Six-Star Student Wellbeing Survey: Development of a Multi-Dimensional Universal Wellbeing Screening Tool for Students and Schools

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Abstract

Schools have been called upon to play an important role in managing the psychological wellbeing of students and in the early detection of mental health concerns. Schools have also been identified as valuable social contexts in which students can be helped to develop positive psychological skills. The objective of the current paper is to report on the reliability and validity of a multi-dimensional, universal social-emotional screening tool for monitoring student wellbeing: the Six-Star Student Wellbeing and Engagement Survey. The instrument comprises six sub-categories: mood, resilience, school engagement, communication, relaxation, and positivity. In all, 14,310 students from 43 schools around Australia completed the survey. The findings suggest that the instrument shows promise as a multi-dimensional universal wellbeing screening tool for use in schools. The survey information also provides valuable data that can be used in the development of both preventative and positive psychology programs. One particularly significant result of the survey was that student wellbeing was found to correlate with consultation of school counsellors by students. A correlation was also identified between teacher ratings of academic performance and application to subjects on mid-year reports. In addition, the data also showed a general decline in student wellbeing from primary through to upper-secondary school, in line with increasing age. These and other implications of the research are discussed, and future research directions recommended.

Keywords: wellbeing, student, school, mental health, screening, universal

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Researchers have found the construct of wellbeing to be multifaceted and complex (Forgeard et al., 2011). Soutter et al. (2014) note that while the importance of student wellbeing on positive youth development is widely accepted, there is little consensus on what it means for youth to be well in school. In a review of wellbeing in young people, Govender et al. (2019) commented that "burgeoning research on the wellbeing of young people in recent years has made it difficult to identify conceptual gaps in the literature" (p. 1).

Consequently, there exist a number of different views concerning how wellbeing can or should be defined and measured (Fraillon, 2004; Keyes, 2007). Historically, wellbeing has been viewed from the perspective of a medical model and approaches to wellbeing have utilised uni-dimensional assessment tools which primarily focus on mental-illness diagnosis and severity. However, the broader psychosocial view of wellbeing, stimulated especially by the positive psychology movement, has led to an increased interest in the concept of wellbeing and improvement in assessment (Diener et al., 2009; Seligman, 2011). This shifting view is reflected by the World Health Organisation's (WHO, 2018) definition of mental health as "a state of wellbeing in which an individual realises his or her own potential, can cope with the normal stresses in life, can work productively and fruitfully, and is able to contribute to his or her community" (p. 1). Based on this definition, it is apparent that psychological wellbeing extends beyond mental illness and is now understood in terms of healthy emotional functioning.

Reflecting on how student wellbeing elements interact with and are influenced by school factors, a paper utilising 2018 data by the Programme for International Students

(PISA) recognised that the concept of wellbeing in schools is unclear (Govorova et al., 2020). Specifically, Govorova et al. (2020) emphasise that the Organisation for Economic Cooperation and Development (OECD) defines wellbeing as a dynamic state characterised by students experiencing the ability and opportunity to fulfil their personal and social goals (Borgonovi & Pál, 2016). In addition, Govorova and colleagues (2020) conclude that, while the influence of school factors on wellbeing is generally low, teaching enthusiasm and support promote positive school climates, which in turn reduce bullying.

DeSocio and Hootman (2004) describe an association between wellbeing and mental health, whereby clinical diagnosis in adolescents was frequently found to be preceded by difficulties in academic and social functioning. These difficulties have been recognised as sub-clinical behaviours that can potentially lead to future clinical pathologies. Research consistently demonstrates that both the presence of distress and the absence of wellbeing are independently associated with negative impacts on the social, interpersonal, and academic functioning of students (Gonzalez-Tejera et al., 2005; Suldo & Shaffer, 2008; Suldo et al., 2011).

Conversely, positive determinants of wellbeing have been related to positive outcomes in students. Seligman (2011) suggests that a model of wellbeing should include positive emotions, engagement, relationships, and accomplishments as these form the foundation for a flourishing life. In turn, a wellbeing tool which can integrate both positive and negative constructs would be useful as it would be able to provide information on both mental-health concepts, as well as positive psychological concepts. Such a view impacts the choice of assessment or screening tool for wellbeing, so stakeholders should be responsible for initiating, conducting, and following up with the collected information. Certainly, all of these factors have been discussed as important considerations when selecting wellbeing instruments to use in schools (Glover & Albers, 2007).

Student mental health

The importance of proactive wellbeing development is highlighted in research that investigates the onset of mental health concerns. It has been estimated that half of all adult mental health disorders over the human life span first occur between the ages of 7 and 24 (Jones, 2013). Data from the WHO indicates that half of lifetime anxiety and impulse control concerns begin by the age of 11 years, while half of substance abuse disorders begin by 20 years, and half of mood disorders begin by 30 years of age (Kessler et al., 2005; Kessler et al., 2007). Moreover, another investigation has found that specific phobias and social phobias have an average onset age of 15, while panic disorder and generalised anxiety disorder are more likely to begin between 21 and 34 years (Lijster et al., 2017). In relation to anxiety, Lijster et al. (2017) note that there is significant complexity involved in accurately estimating the age of onset. However, they also indicate that anxiety onset generally takes place around 21 years, with other specific anxiety concerns such as separation anxiety disorder, specific phobia and social phobia having an onset before 15 years of age.

While the variation in specific research detail reflects the complexities involved in estimating age of onset, it is clear that many mental health concerns experienced across the life-span begin before 30 years of age and often during adolescence. In turn, it has been suggested that since "many mental disorders begin in childhood or adolescence, interventions aimed at early detection and treatment might help reduce the persistence and severity of primary disorders and prevent the subsequent onset of secondary disorders" (Kessler et. al. (2007b, p. 1). From a practitioner perspective, proactive education and early detection of concerns will both reduce the severity of concerns during childhood and adolescence and likely equip young people to maximise their time at school and better cope with challenges at school and in life after school. In Australia, mental health conditions in students are both debilitating and widely prevalent, with research suggesting that those between 16 and 24 years of age are the group with the highest proportion of mental disorders across the lifespan (Australian Institute of Health and Welfare, 2018). In this group, 26.4%, or about 1 in 4 people, will experience a mental health disorder. The Second Child and Adolescent Survey of Mental Health and Wellbeing found that 14% of adolescents aged 12-17 years experienced a mental disorder in the past 12 months. The rates were even higher for experiences of "distress" (Lawrence et al., 2015). Interestingly, this study also found that one third of 4-17-year-olds needed "life skills training" but for the majority (60.9%) this need was not met (Lawrence et al., 2015). Early intervention and prevention, however, has been shown to alter this course (Weist et al., 2007). Consequently, schools play a vital role in both recognizing mental health disorders in students and in providing resources to support wellbeing (Allen & Mckenzie, 2015).

