Working above standard in literacy and numeracy in primary school

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Despite an historical recognition that research is lacking on the occurrence of school students' academic regression after a period of over-achievement, there continues to be little research conducted into the phenomenon. In particular, there is little research that examines the phenomenon from the perspective of students. The *Working Above Standard Project* (WASP) explored what was happening for students at a rural Victorian primary school who were, at the time of the study or at some stage in their primary schooling, identified as "working above standard" (WAS) in literacy and/or numeracy. This mixed method study was initiated by the school, and two staff members formed a research team with three university researchers for 12 months in 2017. Phase 1 involved the identification of students who had at some stage been identified as WAS in literacy or numeracy using analyses of data that the school had collected for student monitoring purposes. Analysis of student data led to the identification of twenty students in year 6 as meeting the WAS definition, and these students were invited to participate in a qualitative online survey. Three factors were found to be important to the students in the WASP: social interaction and friendships; teachers; and having a sense of belonging to the school through art, drama and sport.

Introduction

The *Working Above Standard Project (WASP)* explored what was happening for 20 Year 6 students at a regional Victorian primary school (hereafter referred to as "the school") who were at the time of the study, or at some stage in their primary school career, identified as *working above standard (WAS)* in literacy and/or numeracy. The overall aim of the project was to attempt to understand why students can be identified as *WAS* in literacy and/or numeracy, as measured by standardised tests, at one or more points in their primary school career and perhaps not at others. In this paper, we report and discuss the trajectories of the 20 students, who were identified as *WAS* at some stage during their primary school years, and draw on their perspectives to identify possible explanations for changes in their trajectories. Students in this study were considered to be *WAS* if, based on available school data, they were working at a level consistent with expected performance 12 months or more above their current grade level. School data consulted included: *National Assessment Program – Literacy and Numeracy* (NAPLAN) test data for Years 3 and 5; and the *Progressive Achievement Test* (PAT) scores for Comprehension and Mathematics.

The school sought collaboration with the authors' University in the design and implementation of the study. Initial evaluations of NAPLAN data by the school had identified a potential pattern of student academic regression from one NAPLAN assessment to the next and provided the foundation theme for this project. The students'

perspectives were sought to address an identified deficit in the literature. Despite a common recognition of the importance of early intervention when addressing academic underachievement, the limited literature available on this subject was void of subjective input from primary school students.

Literature review

More than 50 years ago, Shaw and McCuen (1960) identified a deficit in research investigating the phenomenon of "bright" children who were underachievers at school, and advised "a need for the early identification of underachievers" (p. 107). These researchers concluded that more research was needed to identify factors which influence academic achievement, and suggested the focus should be on the parents of underachieving students, the school environment, and developmental differences between genders. In the nearly sixty years since, there has been a plethora of research on factors influencing academic outcomes for all students, using a variety of research methodologies. However, there is a dearth of research from the perspective of the students themselves. A recent case study analysis of two Year 7 students from a New South Wales high school (Bennett-Rappell & Northcote, 2016) seems the only recent, available research which has included students' perspectives. Factors historically accepted to influence academic outcomes include: intelligence (cognitive and emotional); personality and attitude towards school; academic self-efficacy; social relationships; socio-economic factors and possible impact on opportunities to engage in art and sporting experiences; gender; and teachers' pedagogic practice. Those factors most relevant to our study are discussed below.

There is a general acceptance among researchers that cognitive abilities involved in academic learning share a common core, referred to as the *g-factor* or *general intelligence* (Baumert, Lüdtke, Trautwein & Brunner, 2009). People with high cognitive abilities in one domain have a tendency toward high cognitive ability across a spectrum of domains. Thus the concept of intelligence refers to cognitive abilities, or learning potential, rather than a measure of academic ability (Baumert et al., 2009). Intelligence testing is not undertaken routinely in Australian schools, and is more likely to be utilised to assess a specific aspect of cognitive function, for example when giftedness or a particular cognitive deficit is suspected (Chesters & Daly, 2015; Prifitera, Weiss & Weiss, 2008). Emotional intelligence is another form of intelligence which is posited to influence students' academic outcomes (Vahedi & Nikdel, 2011). This form of intelligence monitors the self-regulation of behaviour and self-control, and the ability to accurately interpret others' behaviour, apply discriminate behavioural meaning and respond appropriately. Impairment of emotional intelligence has a detrimental effect on students' peer relationships as they fail to respond appropriately in group situations or to monitor their behaviour in acceptable ways (Vahedi & Nikdel, 2011). This results in negative school experiences and poorer academic outcomes (Poropat, 2009).

