very important” by teachers and students and Figure 2 shows the numbers of items considered ‘Very important’ by individual teachers and students with teachers finding more (average of 20.1) versus students (average 13.0). As noted previously 189 students and 6 teachers found no items to be ‘Very important’.

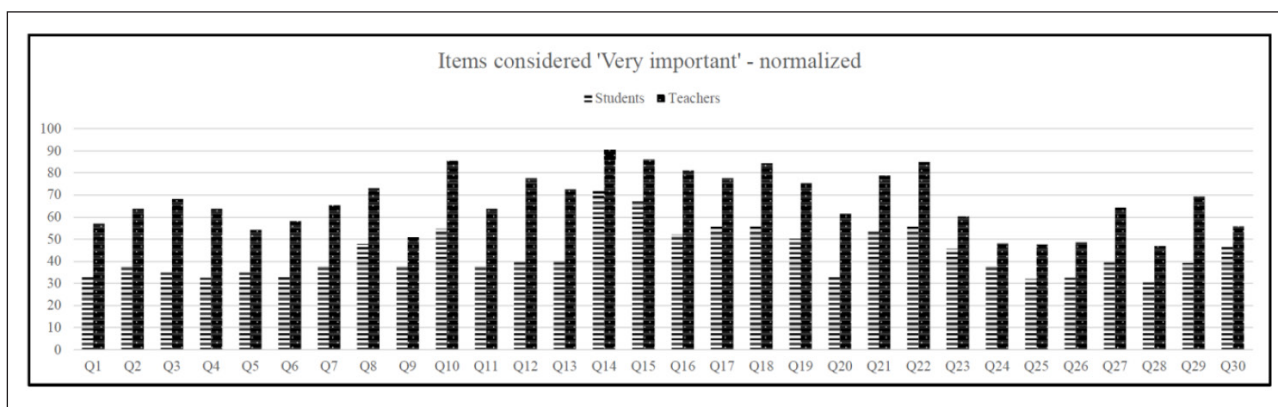


Figure 1: The items considered “Very important” by teachers (n = 179) and students (n = 428) from Part 2a of the survey, results have been normalized (i.e., each set of responses has been scaled down to add up to 100 responses).

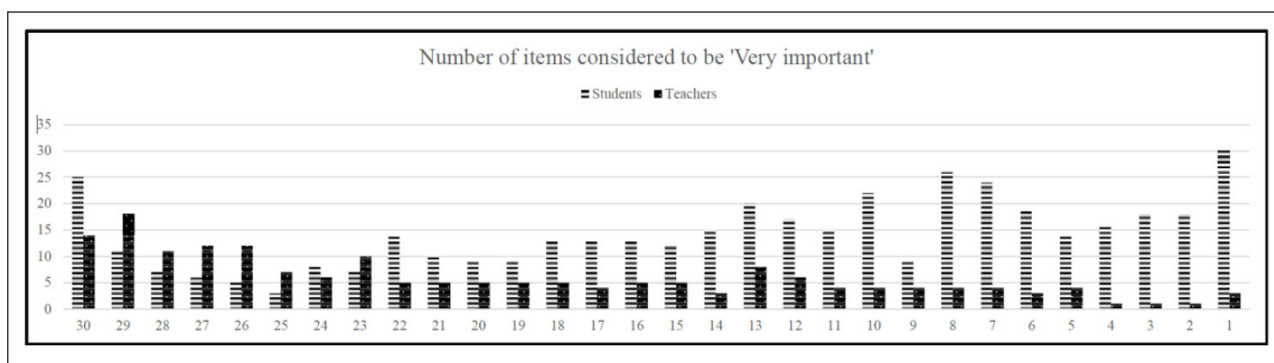


Figure 2: The figure shows how many items were considered to be ‘Very important’ by teachers (n = 179) (average 20.1 with a standard deviation of 8.2) and students (n = 428) (average of 13.0 with a standard deviation of 8.7) in Part 2a of the survey. Note that 189 students and 6 teachers did not consider any of the items to be ‘Very important’.

Q14 - Making people feel safe is statistically significant for both students and teachers (p<.01 and p<.05 respectively) and Q15 - Fully accepting students as they are without discrimination is statistically significant (p<.05) for students.

