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Accountability through High-stakes Testing and Curriculum Change

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ABSTRACT: The motivation for secondary school principals in Queensland, Australia, to instigate curriculum change coincided with the commencement in 2005 of the state government's publication of school exit test results as a measure of accountability. Aligning the schools' curriculum with the requirements of high-stakes testing is considered by many academics (Luke, 2007; Pinar, 2004) and teachers (Ward, 2006) as a negative outcome of accountability for reasons such as 'teaching to the test' and narrowing the curriculum. However, this article outlines empirical evidence that principals are instigating curriculum change to improve published high-stakes test results. Three principals in this study offered several reasons as to why they wished to implement changes to school curricula. One reason articulated by all three was the pressures of accountability, particularly through the publication of high-stakes test data which has now become commonplace in education systems of many Western Nations.

Introduction

In the state of Queensland, Australia, where this study took place, a high-stakes Year 12 exit test is administered. This is known as the Queensland Core Skills (QCS) Test and is undertaken by students from both private and public schools. The test is skills-based and specifically focuses on 49 common curriculum elements from across the state's senior syllabuses. Such elements include analysis, interpreting graphs, calculating, classifying, and justifying. Unlike high-stakes exit tests in other states in Australia, scores from the QCS test are combined with student rankings from internal school assessment and a final grade is awarded to the student. The grades of the students from each school are combined and school results are released to the public through a major state-wide media outlet. Such a practice can carry significant or high-stakes consequences for schools, as even a minimal risk of atypically poor annual results can have catastrophic and destabilising educational and economic effects on the most stable institutions (Kasperson et al., 1998). As a consequence, principals are under increasing pressure to risk manage against poor results by ensuring their schools' curriculum takes into consideration the requirements of the high-stakes exit test. This requirement has meant that some principals are demanding immediate and focused changes to their schools' curriculum.

This desire for change has been particularly prevalent in the USA since the passing of the *No Child Left Behind Act* in 2001 and the subsequent increase in school testing. Academics and teachers alike have regularly articulated the negatives of high-stakes testing (Amrein & Berliner,

2002; Luke, 2007; Pinar, 2004; Ward, 2006) which include: teaching to the test; pressure on teachers; restricted enrolments; and a reduction of the curriculum. One such negative is the alteration of the curriculum to mirror the requirements of the high-stakes test (Amrein & Berliner, 2002). Contrary to the above 'negatives', curriculum change intended to improve schools' high-stakes test performances can be positive (Ladd, 2008). In the case study conducted by Hargreaves and Fink (2004), they found that 'one or two courageous leaders responded to high-stakes testing by improving learning ...' (p. 3). In comparing results from high and low stakes tests in the State of Florida, Greene, Winters and Forster (2003) found that 'score levels on high-stakes tests closely track score levels on other tests' (p. 1). Therefore they concluded that 'if schools are "teaching to the test", they are doing so in a way that conveys useful general knowledge as measured by nationally respected low stakes test' (p. 1). However, much of the literature in the area of high-stakes testing and school performance suggests that the effects of such a practice can be less than positive for the student, the teacher and the school (Rowe, 2000). This study challenges one of the perceived negatives: the alteration of the school curriculum to mirror the requirements of high-stakes testing.

This study investigated empirical evidence from three schools to establish if, despite the perceived negative consequences towards the practice, increasing accountability through high-stakes testing has led to a change process to align the school curriculum with the needs of external high-stakes testing. A case study approach was initiated in which three principals were interviewed. Three categories were discerned: increased accountability; pressures of high-stakes testing; and curriculum change. Data obtained from the interviews were considered and discussed in the light of current literature related to the three categories; accountability, high-stakes testing and curriculum change.