Personality traits in general, and c*onscientiousness* and *openness* in particular, have been empirically found to have a significant influence on students' academic outcomes (Caprara, Vecchione, Alessandri, Gerbino & Barbaranelli, 2011; Poropat, 2009). Despite

this, personality testing is not usually advocated in schools in the assessment of student ability or aptitude. A meta-analysis of the five-factor personality model and academic performance reasoned the complexity in obtaining reliable and valid personality assessments across age and stage development processes as a plausible explanation that personality testing was not employed in schools (Poropat, 2009). Primary school children demonstrating higher conscientiousness and openness will possess greater social desirability, influencing their relationships with both their peers and their teacher. Grading systems which rely on teacher observation can also be influenced by social pressures and bias related to social desirability. Additionally, younger students who exhibit greater extraversion may benefit from increased visibility in the classroom (Poropat, 2009).

Academic self-efficacy is the belief students have in their ability to achieve successful academic outcomes at school (Klassen & Usher, 2010). Since the inception of Bandura's (1997) self-efficacy and social cognitive theories, academic self-efficacy has been correlated with successful academic outcomes for all students (Caprara et al., 2011; Klassen & Usher, 2010; Usher & Pajares, 2009). *Academic self-efficacy*, *personality* traits and virtues, and other motivational components which may be a reflection of attitudes toward learning can have as great an influence on learning as cognitive ability (McKenna, Conradi, Lawrence, Jang & Meyer, 2012). Mastery experience, or past performance experience, refers to previous tasks which have either been successful, or failed, and has been shown repeatedly to be the most influential of Bandura's empirically supported sources of academic self-efficacy (Bandura, 1997; Klassen & Usher, 2010).

Positive student-peer and student-teacher social relationships developed in primary schooling have also been demonstrated to have a protective influence on higher achieving students' resilience as they transition into their first year in high school (Langenkamp, 2010). The protective mechanism does not appear to operate for students who have been low-achievers in primary school, suggesting that the social relationships formed in primary school are a significant protective factor against regression in the first year of high school.

A correlation between family socio-economic status (SES) and student academic performance has been consistently reported (Chesters & Daly, 2015; Marks, 2014; Schwartz, Lansford, Dodge, Pettit & Bates, 2013). Marks' (2014) analysis of NAPLAN data found lower SES to account for between 9 and 16 percent of variation on achievement scores in Years 3, 5 and 7. However, more recent research on the influence of SES on educational outcomes for primary school children found the effects of SES to be quite small after cognitive ability and prior achievement had been accounted for (Marks, 2017). These findings are consistent with those of a meta-analysis of 36 studies on parental involvement and student outcomes which did not discount the influence of family socio-economic status on student outcomes, but found repeated evidence "that the most accurate predictor of student achievement is the extent to which the family is involved in the child's education, and not the family's level of income" (Vahedi & Nikdel, 2011, p. 334). The evidence suggests that family socio-economic status has an influence on academic outcomes, but the influence is indirect, acting as a mediator or moderator for other processes.

Gender differences in cognitive processing have been scientifically validated at every level of neuro-functional analysis, from single cells to complex system processes (Andreano & Cahill, 2009). Models of learning purport males perform better on spatial tasks, and females on verbal tasks (Andreano & Cahill, 2009). While the female-verbal/ male-spatial generalisation has been demonstrated in NAPLAN assessments (Chesters & Daly, 2015; Marks, 2014) it is not a reliable representation of the variances (Andreano & Cahill, 2009). For example, neuroimaging studies demonstrate a difference in cognitive processing between sexes for only *some* language tasks despite females demonstrating substantially better test results. Also, females perform better on some *specific* spatial tasks. While neuroimaging cannot assess all aspects of learning and memory, a demonstrable difference between the sexes exists (Andreano & Cahill, 2009). However, it is inconclusive how much of the difference in learning is attributable to organic processes, re-igniting the nature versus nurture argument.