Schools as Screening Hubs for Wellbeing

Schools have been called upon to play a vital role in the early detection and management of student wellbeing (Duncan et al., 1995; Kern et al., 2014; Levitt et al., 2007; Peterson, 2006; Seligman et al., 2009) and mental health promotion is considered a priority for most schools (Allen et al., 2017; 2018). Yet, there has been a long history of failure to identify and treat mental health concerns in school-age children (Briggs-Gowan et al., 2013). However, researchers have also indicated that screening programs carried out in school settings can reach large segments of the child and adolescent populations in a time-efficient manner (Splett et al., 2013). In an investigation looking at screenings carried out at school-based health centres, Gall and colleagues (2000) reported that up to 80% of children receiving mental health services did so only at school, making the education system the de facto system of care for youth with mental health problems.

With this in mind, and considering that the vast majority of youth attend school, education systems offer an opportune setting to screen for mental health and wellbeing, and can also play a valuable role in promoting these concepts to students. Further, it has been suggested that schools can overcome barriers that limit access to mental health in this young population (Pagano et al., 2000). Generally, there is more support available in school systems, particularly as there are familiar staff available that students are likely to trust in discussion and self-disclosure (Shaffer & Gould, 2000). From a practical perspective, schools set standards for age-appropriate expectations and, importantly, provide a longitudinal view of students' functioning in a normative controlled setting, as well as enabling intervention to be more cost effective for parents and carers (Gall et al., 2000). In addition, schools are often ideally suited for supporting and developing skills that facilitate personal development for students with low wellbeing and sub-clinical levels of mental health (Wyn et al., 2000). Kern and colleagues (2014) identified that characteristics developed through positive education have been linked to a range of academic, social, and physical outcomes. In addition, schools provide opportunities for individual, small group and large group wellbeing education. With this consideration, screening to support and direct wellbeing programs should also reflect individual, small group and whole group data.

Information collected by screening mental health and wellbeing factors can help justify the implementation of preventative programs and can foster wellbeing in a positive way. Once a school embraces this path, the next challenge is to determine the type of screening instrument to implement. Indeed, identifying and making available an appropriate instrument may assist and encourage the adoption of a reliable and valid screening tool, which might subsequently promote the development and integration of preventative intervention wellbeing programs. The National Association of School Psychologists (2006) in the United States has outlined a model for 'The Continuum of School Mental Health Services'. They have additionally stated that comprehensive mental health services are most effective when provided through a multi-tiered system of supports (MTSS). An MTSS encompasses the continuum of need, enabling schools to promote mental wellness for all students, identify and address problems before they escalate or become chronic, and provide increasingly intensive data-driven services for individual students as needed (National Association of School Psychologists, 2016).

Wellbeing across the school lifespan

Research into student wellbeing across the primary and secondary student academic lifespan has found that there is typically deterioration in wellbeing over this time (Burke & Minton, 2019). Other studies have found that age differences do not affect all aspects of wellbeing (Liu et al., 2016; McLellan & Steward, 2015). In a sample of over 2,000 students from 13 secondary schools in Ireland, it was found that wellbeing decreased with age in all measured aspects of wellbeing (Burke & Minton, 2019). The findings were consistent on overall PERMA data as well as for the additional components of positive emotions, engagement, relationship, meaning, achievement, health, and happiness scores. The authors note that these findings may be partially attributable to increased academic stress or pressures as students get older. In addition, it is also likely that the challenges of adolescence contribute to this trend. Such a trajectory provides evidence for the need to implement wellbeing practices in schools, particularly as students become older and are faced with a greater emphasis on academic performance. The researchers identify implications for practice that include the importance of customising wellbeing programs across different schools and age groups, as well as the need to evaluate the effectiveness of such interventions (Burke & Minton, 2019).

Academic Performance and Wellbeing in Schools

One challenge faced by schools when incorporating wellbeing assessments and programs is that such practices have not traditionally been embedded within school curricula. Historically, it seems that an emphasis on wellbeing has typically come a distant second to a focus on academic outcomes. A review by the Murdoch Children's Institute (2018), specifically looking at wellbeing, engagement, and learning across the middle years of schooling, postulates that there is a growing consensus amongst policy makers, education professionals, researchers, and the public that a modern education system should develop the 'whole child'. In other words, it should be tasked with providing a balanced set of cognitive, social, and emotional skills to equip the child to face the challenges of an increasingly uncertain and volatile world. They suggest that the social and emotional development of students are educational goals unto themselves (Murdoch Children's Research Institute, 2018). This insight, among other factors, has given rise to the question of whether a greater focus on higher wellbeing for students can positively impact academic outcomes.

In the Murdoch Children's Research Institute's (2018) review of the relationship between emotional factors and academic outcomes, it was found that students with persistent emotional or behavioural problems fall a year behind their peers in numeracy between years 3 and 7, with similar, but smaller, trends in reading. They point out that, given one in five students report emotional or behavioural problems, these concerns are a major detriment to learning.

In a meta-analysis of whole school social-emotional development, Goldberg et al. (2019) found that while interventions led to small but significant improvements in social, emotional, and behavioural adjustment, as well as to the internalising of symptoms, they did not impact academic achievement. This was in contrast to a previous meta-analysis that reported an up to 11% gain in social and emotional skills, attitudes, behaviour, and academic performance in students who participated in social-emotional learning programs, as compared to controls (Durlak et al., 2011). The difference in findings may be due to the variety, quality, and focus of the wellbeing interventions that were implemented.

A study by Rodríguez-Fernández et al. (2018) investigated the effects of resilience and subjective wellbeing on school engagement and perceived performance. This paper identified both resilience and subjective wellbeing as decisive psychological variables in the prediction of school engagement and perceived performance, and recommended that they should be fostered to help improve academic outcomes among adolescent students.