Accountability

In relation to schools, accountability is defined as being answerable to someone else for what happens in the institution. According to Gurr (2008), accountability is one of a principal's four broad leadership responsibilities (the others are learning and teaching, symbolic and cultural awareness, and a futures orientation). In his work, Gurr (2008) identifies three levels of accountability. First, principals are accountable to the school council and to the government for their own performances and for that of their school. Second, principals have to ensure that the school satisfies the stated and documented requirements of the school community and of the government. Such requirements present themselves in forms such as school reports and reviews. Third, the teachers are accountable to principals. This accountability can be established through teacher appraisals and the monitoring of performances. The first level of accountability – accountability to the government – is where this study sits.

In Australia, as in many other countries, federal and state governments have insisted on increased accountability for their financial investments in education. For example, the Victorian State Minister for Education, The Hon. Lynne Kosky, announced a 'tough stand on school accountability' in 2003 (Guy, 2003, p. 1). She made it clear that the government was determined to offer challenging curricula with the expectation that students' results would improve.

Furthermore, schools and other educational institutions are coming under increasing legal pressures to ensure that students are prepared for external testing, especially in the area of literacy (Zirkel, 2008). These pressures have led to schools re-examining claims in their advertising literature and official documentation in an attempt to manage the risk of litigation. It has even been recognised by the popular media and academic sources that, increasingly, principals are being held accountable for the performances of students (AAP, 2007; Hall & Hord, 2001; Starr, 2008). If Australia follows the United States' trend of increased litigation, the number of lawsuits against schools will inevitably rise. It will become an ever-present feature in the ever-growing list of school concerns (AAP, 2007; Fullan, 2001; Perry, 2007; Smeed, 2008). As a consequence, principals will need to have a clear understanding of accountability and what their schools' curricula can and cannot deliver.

High-stakes Testing

Even though high-stakes tests are standardised tests they differ greatly depending on their focus. For example, in Australia, some high-stakes tests are skills based and others test knowledge. An important point about high-stakes tests is not so much what is tested but that the results are used to make significant educational decisions. Examples of such decisions made on the basis of high-stakes testing results include: funding allocations; student movement through year levels; teacher competency; student enrolment; enrolment screening; and narrowing and targeting of specific aspects of the curriculum. The results of high-stakes tests are often published and used by the public (Hoff, 2007), educational systems, and governments to make significant educational decisions, even to the point of rewarding or sanctioning schools for their academic performance (Amrein & Berliner, 2002; Greene, Winters & Forster, 2003).

Governments world-wide are increasingly monitoring accountability (Flores, 2005; Fullan, 2001) as it relates to the curriculum through student and school performances in standardised tests, which are often high-stakes (Amrein & Berliner, 2002). In the United Kingdom, educational policies centre on meeting public and government demands for educational accountability and standards monitoring (Rowe, 2000). The government has instituted a program of testing students and publishing the resultant data (Rowe, 2000). School league tables are published, showing results from national curriculum tests at ages 7, 11 and 14 years, along with scores for the General Certificate of School Education (GCSE) (at 16 years old) and AS and A2 levels (at 17/18 years of age).

In the United States, there has been a steady increase in testing since the launch of the Soviet's Sputnik in 1957. The Soviet Union led the United States in the 'race to space', causing many in the United States, including journalists and politicians, to question what was happening in the nation's schools. There was concern that the achievements of students in US schools were falling behind those in other countries, and in the 1970s, this belief led politicians to instigate a minimum competency testing movement. States began to rely on tests of basic skills that they considered would lead to students achieving the required amount of knowledge needed to be a productive citizen (Amrein & Berliner, 2002).

The *No Child Left Behind Act* in the USA has led to increased standardised testing of students across the country. However, this Act is not without its critics. Amrein and Berliner (2002) argue that there is no clearly identified link between these tests and increased student learning.

Other criticisms of high-stakes testing include that they lead to increased drop-out rates (Amrein & Berliner, 2002; Parkay, 2006), teacher defection from the profession (Ingersoll, 2003), and teachers and schools cheating on exams (Amrein & Berliner, 2002; Smyth, 2006). Amrein and Berliner (2002) also argue that high-stakes testing has had disproportionately negative and discriminating effects on the life chances of America's poor and minority students. Parkay (2006) concurs, and raises doubts about the outcomes of such testing. He considers that the drive for more testing and the setting of benchmarks in the USA have led to the lowering of standards. Parkay (2006) posits the reason for this as School Districts setting benchmarks that also serve as a funding indicator. As a result, the districts have the power to downgrade these benchmarks to retain or attract funding.