The work of John Hattie (2009) concluded that the students themselves and the teacher were the two most important factors influencing success at school. The school itself was less important (Hattie, 2009). Specifically, what is taught is often less important than how it is taught. Evaluation of teachers' social skills and emotional intelligence has increasingly become a focus for educational researchers (Jennings & Greenberg, 2009). The benefits of fostering high levels of social and emotional competence in teachers include better teacher-student relationships, the creation of a learning environment which is conducive to learning and student development, and higher quality teaching as staff suffer less from stress and burnout. The management of children displaying disruptive behaviour in a classroom is one example where teachers' emotional intelligence is a significant aspect of the learning environment (Jennings & Greenberg, 2009).

Each of the above factors has been firmly established as a contributor to academic outcomes, and it was not the intention of the current study to challenge these. The study discussed in this paper identified a deficit in what is known from the students' perspective, and provided an opportunity for further research through demonstration of the capability of primary school students to make valid evaluations of their learning environment. Educators at the school where the study was initiated made a judgement early in the project that the students were developmentally capable of making a meaningful contribution. This is theoretically supported (Long & Bonds-Raacke, 2012) and influenced the design of the project.

Theoretical underpinnings

The chronological age of students within the same year level has been found to have no significant impact on reading acquisition before Year 4 (Long & Bonds-Raacke, 2012). However, according to Long and Bonds-Raake (2012), who applied Piaget's stages of cognitive development as the lens of analysis within their study, at Year 4 a positive correlation between age in months and reading ability becomes apparent. Piaget's theory proposes that, allowing for individual rates of progression through developmental milestones, children transition to the *concrete operational* stage between 102 and 112 months

of age. This stage is characterised by increased cognitive functioning and the beginning of the capacity for abstract thinking, and evaluation of choices and their resultant consequences (Piaget, 1972).

Neo-Piagetian theorists expand on Piaget's theory by relating cognitive stages of development to social interactions and imitation of others (Case, 1992), culture, and experience (Bidell & Fischer, 2000). It seems rational that by around the age of 10 years, students are able to give a subjective account of their school experience, and offer feedback on factors they consider to enhance their learning experience. However, research of this kind is difficult to locate. Researchers have sought qualitative input from students as young as 10 years on topics such as perception of classroom technology (Hall & Higgins, 2005), but none could be located which asks for younger students' subjective input on their academic experience. Qualitative educational studies of primary school students were scant, and those that could be sourced appeared to prefer the input of parents over students (Muste, 2015). Students' subjective input appeared to be sought only after they progressed to high school (Gentilucci & Muto, 2007) or university (Joseph & Joseph, 1997). Given the broadly accepted credibility of early intervention, it is suggested that younger students' perspectives should be an integral part of pedagogic evaluation. The *WAS* study attempted to shed light on students' perspectives of this phenomenon and the findings demonstrate the potential of primary aged children to make a worthwhile contribution to this type of research. Additionally, consistency of themes within groups suggest valid and reliable contributions from the young students. All of the students directly involved in the current study would be classified as having reached concrete operational stage of cognitive development.

Vygotsky's sociocultural theory of cognitive development places emphasis on the role that social interaction plays in cognitive development and learning motivation (Vygotsky, 1987) and is another appropriate lens with which to view the progress of these students. Vygotsky's posits that the collaborative learning which occurs when positive social interactions take place between students and significant others has a significantly positive influence on learning, allowing the student to achieve a greater level of academic achievement than they otherwise would (Vygotsky, 1997). Social interaction as a scaffold for learning is further supported and explored in the work of Wood, Bruner and Ross (1976) and Wood (2003). This factor will be considered further in the discussion of the results.