In a comprehensive meta-analysis involving over 2 million students, Karadağ (2017) found that motivation, self-regulation, self-esteem, parent involvement, goal orientation, and learning styles had a low impact on student achievement, while attitude, self-efficacy, and self-concept had a moderate impact. At a macro level, school culture, school climate, collective teacher efficacy, expectations, and leadership also had a moderate impact on achievement, while socio-economic status had a high impact, and anxiety had a negative impact (Karadağ, 2017). Overall it is apparent that social-emotional skills can positively impact both personal and academic outcomes. In turn it is important to have a metric available to schools to assess wellbeing and guide intrventions.

Measures of Wellbeing in Schools

Indeed, the last decade has seen an increase in the number and variety of wellbeing screening tools available to schools based on different models of wellbeing and mental health. Renshaw et al. (2014) note that although the practice of school-wide mental health screening is emerging, the majority of available screening instruments are designed to assess risk factors or clinical symptoms (Pollard & Lee, 2003; Diener et al., 2009). Such examples include The Child Depression Inventory (Kovacs, 1985), Beck Depression Inventory II (Beck et al., 1996), Reynolds Adolescent Depression Scale (RADS-2, Reynolds, 2004), and the Depression Anxiety Stress Scale (DASS, Lovibond & Lovibond, 1995). While such tools may be relevant in a clinical setting or as targeted instruments with individuals, they are not necessarily relevant to school-wide universal use. Possible reasons for this include the limited information relevant to the broader school population and the lack of positive psychology information in line with Keyes' (2005) complete state model of health. In addition, from an intervention or practitioner usefulness aspect, limited or uni-dimensional information is not necessarily satisfactory to inform and drive whole school social-emotional intervention programs. What is required is a broader tool that will measure both sub-clinical conditions and students' level of wellbeing, as well as providing a range of information that assists personal development.

Given that barriers to the utilisation of universal screening tools include time and subcategory satisfaction (Pollard & Lee, 2003) and a call to address the pragmatic concerns of screening such as teacher buy-in, time available to conduct and organise students to complete screening, personnel resources, and intervention costs (Moore et. al., 2019), it is likely that a tool that includes clinical *and* positive psychology domains would also be both more appealing and more useful to schools and their students (Suldo & Shaffer, 2008; Kern et al., 2014; Levitt et al., 2007; Moore et al., 2019; Weist et al., 2007). Levitt and colleagues (2007) also emphasise that broad or multi-dimensional instruments are most appropriate for universal screening. This method allows confirmation of students or groups with strengths in a range of areas, while also identifying students who may require more specialised or targeted screening in different areas. Students who are identified as having potential clinical mental health concerns in a broad screening may be referred internally at a school or externally to undertake more specific clinical assessments. Moore and colleagues (2019) specifically describe that universal screening is advantageous to identify students with varying levels of strengths and distress and that because screening calls for the assessment of both wellbeing and distress, schools often need to co-administer at least two measures, with one focusing on each domain. While at times, this may be a chosen path by some organisations, reducing the need to administer multiple surveys was one of the goals of the Six-Star Student Wellbeing Survey, in-line with the factors identified above related to time and resources within schools as being important when considering tools. More recently Dix et al. (2020) in a meta-analysis estimating the effects of interventions on student academic and wellbeing outcomes identified that programs that were the most effective included fostering school engagement and belonging and building social-emotional skills. In addition this study identified that effective interventions and conducted internally by a school.

Reflection of existing multi-dimensional screening tools identified that many tools do not include a mental health or mood sub-category, only provide group with no individual information, have sub-categories that are not skills based or remain narrow in their constructs for a universal screening instrument. Such tools taken into account include the NEST Survey (Australian Research Alliance for Children, 2012), the Wellbeing Profiler (Chin et al., 2016), the PROSPER Survey (Noble & McGrath, 2015), the PERMA profiler (Butler & Kern, 2016), the Student Flourishing profile (People Diagnostix, 2017), the Warwick Edinburgh Mental Wellbeing Scale (Stewart-Brown et al., 2019), Resilient Youth Survey (Resilient Youth Survey Limited Australia, 2020), the World Health Organisation Five Wellbeing Index (WHO-5) (WHO, 1988), the Social Emotional Health Survey (SEHS) (Furlong, 2014) and the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). While the above tools may serve some specific purposes in specific environments, from a practitioner perspective and a focus on schools coaching specific wellbeing skills that match an assessment, a unique cluster of sub-categories was identified and the Six-Star Wellbeing Survey was developed as an additional option to the above. Consistent with whole school screening, Goldberg et al.'s (2019) meta-analysis of a whole-school approach to enhancing social and emotional development identified a growing body of research which suggests social-emotional skills are malleable and can be taught using a variety of approaches and formats, including classroom programming. In their discussion, the authors recognised that the implementation of high-quality programs produces larger effect sizes across emotional, behavioural, and academic outcomes when compared with lower-quality interventions (Goldberg et al., 2019).

In their review of wellbeing, Govender et al. (2019) conclude that a priority in the future direction of wellbeing priorities in schools is to address inconsistencies in definitions with an emphasis on multi-dimensional constructs that are culturally appropriate, including an examination of the resilience process. Moore et. al (2019) have made a similar point emphasising the importance of a mental health component in such tools.

The Six-Star Student Wellbeing Survey

The Six-Star Student Wellbeing Survey originated from a practitioner-based service delivery lens, with a view to assisting schools to identify student's self-perception in a range of specific wellbeing areas that are skills-based and can also be taught or coached proactively through individual support and group social-emotional learning programs. For the Six-Star survey development a range of research, as exemplified above was taken into account, as well as factors related to wellbeing models and practitioner experience, which are outlined below. Ideally, in order to maximise utility, the Six-Star Survey provides both individual and a variety of group data in each of the six domains.

