Relationships between Australian students' mental health and their perspectives of life at school.

Abstract

Purpose

This paper explores relationships between students' self-reported mental health and their perspectives about life at school in metropolitan Adelaide, South Australia

Design/methodology/approach

The Strengths and Difficulties Questionnaire (SDQ) and a purpose designed Living and Learning at School Questionnaire (LLSQ) were administered to 1715 early adolescents in school years 7, 8 and 9. Correspondence analysis, which is a perceptual mapping technique available in SPSS, was used to examine relationships between students’ SDQ subscale scores (emotional symptoms, hyperactivity, conduct problems, pro-social skills) and the LLSQ subscale scores (motivation, learning strategies, coping with schoolwork, bullying, numbers of friends, safety at school, and teacher intervention in bullying events).

Findings

The correspondence analysis produced a two-dimensional visual display (a perceptual map) showing that students’ abnormal, borderline and normal SDQ subscale scores were closely related to their low, medium and high LLSQ subscale scores, respectively. A clear Dimension
(Factor) emerged, showing a progression from mental health difficulties to strengths, in close association with students’ reports about their school experiences.

Research limitations/implications

Caution should be exercised when using the results to interpret events in other contexts. The limitations of self-report methods must be considered.

Practical implications

The two-dimensional visual display provides a powerful tool for dissemination of the findings of this study about students’ perspectives for system-level and school-based personnel. This can inform the selection of intervention programs, such as strategies for self-regulation of emotions and learning behaviours, fostering friendships, and supporting academic achievement, that are related to positive mental health.

Social implications

This paper can inform school-level policies and practices, such as those relating to professional development to support teachers’ and students’ capabilities (for example, to manage and prevent bullying) and thus influence the nature of the school experiences that shape students’ perceptions.

Originality/value
This paper adds students’ perspectives to the emerging field concerned with designing programs for mental health promotion in schools.

**Key words**

Mental Health, Health Promotion, Adolescents, Students, Schools.

**Introduction**

Around 20% of the world's children and adolescents are estimated to have mental disorders or problems, with about half beginning before the age of 14, and with similar types of disorders reported across cultures (WHO, 2014a). Sawyer *et al.* (2007) reported that 14% of Australian children and adolescents were identified as having mental health problems. Merikangas *et al.* (2010) reported similar statistics from the United States, and argued that the likelihood that common mental disorders in adults first emerge in childhood and adolescence highlights the need for a transition from the common focus on treatment to a much stronger focus on prevention and early intervention.

**Background**

Initiatives in this field for prevention and early intervention are often reflected in government policies. For example, during 1997-2011, the United Kingdom Department for Education promoted a National Strategy to develop student wellbeing and positive mental health through school-based programs such as the Social and Emotional Aspects of Learning (SEAL) program.
(DfE, 2014b). Recently, the United Kingdom government has announced that it will work closely with the Personal Social and Economic Health Association (PSHE) to assist schools with teaching students about mental health and to banish the stigma associated with mental health issues (DfE, 2014a). Meanwhile, the extensive activities of the Collaborative for Academic, Social and Emotional Learning (CASEL, 2014a) in the United States aim to achieve mandated social and emotional education in schools. In Australia, the National Mental Health Policy, the Fourth National Mental Health Plan and the Roadmap for National Mental Health Reform (DoH, 2014) identify promotion, prevention and early intervention for positive mental health as essential actions.

A settings-based approach to early intervention and prevention has been proposed, such as the health promoting school, and more recently, the mental health promoting school (WHO, 2014b, 2015). Schools are central in the lives of youths and families, can capitalise on the availability of children and youth, and have staff with the professional expertise to recognise and respond to the systemic and developmental nature of students’ social and emotional needs (Greenberg, 2010; Pullmann et al., 2013; Weare and Gray, 2003).