Method

The research was conducted in an Australian primary school setting (Foundation to Year 6) in rural Victoria. The school comprised 174 students and 18 teachers at the time of the study. These numbers had been stable for a number of years reflecting the number of school aged children in the catchment area. In this research, we chose to restrict participation to the Year 6 student cohort. The students in this cohort were at an age where they are considered to have reached Piaget's concrete operational stage of cognitive development. The longitudinal data for this cohort also afforded the greatest degree of

insight into their primary schooling. Additionally, participation was restricted to those Year 6 students who had been enrolled at the school for the entirety of their primary schooling. Ethics approval for the project was granted by the appropriate school authority in accordance with policy guidelines and by the Charles Sturt University Human Ethics Committee (Approval number H17161). Approval was first granted for Phase 1 and then a second approval granted for Phase 2.

A sequential explanatory mixed methods design (Creswell & Creswell, 2018) was employed to conduct this research. The first phase involved examining existing quantitative data held by the school in the form of students' test scores. Specifically, we examined students' *Progressive Achievement Test* (PAT) results in Comprehension and Mathematics and their *National Assessment Program - Literacy and Numeracy* (NAPLAN) test scores. The use of data readily available at the school is empirically supported as an efficient and effective research method (Kaniuka, Vitale & Romance, 2013). Students' PAT scale scores for Mathematics and Comprehension were examined as these scores can be used to monitor progress over time. It was decided to start with the PAT data as these data were collected annually at the school and the results are equated onto a common scale using Rasch scaling methodologies (Bond & Fox, 2015). This means that within a learning area, PAT scale scores could be compared directly between tests across different year levels.

As discussed earlier, the Year 6 cohort was selected as the focus cohort enabling access to their numeracy results retrospective to Year 1 and literacy results retrospective to Year 2, and allowing for the tracking of student results longitudinally. This cohort's test data were examined and results used to assist with the identification of students who were *WAS*. The total number of students identified in this process were 14 *WAS* students from the PAT Mathematics data and 18 *WAS* students from the PAT Comprehension data. Some students were identified across the two groups and 20 students in total were identified as belonging to one or both groups. We further examined these students' test data to determine when or how often they were *WAS* across the testing occasions.

Three categories of *WAS* were identified to categorise the students in this study. The first category, '*consistently WAS'*, represents those students who appeared to be consistently working above standard across the testing occasions. The second category, '*up/down WAS*', represents those students who fluctuated in terms of working above standard (i.e. one year they were *WAS*, the following year no longer, the subsequent year *WAS* and so on). The third category, '*once WAS*', represents those students who were working above standard for one year only. Students' NAPLAN test scores were then examined and results mapped against the PAT categorisation. All NAPLAN data for the Year 6 cohort were further checked to ensure no other students could be identified as *WAS* according to the Year 3 or Year 5 NAPLAN testing occasions that we may have missed in the PAT analyses. No additional *WAS* students were identified using NAPLAN scores alone. Essentially, the NAPLAN data confirmed the inclusion of the 20 identified students.

To more fully understand the *WAS* phenomena, the 20 students who had been identified using the quantitative data were invited to participate in Phase 2 of the study. Nineteen

students gave informed consent (including permission from their parent/caregiver) to participate in the second phase of the research. Open-ended survey questions were used as a means to gather "rich and candid" qualitative data (O'Leary, 2004, p. 159) that was then triangulated with data gathered using quantitative methods (Carter, Bryant-Lukosius, DiCenso, Blythe & Neville, 2014). Students were asked questions in relation to their interests, whether they liked particular subjects, what they liked and least liked about particular subjects, and whether or not they felt they would use literacy and numeracy beyond school. They were also asked to share memorable events inside and outside of school, and if they could nominate a teacher for an award, who it would be and why. Open coding was used as a means to identify initial themes for further examination. Thematic analysis is a "commonly used form of analysis in qualitative research" (Willis, 2006, p. 271) and was deemed appropriate for Phase 2 data.

Results

The results from both phases of the research were triangulated (Carter et al., 2014) and are presented together. Consistent with the sequential explanatory mixed methods design, the qualitative data from students is used to help interpret and offer possible explanations for the trajectories of students demonstrated in the quantitative component of this research. Groups of students were defined as those who were once *WAS* in numeracy (8 students), were inconsistently (up/down) *WAS* in numeracy (4 students), were consistently *WAS* in numeracy (2 students), were once *WAS* in literacy (3 students), were inconsistently (up/down) *WAS* in literacy (12 students) and those who were consistently *WAS* in literacy (3 students). Table 1 outlines how we categorised students' numeracy and literacy trajectories into the three *WAS* categories.