Utilising inductive reasoning, with consideration of the complete state of mental health model (Keyes, 2005), consideration of positive psychology (Seligman, 2011), teacher

and school psychologist's input, as well as 30 years practical experience of the lead author working in student wellbeing (including being a classroom teacher, working in a wide variety of roles as a Psychologist with children and adolescents both as a staff member and as a consultant, as well as conducting proactive social-emotional wellbeing programs in schools and sports), the Six-Star Student Wellbeing Survey was developed with the following considerations: incorporate a mental health component that was "sub-clinical" in nature so that schools could conduct the survey internally, but still have information in this important area; provide information related to individuals as well as groups to best inform schools regarding relative strengths and deficiencies in both individual and group domains with consideration to school normative data; incorporate skills-based positive psychology subcategories that had evidence-based benefits related to prevention of social-emotional concerns and direct intervention opportunities or coaching opportunities related to potential social-emotional programs for schools to develop and undertake within their school environment; incorporate engagement, belonging or an attitude to school type domain; have a single version of the survey available across the student life-span from primary (grade 3 or approximately 8 years of age) to year late secondary (year 12 or approximately 18 or 19 years of age) to enable monitoring of the same responses over time; have face-validity of subcategories to be appealing and non-threatening to school administrators; have a low reading age to ensure consistency of comprehension and cater to students with lower reading ability or English as a second language; have few enough items for the survey to be completed within 10 minutes, but enough items for solid psychometric properties; have sub-category domains that were also applicable to adults (staff) so that a whole school approach could be adapted through staff utilising an adult version of the survey with the same sub-categories; have sub-categories and items that were only required to be completed by the student and did not require teacher or parent responses; have sub-categories that did not relate to broader

social factors such as the economic or material circumstances of the survey participants, that are more relevant to policy issues and not directly coachable in a social-emotional program. The specific domains that were selected to create a unique set of sub-categories and rationale for their specific selection (in addition to the factors above) are outlined below.

Mood

The mood sub-category provides information on potential mental health symptoms that may be precursors for future mental health problems, such as worries, mood fluctuations and happiness. It is paramount that schools are committed to screening students in the area of mood (Weist et al., 2007), particularly as mood is considered an important aspect to the definition of student wellbeing (Noble et al., 2008; Center for Education Statistics and Evaluation, 2015). Mood is consistently identified as a key component of subjective wellbeing (Diener, 1999; Robinson, 2000; Rüppel et al., 2015), with large experimental research finding it has a small but significant effect on wellbeing indicators, including life satisfaction and happiness (Yap et al., 2017). Further, researchers have suggested that positive mood or affect is important in understanding daily adolescent wellbeing (Weinstein et al., 2007; Weinstein & Mermelstein, 2007). In addition, it has been identified that schoolbased interventions and cognitive-behaviour therapy are effective in reducing depressive and anxiety symptoms in adolescents (Das, 2016). School-based wellbeing programs have also been shown to have a moderate impact on internalising behaviours (Dix et al., 2020). there has been a long history of failure to identify and treat mental health concerns in school-age children (Briggs-Gowan et al., 2013). However, researchers have also indicated that screening programs carried out in school settings can reach large segments of child and adolescent populations in a time-efficient manner (Splett et al., 2013). In an investigation looking at screenings carried out at school-based health centres, Gall and colleagues (2000) reported that up to 80% of children receiving mental health services did so only at school,

making the education system the de facto system of care for youth with mental health problems. Such information both reinforces the importance for mood or mental health to be a component of wellbeing screening to take place in schools, as well as individual student information to be identified in such surveys, so that students who require assistance are able to be supported either internally or referred externally for support.

Assessing mood, therefore, allows identification of students that may be experiencing mental health challenges, which may initiate further targeted testing, internal or external specialist support or preventative school mental health programs. In summary, having an understanding of the mental health of individuals and groups within the school environment enables whole school education and early targeted intervention to upskill and support students in the management of their mental health. Overall this sub-category provides insight and intervention opportunities including managing nerves and worries, mood changes, fatigue and general happiness.

Resilience

Resilience is widely known to represent an individual's capacity to cope, learn and adapt in the face of change or adversity (Cahill et al., 2014; Luthar et al., 2000), and is identified as an important aspect to the definition of student wellbeing (Noble et al., 2008; Centre for Education Statistics and Evaluation, 2015). The resilience sub-category identifies an individual's capacity to value effort, stay determined, view mistakes as learning opportunities and bounce back from challenges. Resilience is an important protective factor for mental disorders, anxiety, depressive and stress reactions (Shrivastava & Desousa, 2016), as it is found that youth who report high levels of resilience exhibit fewer symptoms of anxiety, depression and suicidal behaviour compared to those who report low levels of resilience (Hjemdal et al., 2011). In addition, McCalman and colleagues (2015) highlight that improvements in young people's resilience contribute to their wellbeing, while Mak and

colleagues (2011) found that individuals with high levels of resilience hold significantly more positive cognitions and views of themselves compared to those with low resilience. Yildirim (2019) also noted that resilience is an important characteristic in the promotion of wellbeing. Schools also acknowledge they have a critical role in developing resilience in students (Cahill et al., 2014). Resilience is also a category that appeals to school administrators because it is recognised as a positive wellbeing construct rather than a clinical construct (Tennant et al., 2007), and is proven as modifiable through the use of strengths-based approaches (Cahill et al., 2014; Masten, 2009; Waters, 2011). Overall, this sub-category provides insight and intervention opportunities including dealing with challenges, developing persistence and determination, problem solving and dealing with mistakes.

Engagement

School engagement is beneficial for continuous learning and personal development (Kuh, 2009; Kuh et al., 2009). The engagement sub-category provides information about enjoyment of school, feeling safe at school, and relationships with peers and teachers, which can be identified as social engagement, institutional engagement and intellectual engagement. School engagement has also been recognised as relevant in understanding the area of wellbeing (Diener et al., 2009; Weinstein & Mermelstein, 2007), with education experts highlighting engagement with learning as a strong indicator of student wellbeing (Noble et al., 2008; Centre for Education Statistics and Evaluation, 2015). The term belonging is often used as a key component of engagement, which Allen and colleagues (2018b) identify as related to positive academic, psychological and behavioural outcomes in students. Particularly, it was found that students with low belonging and school connectedness are at a greater risk of poor wellbeing, increased negative affect, and increased anxiety (Shochet et al., 2006; Shochet et al., 2011). Moreover, school satisfaction is highlighted as an important part of school engagement (Tomyn & Cummins, 2011), which is required for optimal student

wellbeing (Noble et al., 2008). Engagement is also strongly related to motivation, as it is linked with school attendance, positive behaviour and effort (Center for Education Statistics and Evaluation, 2015; Willms, 2013). The sub-category of engagement appeals to educators as it is strongly influenced by controllable factors such as positive student-teacher relationships and positive regard for students (Roorda et al., 2011; Van Uden et al., 2014). Overall this sub-category provides insight and intervention opportunities to assist students to build relationships with teachers and peers, enjoyment of school, enhance motivation and feel safe.