Regardless of the arguments, this testing trend is likely to continue as it is supported by the majority of the US public (Parkay, 2006). Parkay (2006) defends this claim by referring to the 2004 US Rose and Gallop Poll, which indicated 40% of respondents believed there was the right amount of testing in schools, while 22% believed there was not enough. To offset this result, Parkay (2006) points out that the percentage of respondents believing there is too much testing has increased from 29% in 1997 to 32% in 2004. He also suggests that the figures indicate the public is polarised regarding the use of standardised test scores in judging the quality of teachers (49% in favour; 47% opposed). The above figures show that high-stakes testing is largely accepted and maybe even expected by the public and, therefore, the discourse as it currently stands would give weight to the political insistence that students should be tested. With such public support, the use of high-stakes testing is unlikely to be discontinued in the USA.

Not all the relevant literature in the USA criticises the use of high-stakes testing. An example of a positive attitude towards testing is Greene, Winters and Forster's (2003) work on the State of Florida's testing program. Greene et al. (2003) compared results from high- and low-stakes (school-based) testing and found that improved performance in high-stakes testing does translate into improved performance in low-stakes testing.

In contrast to the UK and the USA, even after a decade, periods of what Shimizu (2001) referred to as 'educational disarmament' (p. 193) are still being experienced in Japan, Malaysia and Singapore. In Japan and Malaysia, the emphasis is on lessening the intensity of education by reducing curriculum requirements and the number of weekly hours students spend at school (Rotberg, 2006; Shimizu, 2001). However, it may be asked whether or not this disarmament trend will be tolerated if Japan continues to fall from the top position in mathematics and science in the OECD's Programme for International Student Assessment rankings.

In Singapore, student standardised national testing is undertaken at specific intervals throughout a 10-year period of schooling. These results are published in league tables, then used to stream students within the system and reward schools for their performances (Rotberg, 2006). In contrast, students in Japanese public schools do not partake in high-stakes tests until lower secondary school, when their test results determine which upper secondary school they will attend. Rotberg (2006) and Shimizu (2001) comment that, while education is highly competitive, teachers

are not held accountable for students' scores on standardised tests as they tend to be in the UK and USA, and also increasingly in Australia (ABC Newsonline, 2007).

There are an increasing number of high-stakes testing programs being implemented in all Australian states. In Queensland, for example, students in Years 3, 5, 7, and 9 sit for the 'Aspects of Literacy and Numeracy' Tests, and Year 12 students undertake the Queensland Core Skills Test. Low-stakes testing (testing on the basis that no major decisions affecting the school or the student are made) is conducted in Years 4, 6 and 9, and is also part of the students' testing agenda in that state. The high-stakes testing allows inter-school and inter-system comparisons and feeds the current apparently insatiable public appetite for school and system test data.

It is clear that high-stakes testing has become a global phenomenon that is placing ever-increasing pressure on schools (Fullan, 2001). Nations, states, and school districts have implemented accountability tools in the form of large-scale testing programs (Perry & McWilliam, 2007) to monitor school performance and ultimately government investment. A by-product of these tests can be that schools are rewarded or sanctioned based on their results (Amrein & Berliner, 2002). According to some, this reward/sanction system has caused some institutions to be performance rather than learning orientated (Dweck, 1999; Mathers & King, 2001).

With results from high-stakes test in Australia now being readily available to the public, it would appear that, over time, performance patterns are being used to judge schools, their effectiveness and their teaching quality (McWilliam, Taylor & Perry, 2007). The tests also demand considerable time and energy in the school's curriculum agenda and greater attention of school administrators (Perry, 2006; Pinar, 2004).