Mental health promotion initiatives in schools can make a positive difference. A meta-analysis of 213 universal social and emotional education programs in schools by Durlak et al. (2011) showed that, compared to controls, participants demonstrated significantly improved social and emotional skills, attitudes, behaviour, and academic performance. Similarly, Sklad et al. (2012) conducted a meta-analysis of 75 social and emotional intervention studies, finding
Improvements in students’ social and emotional skills, anti-social behavior, mental disorders, positive self-image, pro-social behavior, academic attainment, and substance abuse.

However, the results of mental health promotion interventions have not been consistently favourable. For example, very small effect sizes for desired outcomes in the SEAL program in secondary schools in the United Kingdom were reported by Humphrey et al. (2010). The authors suggested that these results appeared to be related to lack of structure and consistency in social and emotional education programs, un-monitored delivery, and an inadequate level of human and financial resources. Lendrum et al. (2013) suggested that whereas mental health initiatives can be effective in primary school settings, there are unresolved challenges in secondary school settings. Meanwhile, Weare and Nind (2011) commented upon Australian and European approaches to mental health promotion in educational settings, suggesting that those democratic, “bottom-up” approaches were failing to produce high quality evidence of successful outcomes. Weare and Nind’s analysis highlights that school leaders and teachers may variously interpret the need for, and application of, mental health promotion initiatives, and thus have a significant influence upon the fidelity, dosage and delivery of mental health policy and curricula (Domitrovich et al., 2008). This serves as a reminder that the impact of any externally designed intervention depends critically on characteristics present in end-users’ contexts. It is possible that the priorities of end-users might differ from the priorities of developers and system-level personnel coordinating the rollout of the initiative.
The perspectives of system-level personnel are necessarily broad. One typical approach is for developers to design or adopt an overarching conceptual framework to guide end-users’ thinking and practice. For example, the Australian KidsMatter Primary Mental Health Initiative (KidsMatter, n.d.) was developed by members of a consortium including the Department of Health, the Australian Psychological Society, the Principals Australia Institute and beyondblue [sic], (a non-government mental health promotion organisation) (KidsMatter, 2013). The KidsMatter framework for intervention follows from the World Health Organization model, which outlines risk and protective factors residing in the each person’s psychological world, family contexts and environments (Graetz et al., 2008; WHO, 2014b). KidsMatter identifies four components for active school-based intervention, namely, building a positive school community, social and emotional education for all students, parenting education and support, and early intervention for students at risk or experiencing difficulties.

However, when an end-user such as a school principal, or curriculum development team, or teacher, chooses a specific program within a framework such as KidsMatter, there may be tensions between the end-users’ and system-developers’ objectives. At the local level there may be a focus on certain situationally relevant components without recognition of a broader systemic view or the theoretical foundations of the program of intervention.

By way of example, KidsMatter schools are encouraged to select from a broad range of social and emotional education programs, keeping in mind their own contextual affordances and constraints (KidsMatter, n.d.). An evaluation of KidsMatter by Slee et al. (2009) included a
review of the programs selected by 100 participating schools. Slee et al. determined that many of the participating schools selected the BounceBack social and emotional education program. The KidsMatter Programs Guide (KidsMatter, 2012) indicated that BounceBack includes an explicit concern to integrate social-emotional education with academic content. Part of this academic content might be expected to involve attention to enhancing students’ learning strategies and academic motivation, in keeping with a focus on a self-regulatory framework that underpins the cognitive psychology and positive psychology used as the basis for BounceBack. However, some KidsMatter schools selected other programs, some with more emphasis on the psychological world of the child, some with more emphasis on social determinants, and some with less explicit integration between social, emotional, motivational and academic components of school settings. School leaders’ and teachers’ program choices were influenced by their perceptions of their own needs, previous experiences with programs, satisfaction or dissatisfaction with existing programs, and their interpretations of what they wished to achieve from running the KidsMatter initiative in their schools (Slee et al., 2009).