Communication

Communication is critical for students to function in a school environment. This subcategory encompasses items related to listening, expression and the critical area of helpseeking behaviour, which is increasingly shown to be relevant for wellbeing (Rickwood et al., 2005). Communication, particularly language skills, are highlighted as important indicators of wellbeing (Law et al., 2017), as they strongly influence the interactions students have with their peers and teachers. Research has found that children with language or learning problems experience significantly higher risks of depression, emotional problems and behavioural difficulties compared to typical language peers (Yew & O'Kearney, 2013). Help seeking behaviour is also highlighted as an important area for adolescent mental health, with Gulliver and colleagues (2010) noting that mental health literacy and reduced stigma should be used as strategies to improve help seeking.

Children's wellbeing, identity and sense of agency have also been identified as being reliant upon by their communication skills (Department of Education and Training Victoria & Victorian Curriculum and Assessment Authority, 2016). Communication was also included as a sub-category because of its' link to interpersonal relationships, which are often highlighted as extremely important for wellbeing (Inchley & Currie, 2016). Primarily, children's communication skills may be developed through a curriculum focused on conversation and social skills, or through positive and meaningful interactions with role models such as teachers and parents (Department of Education and Training Victoria & Victorian Curriculum and Assessment Authority, 2016). Overall this sub-category provides insight and intervention opportunities to deliberate and incidental education initiatives including expressive and receptive communication and help-seeking.

Relaxation

This sub-category is a reflection of being calm and relaxed both emotionally and physically, as well as managing tension, frustration and anger. Considering the depth of literature on the importance of identifying both internalising and externalising behaviours in children and adolescents (Liu et al., 2011; Arslan, 2018; Symeou & Georgiou, 2017), anger has been considered an essential aspect of multidimensional wellbeing assessment (Spielberger & Reheiser, 2009). For example, research has specifically recognised that anger is strongly linked with depression and anxiety in children (Patrick et al., 2010; Walsh et al., 2017). The capacity for children and adolescents to relax, both physically and emotionally, has also been recognised as an important mental skill which can be developed with intervention (Goldbeck & Schmid, 2003; Reynolds & Coates, 1986; Stueck & Gloeckner, 2005). Specifically, research has found that relaxation techniques such as deep breathing and muscle relaxation can reduce emotional difficulties (Goldbeck & Schmidt, 2003; Grosswald et al., 2008, Larson et al., 2010; Vohra et al., 2019), with an applied school-based program including relaxation training also proven to be beneficial for students' psychological outcomes (Seligman, 2009). Other relaxation-based skills such as meditation, mindfulness and anger management have also been found to reduce depression and anxiety symptoms, and improve other wellbeing indicators (Burke, 2010; Candelaria et al., 2012; Dulagil et al., 2016; Dunning et al., 2018; Nidich et al., 2011). This research highlights the coachability and importance of relaxation in school settings. Overall this sub-category provides insight and intervention opportunities to a wide range of relaxation and anger or frustration management interventions.

Positivity

The positivity sub-category encapsulates how positive a student is about themselves, their future, their goals, their confidence and their knowledge of their own personal strengths. Various definitions of student wellbeing have identified the importance of positivity (Engels et al., 2004; Noble et al., 2008; Statham & Chase, 2010), with growing evidence showing that positivity has an important role in protecting individuals from mental health concerns and enabling them to flourish (Johnstone et al., 2014; Layous et al., 2014; Seligman, 2011). Optimism and confidence have also been found to positively relate to wellbeing (Boman et al., 2009; Stochl et al., 2018). Further, experimental research has identified that a ten session "coaching" program with adolescent females incorporating goal-setting and helpful self-talk had a beneficial impact on overall wellbeing (Dulagil et al., 2016). Overall this sub-category provides insight to intervention opportunities on topics related, but not limited to, goal setting, confidence, optimism, positive self-talk and personal strengths.

Rationale

Overall, considering the literature, authors' practical experience and mental health and positive psychology models, it is suggested that a universal screening instrument relevant for whole school populations should be multidimensional and should have a social-emotional focus on positive wellbeing factors, as well as providing information on sub-clinical mental health in children and adolescents. In addition, any universal tool recommended to a school should be practical and socially relevant with solid face-validity in order to maximise the likelihood of use by school administrators, wellbeing staff, psychologists and other health professionals (Splett et al., 2013). Hence, a tool with face-validity for practitioners, staff and students is likely to encourage schools to utilise data in planning interventions, and will increase the likelihood of repeated assessments over a student's education lifespan in order to monitor any changes from baseline in their social-emotional wellbeing. The Six-Star Student Survey aimed to take these factors into consideration in the survey development. Therefore, the aim of the present research is to evaluate the Six-Star Student Wellbeing Survey, and to specifically report on the reliability and validity to date of this widely used instrument in student populations in Australia.

Method

Participants

Sample 1

Participants were 14,310 students from 46 schools across Australia. There were 6,806 females and 7,220 males ranging in age from 9 to 17 years, with 284 participants not selecting a specific gender. This was associated with a range from grade 4 through to year 13. The schools were a combination of government, non-government, and Catholic primary and secondary schools from urban and rural environments, with schools from every state in Australia represented. All students completed the survey between May 2017 and May 2020. *Sample 2*

Predictive validity was investigated with 183 male students from one school in year 9 with an age range of 13-15 years who had consulted with an internal school counsellor. This

group was a different set of students to the 14,310 participants in Sample 1.

Sample 3

To investigate the link between academic performance and wellbeing, the same group of 183 year 9 male students had wellbeing data matched with mid-year academic reports in the four subject areas of English, Maths, Science, and Physical Education. These were the only four subjects provided as they were the only four subjects that all 181 students participated in to that point in time for the academic year. Reports included a quality of academic performance rating from 1 to 5 and application (attitude) to subject rating from 1 to 5 by their specific subject teacher in each of the four subjects, with very good, good, adequate, inadequate, and poor being the descriptives for the ratings.

The primary purpose of data collection was:

- a) Determine the reliability and initial validity of the Six-Star Wellbeing Student Survey in Australian students.
- b) Determine the validity of the Six-Star Wellbeing Student Survey based on visits to a school counsellor and school reports by teachers.
- c) Identify trends in student wellbeing based on the Six-Star Wellbeing Student Survey for Australian students across their education life-span from grade 4 to year 13.