According to a former Commonwealth Government Minister of Education, The Hon. David Kemp (1999), high-stakes testing was not just about the performance of students. He has suggested that it could be used as a means of monitoring school and teacher standards. As a result of government requirements to publish test results on websites, schools are addressing student performance as a matter of urgency (McWilliam, Taylor & Perry, 2007). One way of meeting these requirements is through changing the curriculum so that it focuses on the requirements of the high-stakes tests.

Under such intense scrutiny, changing the curriculum and linking it closely to the mandatory assessment becomes a device to minimise the risk of board, public, parent, and student dissatisfaction. McWilliam and Perry (2006) suggest that 'the price of failing to render the school calculable can be very high indeed' (p. 100). A poor year of academic results can produce public reactions that can destroy credibility and destabilise even the most robust of social organisations including schools (Perry, 2006; Ward, 2006). As a result of the publication of educational data, schools are under increasing pressure to focus on learnings that eventually lead to acceptable test data for public consumption (Fullan, 2001). Evidence gathered in the study reported here indicates that schools in Queensland are responding to the publication pressures by changing their curricula to mirror the requirements of high-stakes tests.

Curriculum Change

Curriculum is a prescribed set of learnings. Who prescribes it and for what reasons it is prescribed varies according to context, systems and societies. The learnings outlined by school syllabuses are what society, or at least some in society, considers important for young people to know and understand. As society changes over time, pressure to change is brought to bear on the curriculum. How these pressures are responded to at an individual, school and teacher level varies according to the personnel and the context.

Curriculum change can be considered and enacted in a micro or macro context. On a *micro level*, it constitutes individual or a small group of teachers planning and delivering required changes (Beavis, 1997). Curriculum change at the *macro level* occurs where changes across the whole-school's curriculum are implemented. This study centred on why principals initially wanted changes at the macro level in their schools, where evidence suggests that such attempts have met with very little success over the past 40 years (Macdonald, 2004; McBeath, 1995; Paechter, 2003).

Reasons for initiating curriculum change have differed over time. More than a decade ago, Razik and Swanson (1995) identified school ownership and governance (in the case of schools, governance generally sits with the School Board), the advent of the information age, demographic shifts, growing poverty, demands of new market segments such as comparatively new religious groups, and school performance as the dominant reasons for curriculum change. Two years later, Fullan (1997) added accountability and high-stakes testing to this list. McWilliam and Perry (2006) have added the publication of test results and management of risk from public reaction to a poor school performance to this ever-growing list. Furthermore, both Razik and Swanson (1995) and McWilliam and Perry (2006) identified that the reasons for curriculum change generally originate from outside school communities. To establish the links between increased accountability, high-stakes testing and curriculum change, this study investigated the reasons why three principals enacted curriculum change processes in their schools.

Methodology

Data for this research were drawn from a larger case study of the author's work. This study represents her examination – as a researcher – of the work which she previously undertook as an external change agent in three schools in Queensland, Australia. It provides a new perspective on an innovative and significant curriculum change process as implemented in these schools. The schools in this study were independent; two were metropolitan and one was regional. Of the three principals, two were undertaking their first 5-year contract as school leaders, and the third was in their second principalship.

A qualitative case study approach was used, as Merriam (1998) suggests that this is the best methodology for addressing problems directed at gaining an understanding of a phenomenon to improve practice – as was the situation in this study. An interpretative approach was employed to analyse data that were obtained from the researcher's diary and semi-structured interviews. To assist in the analysis of the data, the methods of sample diary logging and category construction (Merriam, 1988) were used.

In undertaking this study, data were collected from two 60-minute interviews with three principals (Principal A, B, and C) that were audio recorded and then transcribed independently in full. Where possible, evidence was verified with entries from the researcher's diary.

To analyse data from the diary, a technique of sample diary logging was adapted from Merriam's (1998) sample interview log analysis. Using this method, elements of the diary entries were listed against a description of the event. From this log, data were again re-interpreted and progressively reduced to concentrate on the central issues that emerged and re-occurred.