The different foci of school-selected intervention programs highlights that school settings are not only useful venues for rolling out mental health promotion initiatives, but that school settings are themselves social determinants of mental health. The different ways that schools (inter alia) arrange curriculum offerings, organise student groups, emphasise excellence, or respond to bullying, are particular to individual school settings, and conceivably will have particular potentials to influence students’ mental health.
From the review above it becomes apparent that there are a range of perspectives brought to mental health promotion in educational settings. However, the perspectives of one group of end-users of mental health promotion initiatives in schools are often missing: namely, those of students. In many schools, both the decision to initiate a mental health promotion intervention, and the delivery of the chosen program, are likely to be made without student involvement. However, research on the self-regulation of learning has made clear that students must adopt significant roles in directing the motivational, cognitive and metacognitive dimensions of their school lives (Mega et al., 2013; Winne, 2010; Zimmerman, 2002). A parallel requirement extends to students self-regulation of their social and emotional lives (Lawson and Askell-Williams, 2011).

Research on the importance of listening to the voices of students at a general level is now well-appreciated (e.g., see Cooper and McIntyre, 1996; Rudduck et al., 1997; Rudduck and Flutter, 2000). The emergence of mental health promotion in school curricula propels the need to understand more about students’ perceptions into this new realm of enquiry. Notably, Holfve-Sabel (2014) observed that the Year 6 students in her study were capable of expressing their attitudes towards school, teachers, peers and their well-being. Furthermore, Holfve-Sabel proposed that students’ attitudes are developed from experiences with both overt and covert components of schools, such as school ethos, connectedness, peer and teacher relationships, inclusivity, safety, teachers’ profiles and classroom environments.
Our point here is not that students should be decision makers in the same ways as principals and teachers. Rather, we see the need to consider students’ perspectives because they are end-users of the intervention. If we know more about how students’ perceptions of life at school interact with their mental health, then we will be better informed to provide advice to policy makers and educators (Roeser et al., 2000). Therefore, in this paper we report an investigation that examined students’ perceptions of their emotional, social, motivational, cognitive and metacognitive lives. Our research questions asked, What are students’ perspectives of life at school, and what are the relationships between their perspectives and their mental health and mental ill-health?

METHOD

Ethics

Approval for this project was granted by the Flinders University Social and Behavioural Research Ethics Committee and the South Australian Department of Education and Child Development. Informed parental and participant consents were obtained. Participation was voluntary and anonymous.

The Living and Learning at School questionnaire (LLSQ)

Motivation and Learning: Five motivation and 11 learning strategies Likert scale items were based upon Mayer’s (1998) framework of motivation, cognition and metacognition (see also Nelson, 1996; Schraw, 1994, 1998; Weinstein et al., 2010; Weinstein and Mayer, 1986).
Examples include, “I can get better at this subject if I put in the effort” and “I think about my thinking, to check if I understand the ideas in this subject”.

Coping with schoolwork: A single Likert scale item measured students’ assessment of their ability to cope with schoolwork. The concept of coping is well represented in the literature in areas such as coping with stressors (Brodzinsky et al., 1992; Frydenberg and Lewis, 1993), with school failure (Rijavec and Brdar, 1997) and with bullying (Slee et al., 2008).

Impact of Bullying: Five Likert scale items measured the Impact of Bullying, such as, “Because of bullying this year - I stayed away from school” and “Because of bullying this year - I couldn't concentrate on my schoolwork” (e.g., Rigby, 1999). In addition, students reported “How Often” they had been bullied that school year; “How Safe” they felt from being bullied; “How well” they were coping with bullying; and “What do teachers do?” when they see bullying.

Friendships: We asked students, “How many good friends do you have at school?” Friendships are an important influence on healthy psycho-social development: Friends provide validation of aspirations, trepidations and interests, contribute to a general sense of social acceptance and are correlated with frequency of being bullied (Hodges et al., 1999; Slee and Rigby, 1993).

Most like you at school: Students answered a single item, “Which is most like you at school?” containing response options of seven pictorial representations of happy to sad faces (emoticons) (see Andrews and Withey, 1976; Slee and Rigby, 1993).