Part 2b

In this part of the survey each respondent who had rated at least one statement as being ‘Very important’ was re-presented with their chosen list (in random order) and then asked to rank these in priority order i.e., which items they considered most important in their daily experience as a student or a teacher. Figures 3 and 4 show the first choices, first or second choices through to first to fifth choices for students and teachers, respectively. It is worth noting that items related to ‘Caring’ (Q14 - Q22) account for 86% of teacher first choices and 69% of student first choices. In terms of statistical significance Table 7 shows that *Q14 - Making people feel safe* is overwhelmingly the most significant item for both teachers and students. To understand a little better what this item means we ran a supplementary survey with one school asking the question: “*Teachers make me feel safe*” - in your own words describe what this means to you and how you experience it. Table 8 gives a sample of the responses which indicate that primarily it is psychological safety that is uppermost in people’s minds, this should not come as a surprise as over the last twenty years there has been an accumulation of evidence that psychological safety is foundational to both learning and engagement [35].

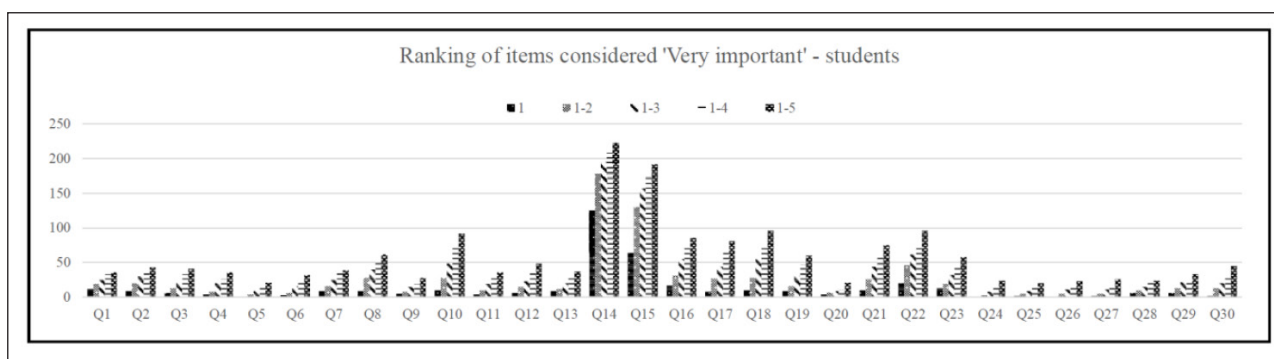


Figure 3: The figure shows how the 30 items used in the survey have been ranked by students (n = 390) in Part 2b. In the legend 1 means first preference, 1-2 means first or second preference through to 1-5 meaning first to fifth preference.

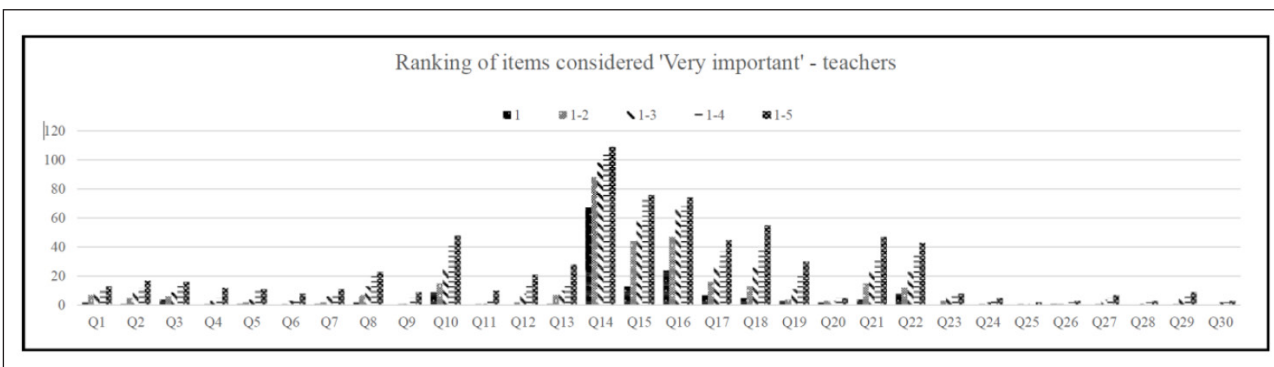


Figure 4: The figure shows how the 30 items used in the survey have been ranked by teachers (n = 156) in Part 2b. In the legend 1 means first preference, 1-2 means first or second preference through to 1-5 meaning first to fifth preference.