Interviews were analysed using Merriam's (1998) technique of category construction. This technique aimed to make comparisons and connections within the gathered information by adhering to the following stages: isolating and categorising significant features; establishing categories by identifying cycles of cause and effect; and establishing themes or relationships between categories. In addition, through the use of category construction, the data from each interview were initially analysed vertically and coded line-by-line or statement-by-statement, according to the participant's comments. The data were then assigned to categories.

In an attempt to minimise bias, the identified categories were independently constructed by three people: the researcher; an academic colleague; and a middle manager from a school not involved in the study. Recurring reasons for curriculum change served as categories. In response to the research question under consideration, evidence was found that pressure from the publication of test data has influenced principals to change their school curricula to mirror test requirements. .

To ensure a high degree of trustworthiness, the research was based on the criterion of credibility to minimise misunderstanding and misrepresentation (Stake, 1995). This criterion is often used for assessing research associated with the constructivist paradigm (Hatch, 2002; Lincoln & Guba, 2002). For reasons of credibility, researchers have an ethical obligation. Merriam (1998) suggests that credibility is one of the strengths of a case study, as by its very nature it attempts to establish how findings match the real-life situation.

There have been many techniques suggested for establishing credibility in qualitative research (Maxwell, 1996): projective questioning (Lee, 2001); long periods in the research field (Merriam, 1988); multiple sources of evidence; and member checks (Guba & Lincoln, 1994; Lincoln & Guba, 2002; Stake, 1995). Projective questions were used in the semi-structured interviews for this case study to establish credibility. According to Lee (2001), such questions are those which project the respondent into an aspect of the world that she/he has encountered. They may also describe the respondent's experience. Such questions require the respondent to think about and articulate a situation experienced before the interview. Credibility in this instance is gained by asking interviewees to draw on their experiences as to why they initiated curriculum change in their schools.

Gathering data from multiple sources of evidence (Lee, 2001) is another way of developing credibility. This study used data from two sources: the external change agent's diary and the principals themselves. To further add to the credibility, the process of member checking was employed. In this study, random and periodic member checking throughout the data analysis and finalising stages of writing (Guba & Lincoln, 1994; Ng, 2006; Stake, 1995) took place.

This case study research on the views of three principals requiring curriculum change was undertaken using analysed data from semi-structured interviews. To increase reliability, several

procedures were undertaken during the analysis. This analysis led to the unfolding of three major categories in the findings, and these are listed in the next section.

Findings

This study investigated whether or not *increased accountability through high-stakes testing in schools as reported by principals has led to curriculum change*. Three categories emerged from the analysis of the research data. First, all principals spoke of being placed under increasing pressures of accountability. Second, all principals mentioned that the publication of test results was a specific pressure. And, finally, all spoke about how they reacted to this pressure by changing their schools' curriculum to more closely mirror the requirements of high-stakes testing.

Increasing pressures of accountability

This theme was mentioned extensively by all principals. All three principals felt this pressure had increased during their times as school leaders. Principal B commented:

There has been a huge growth in accountability from all sources, parents, school boards, but more specifically, governments. We have to do things now that we never had to do five or six years ago ... Funding for schools is directly linked to quality procedures in curriculum ... So, increasingly, the federal government is influencing educational outcomes in schools, without that policy being driven by educators, and I think principals are concerned about that. (PB 11/11/07)

Principal A recognised the importance of government funding and offered the following observations in relation to increased pressures as a result of this:

I know its [pressure of accountability] increased on me ... The bureaucratic stuff is very life-sapping, and there is more and more of that. That's the only basis that I have, and conversations with colleagues ... We get a lot of government funding. About 80 percent of our finance comes from governments. Often funding is tied to an outcome. If we don't comply, the federal government will cut off our funding. I think this accountability is going to increase further in the future. There is nothing we can do about it ... It's the governments that are driving things, and we are probably now in a phase in education in Australia where the influence of the Federal Government has never been greater, and this whole move towards centralisation ... (PA 14/12/07)

In relation to the first theme, increasing pressures of accountability on schools, Principal C said that they accepted accountability because of the school's dependence on government funding. He stated: 'Schools are dependent on public monies, and that brings with it accountability ... We live in an age, too, where accountability is becoming more and more rigorous' (PC 25/10/07).