Table 1: Coding used to categorise students' numeracy and literacy trajectories

Working above standard *(WAS)* categories	Numeracy (8 testing occasions)	Literacy (13 testing occasions)
Once *WAS* (on one or two testing occasions in the same year were identified as WAS)	1-2 testing occasions	1-2 testing occasions
Up/Down or Down/Up (on some testing occasions they were *WAS* while on others they were at or below standard)	3-6 testing occasions	3-10 testing occasions
Consistently *WAS* (on most testing occasions they were *WAS*)	More than 6 testing occasions	More than 10 testing occasions

The tables below reflect our categorisation of the data examined for those students who were identified as *WAS* at some point in their schooling (one PAT and/or NAPLAN testing occasion in one school year). That is to say, students were categorised as *WAS* if they were above standard on their PAT and/or NAPLAN for that particular year of schooling. Students were assigned a unique numerical code and individual *WAS* trajectories are represented in their respective column within the tables below.

Table 2 displays the numeracy trajectories of students who were categorised as once WAS. There were eight students who were placed in this category (i.e. at only one point in their schooling their numeracy test results were above standard). The WAS results for this group were recorded in the primary year levels. That is to say, no students in this group were recorded as working above standard in numeracy in Years 1 or 2.

Table 2: Numeracy trajectories of students categorised *'Once WAS'*
(Expec. = Expected)

Numeracy measure	Students (represented by numerical code)							
	2	3	4	6	9	10	13	16
Y1 PAT	Below	Below	Expec.	Expec.	Below	Below	Below	Below
Y2 PAT	Below	Below	Below	Below	Expec.	Below	Expec.	Expec.
Y3 PAT	Below	Expec.	Expec.	Below	Above	Expec.	Expec.	Below
Y3 NAP	Above	Above	Below	Below	Above	Below	Below	Above
Y4 PAT	Below	Above	Expec.	Expec.	Above	Below	Expec.	Below
Y5 PAT	Below	Expec.	Expec.	Below	Expec.	Expec.	Expec.	Expec.
Y5 NAP	Below		Above	Above	Below	Above	Above	Below
Y6 PAT	Expec.	Expec.	Expec.	Expec.	Expec.	Expec.	Above	Expec.

Table 3 shows the numeracy trajectories of students who were categorised as up/down *WAS*. There were four students who fell into this category. Three of the four students were categorised as working above standard on their Year 6 PAT results and have similar '[up/down' or 'down/'up' type trajectories across this schooling period. The remaining student's trajectory falls into the 'down/up' category but the sequence appears to be different to the other students in this theme.

Table 3: Numeracy trajectories of students categorised *'up/down WAS'*

Numeracy measure	Students (represented by numerical code)			
	5	7	14	15
Y1 PAT	Above	Above	Expected	Expected
Y2 PAT	Below	Expected	Above	Expected
Y3 PAT	Expected	Expected	Expected	Above
Y3 NAP	Above	Above	Above	Above
Y4 PAT	Expected	Expected	Expected	Above
Y5 PAT	Expected	Expected	Expected	Above
Y5 NAP	Above	Above	Above	Below
Y6 PAT	Above	Expected	Above	Above

Table 4 presents the numeracy trajectories of students who were categorised as consistently *WAS*. There were two students who fell into this category. Student 17 was *WAS* for all occasions of testing except for the Year 3 PAT and NAPLAN in numeracy. The trajectory for Student 19 shows the student as working below standard on the first occasion of testing but then consistently recorded *WAS* for the subsequent testing occasions with the exception of Year 5 NAPLAN where no data were collected.