The Strengths and Difficulties Questionnaire (SDQ)
The SDQ is a widely used child and youth mental health screening instrument (Woerner et al., 2004) and is also used in research about school students’ mental health (Goodman, 2001; Goodman et al., 1998; Muris et al., 2004; Slee et al., 2009). Warnick et al. (2008) reviewed 32 studies and concluded that the SDQ is an efficient screening instrument for the identification of psychiatric disorders in young people. The SDQ has been used in large-scale studies in Australia such as the Every Family study (Sanders et al., 2005). It is considered suitable for gaining a broad assessment of the mental health status of students (Levitt et al., 2007) and is recommended as a headline indicator for gaining a broad assessment of the mental health status of Australian children (AIHS, 2012).

The self-report version of the SDQ (ages 11-17) consists of 25 items that measure students’ mental health with response alternatives of “not true”, “somewhat true” and “certainly true”, to the four difficulties subscales of Emotional Symptoms (e.g., I am often unhappy, downhearted or tearful), Conduct Problems (e.g., I get very angry and often lose my temper), Hyperactivity (e.g., I am restless. I cannot stay still for long), and Peer Problems (e.g., I am usually on my own). The SDQ also includes a strengths subscale, Pro-Social (e.g., I try to be nice to other people), that is not included in the total SDQ difficulties score.

We conducted a pilot study that reviewed all questionnaire items with a small group of non-participating students to check for item interpretability. We were satisfied that students understood and could respond to the items.

Participants
The LLSQ and the SDQ were administered to 1715 Year 7, 8 and 9 students attending three metropolitan secondary schools located in low to upper-middle class socio-economic catchments, in South Australia. The Year 7 students, drawn from approximately 21 local primary schools, were attending the secondary schools on their “Transition to Secondary school” program. The Year 8 and Year 9 students were in the first and second years of secondary school respectively.

The response rate to the questionnaires was 80.9%. Questionnaires with invalid responses were discarded, so the final useable sample comprised 1375 students. Participants were 11 to 15 years old ($M = 13.4$ years, $SD = 0.94$). Gender was well balanced (males 51.2%). Nine per cent of students reported that their parents spoke a language other than English at home. Year 7 students comprised 40.1% of the sample, with Year 8 students at 32.1%, and Year 9 students at 27.8% respectively.

Data preparation

The Motivation, Learning Strategies and Impact of Bullying items were subjected to principal components analysis (PCA$^1$) using SPSS, confirming well-fitting factors that explained 48%, 52% and 55% of the variance respectively. Mean scores were calculated to provide a Motivation score, a Learning Strategies score, and an Impact of Bullying score for each student.

We ran null models for each of the LLSQ variables using Hierarchical Linear Modelling (V7) in order to determine whether the clustering of students by school influenced their
responses. The intraclass correlations ranged from .003 to .008, indicating that school-level influences were very low and therefore multilevel modelling was not required.

The SDQ three-point response scale is at best ordinal, and the SDQ responses in the current sample were highly skewed (as expected in a non-clinical population), thus violating parametric assumptions for traditional statistical tests. However, given the large sample size, we considered it appropriate to test the factor structure of the SDQ using PCA (StatSoft, n.d.). The factor structure of the SDQ with our sample sufficiently replicated the factors proposed by Goodman (Youth in Mind, 2013a) and by Mellor (2005) with an Australian sample, indicating that our data was suitable for further analysis.

**Correspondence Analysis**

We used correspondence analysis, which seeks to uncover a low-dimensional representation of pre-determined categories in a two-way contingency table (Hair *et al.*, 1995). A well-known example of correspondence analysis is Bourdieu’s (1979/1984) work *La distinction: critique sociale du jugement*, which investigated (inter alia) relationships between aesthetic tastes and social capital. Other examples include the identification of cross-cultural patterns of attachment (van IJzendoorn and Kroonenberg, 1988), the epidemiology of dietary behaviours (Guinot *et al.*, 2001) and profiling personality types (Nishisato, 1994). Correspondence analysis is similar to PCA, in that it searches for a conceptually meaningful, low-dimensional solution. One strength of correspondence analysis, for research in the social sciences, is that it can deal with frequency data that does not meet parametric data assumptions. Therefore, the skewed nature of our SDQ
data, given that most students were categorised into the normal mental health group, did not pose problems with this technique (Greenacre, 1984; Nishisato, 1994).