Table 7: Items found to be statistically significant from Part 2b of the survey. In the top line 1 means first preference, 1-2 means first or second preference through to 1-5 meaning first to fifth preference.

Students	1	1-2	1-3	1-4	1-5
Q14	p < .000001	p < .00001	p < .0001	p < .001	p < .001
Q15	p < .05	p < .01	p < .001	p < .01	p < .01
Teachers	1	1-2	1-3	1-4	1-5
Q14	p < .000001	p < .0001	p < .0001	p < .001	p < .001
Q15	NS	p < .05	p < .05	p < .05	p < .05
Q16	NS	p < .05	p < .05	p < .05	p < .05

Table 8: A sample (n = 16) from a supplementary survey run with one school asking the question of year 10 students (n = 39): "Teachers make me feel safe" - in your own words describe what this means to you and how you experience it. F means female, M means male and O means Other/prefer not to say.

Make you feel like you can be yourself and be comfortable being yourself and expressing yourself however you feel like. Create a comfortable learning environment. (F) ... When I feel safe with my teachers, it allows me to fully focus on my work without feeling a sense of discomfort. (F) ... Not calling out singular students during class, acknowledging and taking care of disrespectful student behaviour, being kind, caring and understanding when personal or other issues affect a students ability to complete homework/ assignments on time (F) ... Teachers not making me uncomfortable and not making me sad or calling me out personally for being tired or not focused (F) ... Teachers make you included and don't force you to do anything that might make you feel uncomfortable (M) ... Teachers don't threaten me in any way shape or form and it means that I can feel at ease when in a classroom without worrying about my safety. (M) ... I feel comfortable communicating my classroom needs with them and going to them when I need help with work. I experience it through teachers who actively support their students. (F) ... The classroom is free of fear and the feeling of being scared of the teacher (M) ... they make you feel safe in the classroom and comfortable enough with them to ask for help or ask questions (F) ... This means that they respect the teacher-student relationship. It also means that they are kind and approachable and not someone who scares children or seems intimidating (M) ... I believe that this means all the teachers look after people and constantly make sure that everyone is comfortable and wants to be in school. I experience this through teachers calling out problems if something is wrong and properly motivating people to do work and not just through grades and punishments (O) ... Teachers encourage a supporting environment and do not act inappropriately towards student or other co-workers (F) ... The teachers offer and enforce a safe learning environment where students are free to express opinions but to not allow some opinions that may harm or belittle another student or teacher in any way. (M) ... Teachers listen to, pay attention to and care about students. I have experienced this with many teachers, who have talked to me and been willing to have conversations. (M) ... that I feel comfortable around them and that they can listen to me and acknowledge what I have to say. (F) ... I feel safe expressing my beliefs and I do not need to worry about my personal safety (M).

Psychological safety as the basis for teacherly authority relationships

The analysis of Part 2b suggests that the provision of psychological safety may be the primary way that relationships of teacherly authority are formed as no other candidate presents itself.

Psychological safety is broadly defined as a climate in which people are comfortable expressing and being themselves. More specifically, when people have psychological safety they feel comfortable sharing concerns and mistakes without fear of embarrassment or retribution. They are confident that they can speak up and won't be humiliated, ignored, or blamed. They know they can ask questions when they are unsure about something [35].

This finding is consistent with the recognition that newborn babies need both physical and psychological safety for healthy growth and secure attachment to take place, this being provided by a parent's unfeigned love for their child, that is, a love that has no other agenda but the provision of psychological and physical safety. See Mckee for a good treatment of the meaning of unfeigned love versus conditional and unconditional love [36]. That psychological safety continues to be important after infancy should not be a surprise. What is surprising is why it is not being widely experienced beyond infancy [35]. It is in the third part of the analysis (Part 1) that we can begin to answer this question.

Part 1

Part 1 of the survey provided modified sets of statements as shown in Tables 2 and 3 to investigate how students (n = 735) experienced the 30 items presented in Part 2 and how well teachers (n = 230) provided these items. Figure 5 show the results from Part 1 averaged by item and Figure 6 shows the responses split by the five possible ratings (a rating of 5 means 'Agree completely' through 'Agree', 'Neither agree nor disagree', 'Disagree' to a rating of 1 meaning 'Disagree completely').