Table 4: Numeracy trajectories of students categorised *'consistently WAS'*

Numeracy measure	Students (represented by numerical code)	
	17	19
Y1 PAT	Above	Below
Y2 PAT	Above	Above
Y3 PAT	Expected	Above
Y3 NAP	Below	Above
Y4 PAT	Above	Above
Y5 PAT	Above	Above
Y5 NAP	Above	
Y6 PAT	Above	Above

Table 5 displays the literacy trajectories of students who were categorised as consistently *WAS*. There were three students in this category. Student 19 did not have any Year 5 NAPLAN results but fell into this category, being *WAS* for all other testing occasions. Student 15 was *WAS* for all testing occasions except for Year 5 Comprehension PAT. Similarly, student 14 was *WAS* for all but two testing occasions. Given the latter two students fell into the *WAS* category more often than not across the year levels we felt they were better placed in the 'consistently *WAS*' category.

Table 5: Literacy trajectories of students categorised *'consistently WAS'*

Literacy measure	Students (represented by numerical code)		
	14	15	19
Y2 PAT COMP	Expected	Above	Above
Y3 PAT COMP	Above	Above	Above
Y3 NAP READING	Above	Above	Above
Y3 NAP WRITING	Above	Above	Above
Y3 NAP SPELLING	Above	Above	Above
Y3 NAP GRAMMAR	Above	Above	Above
Y4 PAT COMP	Above	Above	Above
Y5 PAT COMP	Above	Below	Above
Y5 NAP READING	Above	Above	
Y5 NAP WRITING	Above	Above	
Y5 NAP SPELLING	Above	Above	
Y5 NAP GRAMMAR	Above	Above	
Y6 PAT COMP	Expected	Above	Above

Table 6 shows the literacy trajectories of students who were categorised as 'up/down *WAS*'. There were 12 students who were placed in this category. It is interesting to note that only one of these students (Student 13) was classified as *WAS* in Year 2. Perhaps this was due to this being the first PAT Comprehension testing occasion for these students.

Table 6: Literacy trajectories of students categorised *'up/down WAS'*

Literacy measure	Students (represented by numerical code)					
	1	2	4	5	6	7
Y2 PAT COMP	Expec.	Expec.	Expec.	Expec.	Expec.	Expec.
Y3 PAT COMP	Expec.	Expec.	Above	Expec.	Above	Above
Y3 NAP READING	Above	Above	Above	Above	Above	Above
Y3 NAP WRITING	Below	Above	Above	Above	Below	Below
Y3 NAP SPELLING	Below	Below	Above	Below	Below	Below
Y3 NAP GRAMMAR	Below	Expec.	Above	Below	Below	Below
Y4 PAT COMP	Expec.	Expec.	Expec.	Expec.	Expec.	Above
Y5 PAT COMP	Above	Below	Above	Above	Above	Above
Y5 NAP READING	Above	Above	Above	Above	Above	Above
Y5 NAP WRITING	Above	Below	Above	Above	Below	Above
Y5 NAP SPELLING	Above	Below	Above	Below		Below
Y5 NAP GRAMMAR	Above	Below	Above	Above		Above
Y6 PAT COMP	Above	Expec.	Expec.	Expec.	Above	Above
Literacy measure	Students (represented by numerical code)					
	10	11	12	13	17	18
Y2 PAT COMP	Expec.	Expec.	Expec.	Above	Expec.	Expec.
Y3 PAT COMP	Above	Above	Above	Expec.	Above	Expec.
Y3 NAP READING	Above	Above	Below	Above	Above	Above
Y3 NAP WRITING	Below	Below	Above	Above	Above	Above
Y3 NAP SPELLING	Below	Above	Above	Above	Below	Above
Y3 NAP GRAMMAR	Below	Expec.	Below	Above	Above	Above
Y4 PAT COMP	Above	Below	Above	Expec.	Above	Expec.
Y5 PAT COMP	Above	Expec.	Above	Expec.	Expec.	Above
Y5 NAP READING	Above	Below	Above	Above	Above	Above
Y5 NAP WRITING	Below	Above	Above	Above	Above	Above
Y5 NAP SPELLING	Below	Below	Above	Above	Below	Above
Y5 NAP GRAMMAR	Above	Below	Below	Above	Below	Above
Y6 PAT COMP	Expec.	Expec.	Above	Above	Above	Expec.