Correspondence analysis employs chi-square distances to calculate similarities between frequencies (counts) in each cell in a contingency table. Pairs of cells that have observed and expected values that are similar are considered to be independent of each other. Conversely, pairs of cells that have observed and expected values that are dissimilar can be investigated further to identify patterns of interdependence. (Greenacre, 1984; Nishisato, 1994). The researchers’ task in the analysis of a correspondence analysis solution involves the selection of the appropriate number of dimensions and interpreting the meaning of those dimensions (Hair et al., 1995).

The first step in undertaking a correspondence analysis is to create a contingency table. We used Goodman’s (Youth in Mind, 2013b) prescribed method to score students’ SDQ responses, and then we categorised students into normal, borderline and abnormal mental health groups based upon Goodman’s recommended categories and cut-off scores. Then, we calculated the number of students in each of the SDQ categories of normal, borderline and abnormal mental health for each of the five SDQ subscales of Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems and Prosocial Behaviour.

Next, for each of the LLSQ variables, we used the visual binning procedure in SPSS to categorise students’ scores into high, medium, and low groups, according to the meanings of anchors of each Likert scale\(^2\). Finally, we created a contingency table of all variables, with the
SDQ groups in the rows, and the LLSQ variables in the columns, of the table. In addition, we included Schools A, B and C as supplementary column variables. An extract of the contingency table is shown in Table 1, showing, for example, that 510 students with scores categorised into the normal Conduct Problems group, 40 students in the borderline Conduct Problems group, and 73 students in the abnormal Conduct Problems group indicated that they Always Felt Safe at school.

Insert Table 1 about here

We used multiple correspondence analysis with symmetric normalisation to identify relative distances between all variables in the analysis. The significant Chi Square ($\chi^2$) (406) 2571.9 $p < .0001$ indicated the viability of proceeding with interpreting the correspondence solution. A singular value of 0.179 was obtained for the first dimension, which accounted for 77% of the variance in the solution. The singular value for the second dimension was lower, at 0.07, accounting for 13% of the variance in the solution.

Most variables were well-fitted in the two dimensional solution, with the exception of some medium-level categories of variables related to bullying, which were better represented in higher dimensions of analysis, such as dimensions 3, 4 and 5. The higher dimensions accounted for small amounts of variation and tended to be variable specific. Therefore we selected the two-dimensional solution for interpretation and reporting in this paper.

Results 1: The SDQ and LLSQ
Eighty per cent of students were categorised in the normal category of the SDQ, 12% in the borderline category, and 8% in the abnormal category. This distribution of scores on the SDQ is similar to that found in other studies (e.g., Slee et al., 2009).

Taking together all of the variables of the LLSQ, a MANOVA showed that there was a significant effect of gender \( F(9,550) = 8.54, p < .001 \). In addition, there was a significant effect of year-level \( F(9,551) = 6.83, p < .001 \). There was no overall interaction effect for gender x year-level. Follow-up ANOVAs for gender and year-level with each of the outcome variables are reported in Table 2.

Insert Table 2 about here

From the upper section of Table 2, gender, it can be seen that the mean scores for the Motivation variable were relatively high on the 7-point scale. However, the mean scores were only slightly above the mid-point for the Learning Strategies variable. The mean scores for the other variables were also relatively high. Differences between mean scores for boys and girls were statistically significant at \( p < 0.01 \) for Learning Strategies, Coping with Schoolwork and Most Like You At School. However, the latter was the only variable with a substantive effect size (\( r = .26 \)), with girls reporting higher happiness scores.

From the lower section of Table 2, year-level, it can be seen that significant differences \( (p < .01) \) occurred for five of the nine variables. Multiple comparisons between each year-level and each variable showed that the differences, in nearly all cases, were because the Year 7
students gave more positive responses than the students in higher year-levels, with small effect sizes, with the exception of the variable Most Like You, which had a substantive effect size of $r = .26$.