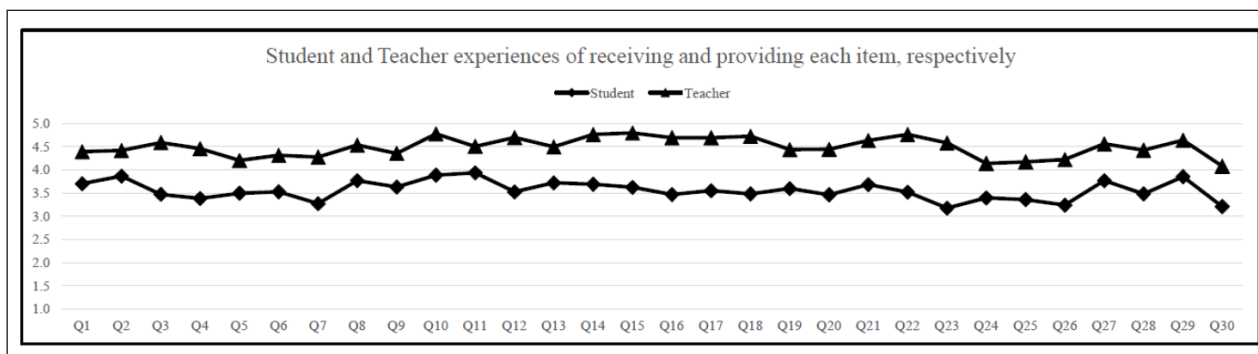


Figure 5: The figure shows how well teachers (n = 230) perceive they are providing the 30 items and how well students (n = 735) are experiencing the same items from their teachers. Q1, etc. represent TQ1, etc. (Table 2) for teachers and SQ1, etc. (Table 3) for students.

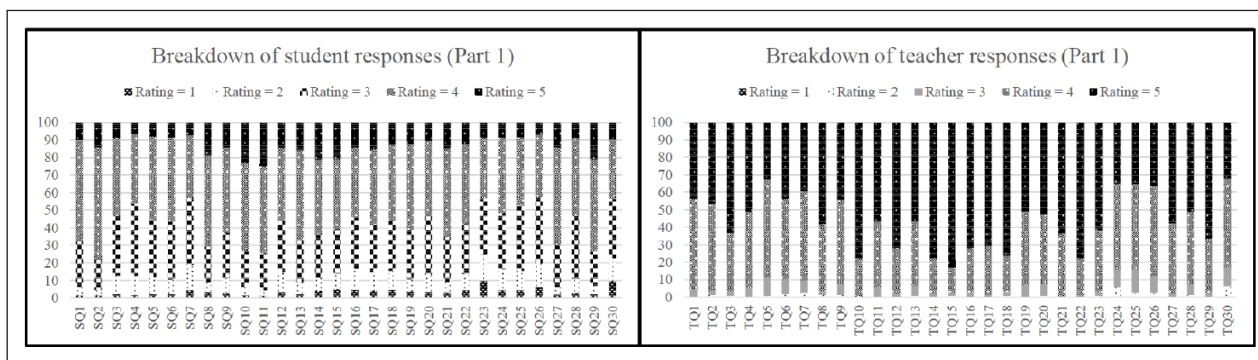


Figure 6: The figure shows the breakdown of responses by students and teachers in Part 1 of the survey. Student items SQ1, etc. can be found in Table 3 and Teacher items TQ1, etc. can be found in Table 2. Rating = 5 is at the top and Rating = 1 at the bottom.

Considering that Q14 - *Making people feel safe* is overwhelmingly considered the most significant then 78% of teacher respondents ‘Agree completely’ with TQ14 - *I make people feel safe*, with 20% in the ‘Agree’ category. In contrast, 21% of student respondents ‘Agree completely’ with SQ14 - *Teachers make me feel safe* with 45% in the ‘Agree’ category, 25% in the ‘Neither agree nor disagree’ category, 7% in the ‘Disagree’ category and 4% in the ‘Disagree completely’ category.