Materials

The development of the Six-Star Student Wellbeing Survey was based upon the constructs thought to underlie wellbeing, as determined by contemporary wellbeing research and 20 years of practice in psychology, including consulting to schools. To select appropriate sub-categories and corresponding items, a range of factors were considered. The survey aimed to have social-emotional categories that could then be coached or taught to students, include a sub-clinical mental-health component for early identification of students that may be vulnerable to mental health concerns, include positive psychology categories to identify strengths and skills in students to promote flourishing at school, and include an engagement sub-category to assist schools identify students' connection to their school.

Over a three-year period, a number of trials of different questions were conducted with school samples, and data were analysed. with RMIT University. The current Six-Star Wellbeing Survey consists of 50 items; the questions were deliberately designed to contain readable statements for the wide age group (Grade 3 to Year 12) the survey was intended for. The purpose of the instrument was to provide a holistic measure of wellbeing that would appeal to schools and could be universally applied.

Procedure

Schools were all customers of the Australian Council of Educational Research (ACER) and the Six-Star Student Wellbeing Survey. ACER distributed the survey on behalf of Six-Star Wellbeing. After purchasing the survey, schools are provided with an administrator guide with guidelines to conduct the survey by an allocated survey 'administrator' within their school. The guidelines provide samples of how schools should administer the survey. The survey is an on-line survey.

When students logged in to complete the survey, after completing basic demographic data, they were prompted with the following statement:

"The survey is five point likert scale of fifty items. Please read each item carefully and rate yourself for how you have been feeling over the past four weeks. This is not a test and there are no right or wrong answers. Please answer every question honestly without discussion."

Students then chose a box in response to each item with: None of the time; A little of the time; Some of the time; Most of the time; All of the time.

Results

The Six-Star Student Wellbeing Survey was developed as a six sub-category, 50 item multidimensional universal student wellbeing screening tool. Table 1 indicated that all six factors are highly correlated with each other. This indicates that all factors are contributing to a unitary concept of student wellbeing.

Table 1

	1	2	3	4	5	6
1. Positivity	1					
2. Mood	.671**	1				
3. Resilience	.836**	.615**	1			
4. Engagement	.687**	.564**	.679**	1		
5. Communication	$.778^{**}$.620**	.735**	.726**	1	
6. Relaxation	.622**	.737**	.616**	.529**	.583**	1

Inter-Correlations of Six Factors of the Wellbeing Survey

***p* < .01

Exploratory Factor Analysis

The data was screened for univariate outliers but none were detected as the test was administered online with participants clicking on pre-set alternatives. From screening deidentified data from an original sample of 14,540 students, 230 (1.6%) participants with random responses were removed. The minimum amount of data for factor analysis was satisfied, with a final sample size of 14,310 (using list-wise deletion), providing a ratio of over 250 cases per variable.

To determine if the six factors exist in a sample of students, an Exploratory Factor Analysis was then completed. Initially, the factorability of the 50 items was examined. Several well-recognised criteria for the factorability of a correlation were used. Firstly, it was observed that all 50 items correlated at least 0.3 with at least one other item, suggesting reasonable factorability. Secondly, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.98, above the commonly recommended value of 0.60, and Bartlett's test of sphericity was significant ($\chi 2$ (11225) = 422176, p < .001). The diagonals of the anti-image correlation matrix were also all over 0.50. Finally, the communalities were all above 0.30 (see Table 1), further confirming that each item shared some common variance with other items. Given these overall indicators, a factor analysis was deemed to be suitable with all 50 items. Principal Axis Functioning [using Varimax rotation] was used because the primary purpose was to determine if the underlying factors generated by the sample reflected the theoretically derived factors. The initial solution was based on eigenvalues over one. This generated a seven-factor solution (see Table 2) with the seven factors explaining 54.1% of the variance.

Factors explained the following variance: factor 1 (38.0%); factor 2 (4.9%); factor 3 (3.2%); factor 4 (2.8%); factor 5 (2.0%); factor 6 (1.8%); and, factor 7 (1.4%).

Table 2

Sub-Category				Factor			
	1	2	3	4	5	6	7
P3	.664						
RS4	.639						
P2	.612						
P6	.582	.307		.349			
RS7	.551						
RS3	.539						
RS1	.525						
RS6	.517						
P4	.510		.340				
RS5	.490						
P7	.488			.397			
RS2	.485						
P8	.480			.424			
C3	.461				.326		
C8	.450			.417		.301	
P5	.432						.313
P1	.431						.394
RL3	.393						
E7		.767					
E1		.758					

Exploratory Factor Analysis

E6		.738					
E2	.349	.578					
E8		.471		.369			
E4		.458					
E5	.340	.422		.313			
M2			.665				
M4			.646				
M6			.635				
RL6			.603		.322		
RL8			.575		.315		
M7			.550		.342		
M9			.492				
M8				.514			.385
E9				.506			
C5				.499			.317
C7	.339			.452			
RL5			.365		.667		
RL1					.655		
RL4	.332				.616		
RL2	.346				.593		
RL7	.346				.483		
C1						.621	
C2	.442					.571	
C9	.429			.362		.478	
C4				.391		.468	
E3						.464	
C6				.367		.454	
M1							.621
M3							.552
M5	.316						.355

Note. Loadings above 0.35 are bolded. Varimax rotation used.

Extraction Method: Principal Axis Factoring. Rotation Method: Varimax. Rotation converged in 11 iterations.

Forced solutions for four, five, and six factors were each examined using a varimax rotation but did not provide interpretable solutions. The seven-factor solution was preferred because five out of the seven factors aligned with the four of the six theoretical factors – with the first factor principally composed of items from the other two theoretical factors (see Table 2.). The remaining two factors (accounting for five items) accounted for only a small amount of variance and were impossible to interpret/label. See Table 3 for a commentary on naming factors.

Table 3

Factor	Name	Comment
Factor 1	Positive/Resilience	While related, these two concepts are not conceptually
		the same
Factor 2	Engagement	All items are related to engagement
Factor 3	Mood 1	Mood items dominate this factor
Factor 4	Unintelligible	Mixture of mood, engagement, relaxation
Factor 5	Relaxation	All items are related to relaxation
Factor 6	Communication	Communication items dominate this factor
Factor 7	Mood 2	Mood items dominate this factor

Summary of Naming Factors

Investigation of factor 1 identified that items could be split into 2 separate subcategories on the basis of resilience items relating to dealing with challenges (e.g., 'I can bounce back when things don't work out'), while positivity items related to general maintenance of positivity in the absence of concerns (e.g., 'I am positive'). In addition, from a social-emotional educational approach, these 2 sub-categories lend themselves to two likely separate categories to teach students.