Table 7: Literacy trajectories of students categorised *'once WAS'*

Literacy measure	Students (represented by numerical code)		
	3	16	20
Y2 PAT COMP	Expected	Expected	
Y3 PAT COMP	Below	Expected	Below
Y3 NAPLAN READING	Below	Above	
Y3 NAPLAN WRITING	Below	Above	
Y3 NAPLAN SPELLING	Above	Below	
Y3 NAPLAN GRAMMAR	Below	Below	
Y4 PAT COMP	Below	Below	Above
Y5 PAT COMP	Below	Below	Below
Y5 NAPLAN READING		Below	Below
Y5 NAPLAN WRITING		Below	Below
Y5 NAPLAN SPELLING		Below	Below
Y5 NAPLAN GRAMMAR		Below	Below
Y6 PAT COMP	Below	Expected	Below

Table 7 displays the literacy trajectories of students who were categorised as *once WAS*. There were three students who were placed in this category (i.e. at one point in their schooling their numeracy test results were above standard). The *WAS* results for this group were recorded in Year 3 or 4. Students 3 and 16 did not score *WAS* on any PAT occasion for literacy.

Phase 2: Responses to the student survey

As noted earlier, 19 of the 20 students identified in Phase 1 responded to the student survey in Phase 2 of this research. Students' survey responses were read and common themes and concepts were identified using open coding processes as discussed above. The survey responses were then coded based on the common themes present within and across the survey responses. Three consistent themes were evident and are reported below together with counts of the number of times these themes were present in the survey responses. Some direct comments from surveys are also used to illustrate the themes identified and to depict students' perceptions of why at some point in their schooling they were *WAS*.

Theme 1: The importance of friends and social interactions to learning

This theme was evident in 30 different comments made by the 19 students who responded to the open ended survey. The following quotes are illustrative of the many comments coded under this theme:

> The thing I like best about school is seeing my friends and learning new things [Student 01, on what they liked most about school].
>
> Playing with my friends and sport [Student 11, response to the best thing they liked about school].
>
> When my friendship group grow [sic] and I made more friends [Student 10, responding to question of what is the most memorable thing that has happened at school].

Theme 2: The importance and impact of the teacher

This theme was evident in 23 comments made by the 19 students. Students reported that they enjoyed learning from teachers whose attributes included being kind, fun, caring, supportive, helpful, and with whom they were able to make personal connection with outside of the school environment. The following quotes reflect the gestalt of the responses received:

> If I could present an award to a teacher it would be Mrs 'Y' for teaching me heaps in prep about everything in general and for being the best and nicest teacher for my first year - seeing I was so shy and she helped me through it all [Student 14, response to which teacher they would present an award to and why].

> My grade 6 teacher made me dislike maths because he tells me things that I have been taught but in a different way that makes it confusing [Student 07, response to question asking if a teacher had made them like or dislike mathematics at school].
>
> [I dislike it] when the teacher teaches you something you already know and when my friends get into a fight [Student 10, on what they dislike most about school].

Theme 3: The importance of feeling a sense of belonging to the school through art, drama, music or sport

This theme was evident in 43 comments made by the 19 students. The following quotes highlight the importance of art, drama, music and/or sport to the *WAS* students:

> Art, music, drama, sport, and reading [Student 07, what school subjects they liked the best].
>
> I like that we get to do sport, drama, art [Student 20, response to what they like best about school].
>
> Drama, art (when I find the subject fun) [Student 19, in reply to question asking what other school subjects they felt they were strong in].

Discussion

All of the factors introduced within the background literature review are likely to have had some influence on the performance of each of the students invited to participate in this study. Intelligence (cognitive and emotional), personality and attitude towards school, academic self-efficacy, social relationships, socio-economic factors and students' opportunities to engage in art and sporting experiences, gender, and teachers' pedagogic practices have all been empirically demonstrated to influence school performance. The aim of this project, however, was to give voice to students who had at some stage in their primary school career, been identified as *WAS* in either literacy, numeracy or both.