Although the mean scores give an overall indication of the level of students’ responses, and paint a relatively positive picture (with the exception of Learning Strategies), our main interest in this study was to identify whether students’ who were categorised into the different mental health groups (normal, borderline and abnormal) generated different patterns of responses to the LLSQ variables. For this we turned to correspondence analysis.

**Results 2: Correspondence analysis**

Figure 1 is the visual display (perceptual map) produced by the correspondence analysis solution. It can be seen that variables are displayed in a two-dimensional space, at relative distances to each other, with closer distances indicating closer relationships.

The lower left hand quadrant of Figure 1 shows that two variables, No Friends and Low Motivation, are relatively close to each other, and relatively distant from all other variables. Also
in the lower left quadrant is a cluster of variables that include, from the SDQ, the abnormal and borderline categories of Emotional Symptoms and the borderline category of Peer Problems. These SDQ categories are situated relatively closely to variables that indicate high Frequency of Bullying, high Impact of Bullying, low Coping with Bullying and not Feeling Safe at School. The LLSQ variable One Friend and the SDQ variable abnormal Peer Problems are also located in this area. Taken together, the variables in this quadrant show close relationships between low levels of friendships, bullying, low school motivation and the problematic categories of the Emotional Symptoms and Peer Problems subscales of the SDQ.

The upper left hand quadrant of Figure 1 shows a cluster of variables including the abnormal and borderline categories of the SDQ subscales Prosocial, Hyperactivity and Conduct Problems, associated with medium level categories of Motivation, Coping with Schoolwork, and Like You at School. Interestingly, in this quadrant is the variable that indicates that students in these categories perceive that Teachers Don’t intervene when they see bullying. Also in this quadrant, at the left of the X axis (Dimension 1) are the low categories of the variables Learning Strategies, Coping with Schoolwork and Like You at School.

To the right of the X axis (Dimension 1) are the normal categories of the SDQ variables, in close association with the positive school variables related to high Coping with Schoolwork, high Coping with Bullying, low Frequency of Bullying, having Friends, Feeling Safe and Teachers Always Act when they see bullying.
Whilst all of the problematic SDQ categories lie at the left-hand side of Dimension 1, it can be seen that, along the Y axis, (Dimension 2), Peer Problems and Emotional Problems are in the lower quadrant whilst Conduct Problems and Hyperactivity are in the upper quadrant. These SDQ subscales can arguably be divided into internal and external expressions of mental health difficulties. The internal subscales are relatively closer to None or One Friend, and the indicators of Bullying. Meanwhile, the externalising SDQ subscales of Hyperactivity, Conduct Problems and Social Difficulties are associated with difficulties Coping with Schoolwork, low Learning Strategies and the perception that teachers Don’t Act when they see bullying. Although Dimension 2 accounts for a relatively smaller amount of the available variance, it does appear to capture experiences in coping with personal psychological difficulties in the lower portion of the display, compared to experiences in coping with the demands of school in the upper portion.

Lastly, it can be seen that the three Schools, marked as triangles A, B and C in Figure 1, align along Dimension 1. Schools A and B are very close to the centroid, and to the normal categories of the subscales of the SDQ. However, School C is somewhat more to the left-of-centre along Dimension 1, and therefore is closer to the borderline categories of the subscales of the SDQ.

**Discussion**

Our descriptive analysis showed that students’ scores were relatively positive with negligible or small effect sizes for differences between school year-levels and gender, with the exception of females showing a substantive effect size for being happier at school. Possible
causes for gender differences might include involvement in bullying (Skrzypiec et al., 2012),
school engagement and academic success (Kessels et al., 2014). Whereas academic self-concept
has been found to be related to school satisfaction (Huebner, 1994), a review of a number of
studies about academic self-concept by Gogol et al. (2014) found that different authors have
variously reported, no gender differences; higher for boys; and higher for girls. Meanwhile, the
small but significant year-level effects may reflect the fact that the Year 7 participants were still
located in arguably more nurturing, and less competitive, primary schools, compared to the
secondary school experiences of the Year 8 and 9 students.