We can split out of the total of 735 students the 189 who found none of the items ‘Very important’ in Part 2a. 5% of these student respondents ‘Agree completely’ with SQ14 - *Teachers make me feel safe* with 42% in the ‘Agree’ category, 37% in the ‘Neither agree nor disagree’ category, 10% in the ‘Disagree’ category and 6% in the ‘Disagree completely’ category. These results can be further split by gender (Table 9). 31% of all boys in the survey fall into this category and 18% of girls. It is noticeable that, for these girls, 20% fall into the ‘Disagree’ category and 5% into the ‘Disagree Completely’ category. We can also split out those students who completed Part 1 but then did not go on to complete any part of Part 2 (n = 118). This group shows a different profile again with 35% in the ‘Agree completely’ category, rising to 39% for boys only.

Table 9: Percentage of student respondents who rated SQ14 - Teachers make me feel safe in the five categories 1 (Disagree completely) to 5 (Agree completely) for different groups of respondents. ‘All Parts’ are respondents who completed all three parts of the survey. ‘No Part 2a’ are respondents who only completed Part 1 of the survey. ‘VI’ means those students who found at least one item in Part 2a ‘Very Important’, ‘no-VI’ means those students who found no items in Part 2a ‘Very important’. Rows may not add up to 100 due to rounding errors and male and female numbers may not add up to totals as third gender category was used but attracted small numbers.

Rating	1	2	3	4	5
All respondents (n = 735)	4	7	25	42	21
All Parts (n = 390)	2	6	22	44	25
Male All Parts (n = 204)	1	4	21	44	29
Female All Parts (n = 178)	3	8	22	45	21
No Part 2a (n = 118)	6	9	13	37	35
Male no Part 2a (n = 62)	3	3	18	37	39
Female no Part 2a (n = 53)	9	15	8	40	28
VI (n = 428)	3	6	23	43	25
No-VI (n = 189)	6	10	37	42	5
Male VI (n = 223)	2	4	22	43	29
Female VI (n = 196)	4	8	24	44	20
Male no-VI (n = 127)	5	6	43	42	6
Female no-VI (n = 55)	5	20	24	45	5

Female student respondents have a statistically higher number in the lowest two categories versus male student respondents ($p < .01$ using a T test) and statistically lower numbers in the highest category ($p < .05$) when students who found none of the items 'Very important' are excluded.

To summarize there is a large gap between what teachers say they are providing and what students are experiencing with female students having a lesser experience than their male counterparts. However, it is not clear why the different groupings (complete all parts of the survey, only Part 1 and completed Part 2a but found no items 'Very important') shown above have different profiles.

Explaining the 'gap'

If *Q14 - Making people feel safe* is the basis for teacherly authority dynamics and this dynamic is the basis for the Constructive Mutualist paradigm, then we can begin to understand why a gap exists. Psychological safety, by definition, must be offered unconditionally, otherwise there is always the possibility of inadvertently crossing a boundary - or red line - and being made to feel unsafe. Yet, under the Behaviorist paradigm everything is offered conditionally, this paradigm is based on the use of reward or punishment. Under this paradigm we may think we are offering psychological safety and for some students - for example those already trained for compliance - may well see it that way but other students will not be experiencing it as such - they will not be feeling safe.

As we have noted in the Introduction, teachers have been immersed in a benevolent Behaviorist model which they believe meets the needs of their students. Therefore, misbehavior and lack of engagement are a bit of a mystery to them and are not automatically seen as failures in the teacher's own behavior and practice.

It is only under the Constructive Mutualist paradigm that psychological safety can be provided in its fullest sense and trigger the social dynamic where all students willingly do their best work and self-regulate to avoid disruptions.

Thus, if we want to increase student engagement and decrease disruptions then we need to "go beyond Behaviorism" and fully embrace Constructive Mutualism and its potential for providing what it is that students (and teachers) most need - psychological safety.

Discussion

The aim of this research was to find a reliable way to rebuild towards effective 100% student engagement and do this by "going beyond Behaviorism". The starting point was to use the mechanism of teacherly authority relationships (borrowed from the Constructive Mutualism paradigm), which are centrally a part of being human, and exploring ways to meet the four required conditions for students to willingly take part and thus achieve this aim.

We found that the thing most valued by both students and teachers is psychological safety and this effectively answered our primary and secondary research questions: there is a single factor which can trigger teacherly authority relationships with all students (and teachers).