The participating students were identified, using existing quantitative data from standardised tests administered by the school, or national assessments, and then surveyed for the purpose of discovering their thoughts about their primary school experiences. Three themes were identified from the student surveys. The first theme related to the importance of friendships and social interactions to learning; the second related to the importance and impact of the teacher; and the third theme related to a sense of belonging to the school, through participation in art, drama, music or sport.

Peer friendships and social interactions were important for *WAS* students, including knowing that friends could be counted upon to give assistance if needed. Intelligence and emotional intelligence have been correlated with stronger friendships with peers and teachers (Vahedi & Nikdel, 2011), and greater academic performance. This is attributed to both the social maturity that is exhibited by children with higher levels of emotional intelligence that allows them to respond appropriately to others, and to the covert influence that maturity has on the teacher-student relationship (Vahedi & Nikdel, 2011).

Relationships with teachers and peers have been empirically demonstrated to have an influence on performance (Poropat, 2009; Vahedi & Nikdel, 2011). What has not been addressed previously and has transcended as a clear theme in this study is the *importance that students place on these relationships*. Classroom structure and teaching patterns dictate that students will have more significant relationships with their teachers in their primary schooling than in high school (Poropat, 2009), simply due to greater contact hours and fewer formal contacts with other teachers. As noted earlier, Vygotsky (1997) along with Wood, Bruner and Ross (1976) proposed that learning that is socially and culturally constructed has a significantly positive influence on learning, allowing the student a greater level of academic achievement than they may otherwise attain. Teachers with highly developed emotional intelligence will have the skills to deal effectively with disruptive behaviour without displaying negative affect toward the student or the class in general. Feelings of alienation and disconnectedness result across the classroom when teachers fail to maintain a positive social environment. The effects of poor classroom management are greater for younger students for whom feeling safe in the classroom has a stronger impact on their learning. The comments from *WAS* students suggest an underlying importance in the *way that the student perceives their relationship* with the teacher and might be worthy of further investigation.

While family socio-economic status has an influence on academic outcomes, often the influence is indirect. This indirect influence may lie in the degree to which students are afforded the opportunity to participate in activities such as the arts, and the degree to which such opportunities are availed (Mansour, Martin, Anderson, Gibson, Liem & Sudmalis, 2016). Participation in the arts (dance, drama, film/media, music, visual arts) has been demonstrated to offer benefits including improvements in motivation, concentration, problem solving, improved self-worth, well-being and improved social relationships (Mansour et al., 2016). Participation in the arts has also been shown to have a strong correlation with school performance (Mansour et al., 2016). While the value of arts in education has long been recognised, delivering quality arts programs within the curricula is complex (Cutcher, 2014). Participation has been examined, however, mostly in the context of opportunity and participation. A lack of data on the benefits of arts programs, lack of time within an ever increasing curriculum, and within schools' issues such as organisation of activities, teacher training and cost combine to reduce school arts' programs to minimalist programs. As a result, responsibility for children's participation in arts activities is often tasked to the parents and caregivers. However, at the school where our study was conducted, students participated in a whole school art, music and sports program. *WAS* students discussed how participation in this program had given them a sense of belonging to the school. The *WAS* students in the current study expressed an importance for participation in these activities. This highlights again that the perspective of the *WAS* student (here it is the importance of participation and enjoyment of arts and sports activities) may be more important than the participation *per se*.

Limitations

This study was restricted to a single primary school where a small number of children were considered eligible for participation. Further studies of a similar nature would be

required before findings could be generalised to the Australian primary school population. While it is possible that there were 'able students' who were not picked up by the standardised test results used to identify students as *WAS*, these students were not the focus of the study. The study focus was on the trajectories of students who had been identified as *WAS* on one or more occasions, using standardised test measures.

Conclusion

Despite the small sample size, an important finding of the current study is the close alignment of previous empirical findings with the opinions of the *WAS* students involved in the study. Students who are, or have been at some time working above standard, were found to place high value on attributes that are empirically supported as having an influence on academic outcomes. In addition to replicating this study in other primary schools, further research to evaluate the influence that students' regard has upon the particular factors discussed here is worth further exploration. Furthermore, the perceptions and experiences of teachers working with *WAS* students should be investigated.

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