Investigation of factor 3 and 7 identified that factor 3 related to anxiety items (e.g., 'I get worried'), while factor 7 related to happiness type items (e.g., 'I am happy'). On the basis of the above interpretations and excluding factor 4, the factor analysis identified the 6 sub-categories from the Six-Star Wellbeing Student Survey.

3.0 Reliability: Internal consistency

To determine internal consistency (Cronbach Alpha), a reliability analysis was generated on the whole scale and then for each of the six factors. Table 4 displays each factor, the number of items per factor, examples of the items, and the Cronbach Alpha. Note, the total scale Alpha was .96, which is excellent reliability for a significantly large ($N \ge 50$) scale.

Table 4

Factor	Example items	α	# of items	Scale mean (SD)
Positive	19. I am confident in myself			
	25. I am positive	.90	8	3.67 (0.94)
Mood	15. I am happy			
	8. I get worried	.86	9	3.41 (1.11)
Resilience	9. I think my effort counts			
	16. I can bounce back when things don't	.85	7	3.62 (.93)
	work out			
Engagement	4. I enjoy my school			
	17. I have friends at my school	.87	9	3.83 (1.13)
Communication	13. I listen well			
	49. My communication skills are good	.87	9	3.76 (1.09)
Relaxation	12. I can stay calm			
	36. I get upset easily	.86	8	3.62 (1.08)

Reliability (Internal Consistency) for the Six Factor Version

Reliability: Spilt-half reliability

A split-half reliability statistic was generated for this sample – the first half (24 items) were correlated with the second half of the test (26 items) to determine reliability of responses over the test. The statistic (t(14310) = .877, p< .001) indicates excellent split half reliability

Reading age

A "Readability Consensus" assessment with SPSS statistical analysis conducted on the 50 survey items determined that, based on 8 readability formulas, the reading age of the survey is 6-8 years of age. This corresponds to year 1 and is described as "very easy to read". 6.0 Predictive validity: Help-seeking and School-Counsellor support

Predictive validity is the extent to which a score on a scale predicts scores on some criterion measure. To determine predictive validity of the survey a specific separate data-set of 183 male students from one school completed the survey. In this case, the validity of the Six-Star Student Wellbeing Survey is assessed against the help-seeking behaviour and School-Counsellor support of students. The wellbeing scores for students who visited the school counsellor were compared to the wellbeing scores of students who had not met with any of the school counsellors. Data was determined from a report by the Head School Counsellor for *students that had at least one visit to a school counsellor*.

The results of the t-tests (see Table 5) indicate that the overall wellbeing scale score predicts help-seeking behaviour, with four sub-scales showing significant differences. There is a statistically significant difference between students who visited and did not visit the school counsellor in terms of Total Wellbeing score and scores on the subscales: Mood, Resilience, Engagement, and Positivity.

Table 5

Factor	Help seeking	N	Mean	t	df	р
	No visit	106	3.8340			
Mood	Visit	77	3.6247	2.626	181	.009*
Resilience	No visit	106	3.9764			
	Visit	77	3.7182	3.036	181	.003*
Engagement	No visit	106	4.2179			
	Visit	77	3.9143	3.562	181	.000**

Student t-test: Visit Versus Non-Visit Difference by Total Wellbeing and Six Sub-Scales

SIX-STAR STUDENT WELLBEING SURVEY

Total	No visit	106	24.1528			
Positivity	Visit	77	3.8870	2.038	181	.043*
	No visit	106	4.0642			
Kelaxation	Visit	77	3.8221	1.303	181	.194
	No visit	106	3.9349			
Communication	Visit	77	4.0104	1.913	181	.057
	No visit	106	4.1642			

** p < .001; * p < .05.

There is a statistically significant difference between students who visited and did not visit the school counsellor in terms of total wellbeing score and scores on the subscales: Mood, Resilience, Engagement, and Positivity. The best predictor of not visiting the counsellor is Engagement – which predicted mental health outcome in 62.3% of the sample (or 114 out of 183 students).

Predictive validity 2: Academic performance

Mid-year reports of students rated on academic performance by their subject teachers were correlated with Six-Star Wellbeing Survey sub-categories and overall scores. Results are reported in Table 6.

Table 6

Six-Star Wellbeing Sub-Categories Correlated With Academic Performance in 4 Subject Areas

Scale	English	Maths	Science	Physical Education
Positive	.317**	.166*	.295**	.219**
Mood	.177*	.107	.134	.152*
Resilience	.352**	.212**	.299**	.186*
Engagement	.292**	.147*	.219**	.364**

Communication	.217**	.137	.154*	.172*
Relaxation	.126	.049	.137	.105
Total	.293**	.161*	.244**	.243**

Note. N = 183.

** p < .001; * p < .05.

Overall, the total wellbeing score of this test is highly correlated (and predictive) of the teacher ratings of student academic performance. The main sub-categories that contribute are resilience, engagement, and positivity. The teacher rating on student performance in English (the core subject in all school curriculums) is the course that was most strongly associated with all sub-categories and the total wellbeing score

Predictive validity 2: Application ('attitude') rating

Mid-year reports of students rated on application or 'attitude' by their subject teachers were correlated with Six-Star Wellbeing Survey sub-categories and overall scores. Results are reported in Table 7.

Table 7

Six-Star Wellbeing Sub-Categories Correlated With Teacher Rating of Attitude in 4 Subject Areas

Scale	English	Maths	Science	Physical Education
Positive	.369**	.162*	.253**	.179*
Mood	.282**	.095	.130	.058
Resilience	.390**	.257**	.275**	.102
Engagement	.285**	.179*	.210**	.222**
Communication	.300**	.125	.163*	.084
Relaxation	.222**	.083	.110	.027
Total	.366**	.175*	.225**	.136

Note. N = 183

** p<.001; * p <.05

For teacher ratings of application to subject areas, resilience, positivity, and engagement were the main predictive sub-categories for scores. Again, the teacher quality rating for English had the strongest association with each sub-category and the total wellbeing score.