However, surprisingly, we found that although teachers said that they offered psychological safety to a very high degree (nearly 80% of teachers provided it all the time, in their view) this did not match with students' reported experiences. The resolution of this 'gap' emerged with the realization that within the Behaviorist paradigm it is not possible to consistently provide psychological safety as this paradigm is based on conditionality. Thus, we borrowed the teacherly authority mechanism from the Constructive Mutualism paradigm and then found that to operate it effectively the teacher needs to be operating within this paradigm where psychological safety can be consistently provided.

As levels of psychological safety rise, meaning more and more students feel safe with more and more of their teachers, then engagement levels will rise, and disruption levels will fall. This dynamic will create better learning outcomes and better wellbeing outcomes for both students and teachers. A school can get onto a virtuous cycle, each cycle producing increasing outcomes. It is worth noting that coaching is a current example of Constructive Mutualism in action. Coaching has become widespread in schools and is "having an enormous impact on education" who defines coaching as [37]:

A one-to-one conversation that focuses on the enhancement of learning and development through increasing self-awareness and a sense of personal responsibility, where the coach facilitates the self-directed learning of the coachee through questioning, active listening, and appropriate challenge in a supportive and encouraging climate [37].

Coaching (especially cognitive coaching) is an example of a Constructive Mutualist relationship: the coach has a greater capacity which they want to provide in the coachee's best interest, the coachee recognizes and values this capacity and agrees to pay attention to the coach. All four conditions are in place. Further,

Coaching is a discipline where a range of attitudinal, behaviour and language skills merge, towards helping another think better about a situation, problem or dilemma. The act of coaching is often more beneficial for the coach, given the need to listen strongly to the coachee for the coachee, thus exercising development in self awareness and self management [38].

Implications for current 'enlightened teachers'

As noted in Corrigan 'enlightened teachers' cannot explain what they are doing that makes them so effective and, equally, teachers observing such teachers in action have no framework from which to draw lessons for their own practice [14]. What this study provides is two things: encouragement to recognize that enlightened teachers are part of the future of education, so should be celebrated and made mainstream and, the teachers themselves now have a framework which they can use to help others move in the same direction. Now, when asked, they can explain what they are doing and when such teachers are being observed in the classroom there is a framework for making sense of why they behave the way that they do. Given that enlightened teachers seem to be homogeneously spread across schools, then every school is likely to have a small minority of such teachers and it would be perfectly possible for them to now play an

effective leading role in beginning the formal transformation towards a Constructive Mutualist culture within education [14].

Good examples are everywhere, we just need to bring them out into the open. Constructive Mutualism is teachable.

Implications for students

This study shows that students need to feel psychological safety consistently at school to fully engage with their learning. We contend that a teacher who is able to provide this to all their students triggers the entry of these students into a Constructive Mutualist relationship where students willingly do their best work and self-manage to avoid disruptions. We know that such experiences have a lifelong impact on those students lucky enough to have them. Students who experience psychological safety as a matter of course are likely to become adults with Constructive Mutualism as their default paradigm making them more effective in terms of lifelong learning and in work environments where collaboration and creativity are important.

Implications for teachers

This study shows that teachers recognize that ‘making people feel safe’ is of paramount importance and a large majority of them believe that they are doing that. Yet many students do not agree. The implication is that every teacher needs to carefully re-assess, with every student and every class, are they doing everything possible to make that student and that class feel safe in their presence. Just as with the newborn, psychological safety is provided through unfeigned love. Some students are easy to love, and some are not. It is those who are not easy to love who likely feel the least safe and, correspondingly are likely the least engaged. A question to ask is “do I love this student as much as I love some others?” and if not, what do I need to change in myself so that I do? This is hard and takes time but if we want every student fully engaged in every class then every student needs to feel psychologically safe in every class and with every teacher. And every school will have examples of teachers who have achieved this, who do love every one of their students in this way.