Dimension 1 in the correspondence analysis solution, (see Figure 1) indicates a pattern of
progression from mental health difficulties to mental health strengths in association with
students’ perceptions of their experiences at school. The co-location of high SDQ difficulties
scores with variables amenable to prevention and promotion programs, and conversely, the co-
location of low SDQ difficulties scores with strengths variables, lend support to curriculum
frameworks that advocate multi-faceted approaches to school-based mental health promotion
initiatives. These include programs to prevent bullying (Slee et al., 2008); support students’
feelings of safety (Gregory et al., 2010; Thapa et al., 2013); support the development of social
and emotional capabilities (CASEL, 2014a, 2014b; KidsMatter, n.d.); and support academic
achievement (Roeser and Eccles, 2000). Identification of the pattern of associations among these
different facets of students’ school lives reinforces the arguments noted above about the need for
school mental health interventions to address these many facets in a coherent manner, which
includes recognising and responding to students’ perceptions of those facets.
Co-relationships between bullying and mental health are documented in the literature (e.g., Gini and Pozzoli, 2008; Kaltiala-Heino et al., 2000; Nansel et al., 2004; Slee, 1994, 1995). Our study provides replication, drawing from students’ perspectives and using a different type of analysis, of those findings. Recently, Skrzypiec et al. (2012) discussed the role of friendships in positively mediating relationships between bullying and mental health. The three-way relationship proposed by Skrzypiec et al. is supported by the relatively close distances between the variables displayed in Figure 1.

Our findings of close relationships between students’ reports about their mental health, their perceptions about feeling safe, and their perceptions of their teachers’ interventions to prevent bullying, are less well documented in the literature. A study by Wyra et al. (2011) indicated that teachers may not feel well-prepared, and indeed might not feel safe themselves, when intervening in inappropriate student behaviour during break-times in the school yard. Ways of better equipping teachers to intervene to support students in bullying/safety situations warrant further investigation to facilitate mental health promotion and early intervention in schools.

In particular, we note from Figure 1 the relationships between positive mental health and academic motivation and learning strategies, that have also been suggested by Roeser and colleagues’ extended program of work (e.g., see Roeser et al., 1998). Recently, Holfve-Sabel (2014) reported a strong correlation of .78 between students’ self-reports of their learning and their wellbeing. Students who find themselves performing poorly in environments that value academic achievement could be expected to experience negative impacts upon their mental
health. Although building students’ capacities for self-regulated academic performance is a component of some frameworks for mental health promotion (such as CASEL), we have found limited evidence of mental health promotion programs explicitly attending to issues such as learning strategy capacity building (e.g., learning strategy interventions; increasing students’ metacognitive monitoring and control; attribution retraining). Promoting students’ capacities with a view to strengthening not only their knowledge of how to manage their learning, but also to develop knowledge of how to manage their social and emotional capabilities, could receive more research attention. In this context it would be useful to investigate the nature and degree of transferability of skills of self-regulation between emotional, social and academic domains.

A final point of note is that the students in this study were of relatively similar cultural backgrounds, and showed little school-level differentiation with respect to their responses to the LLSQ variables. However, the correspondence analysis showed that responses from participants in School C, which is located in a lower socio-economic area than Schools A and B, showed closer relationships with the borderline sub-categories of the SDQ, and were also closer to concerns about safety and bullying. Although this finding was not extreme, it does point to potentially variable influences of individual school contexts on students’ mental health.