Concurrent validity: Overall wellbeing by year levels

One trend that has been identified with student wellbeing is a decline as students progress from primary education to secondary education (Burke & Minton, 2019). A oneway ANOVA of Total Wellbeing by year level (F(9) = 78.143 p <.001) shows that there is a significant decline in total wellbeing scores (Figure 1.). A total wellbeing score was determined from scores on all 50 items added, with a maximum possible score of 250 and a minimum possible score of 50.

Figure 1

Student Overall Wellbeing By School Grade Level



Further investigation of the trend of wellbeing from primary to secondary school was also conducted. A Scheffe post hoc analysis shows that primary school year levels (grade 4 to grade 6) are not significantly different from each other, but their wellbeing scores are significantly better than students at each of the secondary levels (see Table 8).

Table 8



Summary Table of Significant Differences Between Wellbeing from Different Year Levels

12 X X X

Note. X indicates a significant difference in wellbeing scores between the two year levels

Х

This table summarises the differences in year levels in terms of wellbeing. Wellbeing scores in primary year levels are significantly better than student wellbeing in their secondary school years.

Discussion

With research reflecting increasing concerns in the wellbeing space for students and young people (Australian Institute of Health and Welfare, 2018; Govendor et al., 2019; Lawrence et al., 2015; Soutter et al., 2014), schools can no longer afford to ignore the wellbeing and mental health concerns of their students. The utilisation of a multi-dimensional, universal social-emotional screening tool to provide feedback and guide interventions to schools on student wellbeing is a necessary step towards adequately addressing these concerns (Burke & Minton, 2019; Durlak et al., 2011). It has also been identified that the utility of such tools are enhanced by including both mental health and positive psychology domains (Moore et. al. 2019). The Six-Star Student Wellbeing Survey provides schools with a universal screening tool that delivers an objective measure of a student's wellbeing in a range of social-emotional subcategories. The tool captures both positive psychology domains and specific information on sub-clinical mental health that lend themselves to the planning of proactive wellbeing programs and the targeting of interventions. The tool also reports on individual students, as well as a variety of whole group and sub-group data.

The present study evaluated a multi-dimensional wellbeing screening tool for students from mid-primary (Grade 4) to upper secondary (Year 12). The survey is intended for universal use across a class, year level, or school setting. The 50-item Six-Star Student Wellbeing Survey demonstrated factors consistent with the survey sub-categories, very good reliability, and some predictive validity. The instrument appears to measure a unitary concept of student wellbeing and also has excellent split-half reliability. The instrument also showed positive predictive validity for students who visited an internal school counsellor. Additionally, some predictive validity was identified for academic performance and application to subjects as rated by teachers on mid-year reports. Finally, the instrument identified a deterioration in wellbeing as students progressed from primary to uppersecondary school.

Findings from factor analyses identified six-factors of the survey. The six factors identified yielded strong reliability, ranging from 0.85 to 0.90. Split-half reliability also showed good results, with a t-value of 0.88.

The specific aim of predicting which students were experiencing emotional or behavioural challenges in school was achieved by investigating students' wellbeing information and correlating it with use of student services (as measured by at least one visit to a school counsellor). A combination of mood, resilience, engagement, and positivity successfully predicted student visits, with engagement being the single best predictor, accounting for 62% of students who visited the counsellor. With regard to student's quality of work and attitude to work in mid-year reports, the survey also predicted teacher ratings. Resilience, positivity, and engagement predicted both attitude and quality of work. Investigation also revealed a significant decline in wellbeing scores as students became older or progressed through school.

The findings outlined in the results and summarised above reflect the suitability of the Six-Star Student Wellbeing Survey for meeting the demand for a broad multi-dimensional wellbeing screening instrument for students (Levitt et al., 2007). The information gathered through the survey allows schools to provide support and develop skills that facilitate personal development in students with low wellbeing (Tennat et al., 2007; Wyn et al., 2000). The tool may be used proactively to benchmark student wellbeing and to assess intervention

programs that are conducted within schools. In addition, the data gathered may provide information to school leaders and counsellors or relevant staff about students who may be more vulnerable to wellbeing concerns at any given point in time. One advantage of the tool is that it is a single instrument that can provides a variety of information on individuals and groups in an efficient timeframe (5 to 10 minutes). As a consequence, re-administering the survey at various points across the academic lifespan of a student becomes an appealing option for schools that also allows the simultaneous evaluation of interventions that have been implemented within the school.

The results from the present study should be interpreted in the light of a number of limitations. These include the limited size of the sample used to evaluate the validity of the instrument and the single gender of the participants. In addition, it is not known whether any of the schools that took part had conducted interventions that may have influenced the data. The time of year and context for administering the survey was also not controlled, as the survey was conducted independently by the participating schools.

One of the goals of the current study was to develop a wellbeing survey that lends itself to readily obtaining information on students regarding social-emotional topics. In addition, it was anticipated that such data could be utilised by internal or external professionals to conduct interventions and target them to the appropriate students. Traditionally, school psychologists and staff who are tasked with assisting students in the areas of mental health, wellbeing, and personal development are too often restricted to reactive roles. It is critical for such professionals to redefine their roles so as to become more proactive (Splett et al., 2013). In turn, the data and information generated from the survey will enable school staff charged with supporting students' emotional wellbeing to engage with students in non-traditional ways that are more akin to coaching. Additionally, the subcategory education is readily able to be adapted to be sui8table to specific age groups across the school life-span.

In conclusion, the Six-Star Student Wellbeing Survey was developed to be a userfriendly, universal, multi-dimensional, social-emotional screening tool that would appeal to schools through a unique combination of six relevant sub-categories. The six sub-categories of mood, resilience, school engagement, communication, relaxation, and positivity can be grouped together as a highly reliable unique cluster of factors that may be categorised as social-emotional wellbeing. Further, the intent was to be able to develop a tool that provided a combination of both sub-clinical mental health concerns and positive psychology factors in one survey, thus enabling schools to have important and relevant information available to them on individual students and groups over time. In addition, it was intended that the information collected should enable schools to develop preventative programs based on evidence. This would allow schools to better use resources and also to measure the effectiveness of personal development programs, either those currently in place or those they intend to conduct. While a number of areas warrant further investigation, the present results suggest that the current version of the Six-Star Student Wellbeing Survey has solid psychometric properties and will be able to provide professionals and schools with confidence in its implementation.

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