Implications for pre-service teachers

To ensure that teachers who are entering the profession have the capacity to provide psychological safety to all their students will require changes in how we recruit and develop new teachers. First, teacher training organizations would need to explicitly seek applicants who already have this capability (and typically a small percentage will have it) and, second, screen other applicants for their willingness and capacity to do the internal work necessary to break with learned Behaviorist attitudes and behaviors and gradually adopt Constructive Mutualist ones. Once enrolled, for example in a four-year course, there would need to be the support and encouragement to make this change, with Constructive Mutualism and the creation of psychological safety explicitly taught. A lot can be done in terms of changing behaviours over four years (especially with people who are relatively young) within a cohort whose members have the same goal, and which already contains a small number of exemplars. This would mean that once a teacher is working within a school they could complete their migration to a Constructive Mutualist mindset at the same time as, if not before, they become proficient as classroom teachers in the traditional sense within the school environment, which typically takes a period of years.

there is a tendency for teacher education to function on the basis of an ‘old order’ of beliefs and priorities, and so, if not studiously reflective of its own practice, to miss what is happening in the wider world, including the schools and even educational research. In a word, it tends to rely on often dated paradigms of learning, the ‘chestnuts’ as it were, and so the effects of new paradigms may genuinely come as a surprise to those embedded in its culture [39].

Implications for leaders

It is likely, although further work would need to be done to verify it, that teachers are also not experiencing psychological safety in a way that is consistent with full engagement, as previously noted about 60% of teachers are disengaged. It is leaders at every level who need to be providing this (and ideally receiving it themselves!). As noted earlier cognitive coaching has spread widely in education and is an opportunity for leaders to practice providing psychological safety in a controlled environment as the basis for providing it more broadly and less formally. The more leaders can provide psychological safety to their staff the more their staff will be able - and willing - to provide psychological safety to their students and more smoothly will the leader’s team be creative and effective in enhancing the learning environment.

Implications for Principals

In Corrigan and Merry we showed that the key role of the principal is to model the behaviours that the school community have enshrined in the school’s vision [40]. What this paper is suggesting is that the key behaviour to model - to students, teachers, leaders, parents - is the provision of psychological safety and also to model the necessary personal struggle required to love those students, teachers, leaders and parents who are difficult to love.

Whatever the concrete content of the school vision, promoting an environment of psychological safety will likely improve its attainment.

Implications for schools

As a school culture gradually shifts towards the provision of psychological safety to greater numbers of students and more often, there will be increasing levels of student engagement and learning and fewer disruptions, fewer escalations of these disruptions beyond the classroom, more time for leaders to focus on continuing to improve the culture of the school and more resources available to address areas of real need. In short, a school can get onto a virtuous spiral where the main driver of student engagement, student learning and staff and student wellbeing - psychological safety - is understood and can be managed up over time. It would not be difficult to measure, by means of simple surveys, the level of psychological safety that is felt in every classroom with the results becoming an input into a reflective process for each teacher leading towards actions to change their behavior to increase the level and extent of psychological safety being provided.

Conclusion

The aim of this research has been to explore if there is a way to break out of the Behaviorist paradigm once and for all and place teacher-student relationships on a basis capable of attaining and sustaining very high levels of student engagement for all students.

We proposed that a small number of teachers who have such relationships today do so because they operate from a different paradigm, what we have called Constructive Mutualism. It is the social dynamic of teacherly authority that underpins this paradigm which has four key conditions to be met by teachers and students, central to these conditions is that the teacher is providing something to students, and in their best interest, that is highly valued by students. We set up a framework of four core capacities to see if we could identify areas that might meet this criterion. We found only one: psychological safety, a concept that is also supported by more than twenty years of research as being foundational to learning and performance. The provision of psychological safety is both necessary and sufficient to create the teacherly authority dynamic. We further concluded that psychological safety cannot be consistently provided within the Behaviorist paradigm as within this paradigm what is offered is always conditional inadvertently creating a classroom of winners and losers whereas psychological safety, by definition, must be unconditional. Therefore, to have students willingly do their best work and self-regulate to avoid disruptions, teachers need to be operating within the Constructive Mutualism paradigm and a complete break with the Behaviorist paradigm is both possible and desirable and small numbers of teachers demonstrate this daily.

Further areas for study. Extend this research into a wider range of school types. Investigate what are teacher experiences of psychological safety in a school, do their experiences match what they need? Why do teachers think students misbehave or otherwise disengage? Confirm that there are gender differences in the experience of psychological safety and establish the mechanisms at play. Determine student needs for psychological safety and their experiences for more year levels.

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions: Merry conducted the literature search and Corrigan developed and administered the survey and conducted the data analysis. Both authors contributed to the discussion and conclusions.

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Data Availability Statement: The datasets generated for this study can be found in.

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