Limitations

This study is of a sample of students drawn from three South Australian secondary schools and their feeder primary schools. Caution should be exercised when using our findings to interpret events in other contexts. Furthermore, this study relies upon self-report, which may include
participant blind spots and desire to satisfy the researcher (Muijs, 2006). However, there are many arguments in favour of self-reports. Zeidner (1998, 2007) argued that when investigating participants’ thinking and feeling, self-reports provide the most direct access. Self-reports provide the best window on the mind (Weinstein et al., 2010). Indeed, Baumeister et al. (2007) proposed that self-reports may be the only viable technique for enquiring about a person’s experiential states and thinking. Zeidner (2007) argued that on the whole, self-reports demonstrate good psychometric properties and are simple to administer. Similarly, Desimone (2009) found that where the variables in self-reports are carefully matched to alternative methods such as observational data, self-reports have been found to be valid and reliable.

Conclusions

This paper draws attention to the role of schools both as social determinants of mental health and as strategic settings for mental health promotion. We argue that an important source of information for the design of school-based mental health promotion interventions comes from students, although their voices in the design of mental health promotion curricula have been largely over-looked. We used correspondence analysis to generate a visual display (perceptual map) that shows a pattern of progression from mental health difficulties to strengths, in association with students’ perceptions about friendships, bullying, teachers’ actions, motivation and learning strategies. The students’ perceptions profiled in our correspondence analysis imply that students’ understandings about both positive and problematic parts of their school lives, both social-emotional and academic, are quite well developed. Explicit recognition and discussion of
these understandings with students may provide students with ways to more effectively self-regulate their complex school lives.

As a final note, the easily accessible visual display provided in Figure 1 has the potential to be a powerful tool for dissemination, to system-level and school-based personnel, of the findings of this study. Effective methods of dissemination of research findings are essential if the research to practice gap is to be bridged (Sleeter, 2014).

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Insert Appendix A here (Table 3)
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Table 1: Gender and year-level differences in Living and Learning at School Questionnaire Variables

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<th>Variables</th>
<th>Score range</th>
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<td>0.55</td>
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<td>0.52</td>
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<td>0.64</td>
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<td>Which (emoticon) is most like you when you are at school</td>
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<td>How many good friends do you have at your school?</td>
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<td>0.6</td>
<td>0.03</td>
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<td>How often this year have you been bullied or harassed by a student or students at school?</td>
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<td>1.26</td>
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<td>How safe do you feel from being bullied or harassed at this school?</td>
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Overall, how well do you cope with bullying or harassment at school?

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<th>P Value</th>
<th>F Value</th>
<th>df</th>
<th>P Value (F)</th>
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Impact of Bullying

<table>
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<th>P Value</th>
<th>F Value</th>
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<td>Year 7</td>
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<td>0.81</td>
<td>0.06</td>
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Table 2: Extract from the Contingency Table displaying SDQ variables in the rows and Living and Learning at school variables in the columns

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<th>Safe Always</th>
<th>Frequency Bullying</th>
<th>Cope with Bullying High</th>
<th>Teachers Always Respond</th>
<th>Cope with Schoolwork High</th>
<th>Friends2_3_many</th>
<th>Variables Continued</th>
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<td>57</td>
<td>71</td>
<td>32</td>
<td>53</td>
<td>147</td>
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<td>56</td>
<td>39</td>
<td>43</td>
<td>112</td>
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<td>529</td>
<td>500</td>
<td>439</td>
<td>632</td>
<td>954</td>
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<td>618</td>
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<td>480</td>
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<td>485</td>
<td>468</td>
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<td>603</td>
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<td>102</td>
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<td>469</td>
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Table 3 (Appendix A): Principal Components Analyses of scales in the Living and Learning at School questionnaire and the Strengths and Difficulties Questionnaire

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<th>Scale</th>
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<th>KMO</th>
<th>% Variance explained</th>
<th>Cronbach's alpha</th>
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<td>0.796</td>
<td>54.71</td>
<td>.834</td>
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<td>.696</td>
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<td>SDQ (4 factors: difficulties only)</td>
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</table>
Fig. 1: The correspondence analysis solution showing distances between variables along Dimension 1 on the X axis and Dimension 2 on the Y axis.
1 See Appendix A for details of the PCA and Reliability analyses

2 For example: Strongly Disagree and Disagree = Low; Slightly Disagree, Neutral, Slightly Agree = Medium; Agree and Strongly Agree = High.