Findings from this first category clearly show that all three principals felt that pressure had increased on them during their time in leadership. However, they also recognised that this pressure had been compounded because of the publication of test results.

Pressures from the publication of test results

The second identified theme from the data related to the increased pressure from government

sponsored testing programs and, specifically, the subsequent publication of school performance results. Principal A's comments were especially pertinent:

All students would love to come out as a little genius. That is unreasonable. The public and the school community make judgements about the school from these published results. (PA 14/12/07)

Principal B pointed out the public interest as a result of test result data being released in the media. For Principal B:

Yes it is a pressure, because it's public ... But because we performed well publicly, people have seen that, that has lead to very positive images of the school ... you need to ensure not only that you meet the benchmarks. If you want to be a school of excellence, you really need to be demonstrating that there are excellent learning outcomes ... for someone outside looking in published data carry a weight, and so I've had people from our community wanting to enrol their child, and when I ask them why, they say it is because of the results in the paper. (PB 11/11/07)

In relation to this second theme, Principal C particularly noted the effects on enrolment patterns if the school's published data was perceived as inadequate:

Unless we perform academically, the public will not see us as a school that achieves. They will then bypass us for better performing schools. There is now a very practical impetus to try to enhance your results because expectations are higher these days, and people vote with their feet. I had already discerned looking at the enrolment patterns of the college that there was a drift at the end of Year 10. I felt that we were being perceived as a lovely, warm, welcoming, supportive place, and we had great subjects in the junior school that were lots of fun. I think that was attractive to adolescent girls and parents. But it seemed when we were hitting the years where education suddenly became really serious, those who had particular academic aspirations were starting to look elsewhere. So there was a practical impetus to try to arrest that trend ... So we are to some extent at the mercy of public perception. That's another reality that you have to deal with. (PC 25/10/07)

The researcher's diary shows the following entries that highlight pressure on principals from the publication of school performances. For instance, Principal A was worried because the senior results were published in *The Courier-Mail* [newspaper distributed throughout the state] earlier in the week [and the] school has not done particularly well on the league tables. The diary noted:

[Principal A] is concerned that questions would be asked by [the] board. [Principal A] is down on the staff about the results and says that they are going to have to lift their act. [A] also said that [they are] going to write to the parents outlining that the School is about the education of the whole person not just results in the paper. One of the middle-managers told me [the researcher] that parents are starting to ask about the results and that questions were also being asked at Board level. (9/4/07)

Evidence from findings in this second category indicates that all three principals feel pressure from the publication of test result data. Findings on a specific reaction to this pressure in the form of requiring curriculum change are outlined in the third category.

Curriculum change to mirror the requirements of high-stakes testing

The third theme highlighted that as a consequence of the above identified pressure, each principal saw a need to establish strong links between their schools' curricula and the demands and

requirements of the test. While admitting that the test came with its related pressures, Principal B considered the quality of the QCS test as a learning instrument was high. Therefore s/he was quite open to adjust the school's curriculum to mirror the test requirements. The pressure previously articulated by all principals led to their desire to formally structure and control what was being taught in the classrooms. Principal B commented:

There is pressure to change the curriculum to accommodate the government agenda, which is about performance and benchmarks and testing ... The QCS [Queensland Core Skills] test is very, very good. It's a marvellous learning instrument. There is real good in that. We have really been working with our whole staff on what are the fundamental principles underlying teaching and learning and assessment of QCS. And then ensuring that they're a part of the curriculum from Year 8. (PB 10/10/07)

Principal A also expressed a desire for her school's curriculum to mirror the requirements of high-stakes testing. She wanted change that directly impacted on student learning and could 'be seen in terms of results. The tested skills will, therefore, have to strongly underpin the curriculum through the work programs' (PA 10/12/07). The following observation was recorded in the researcher's diary:

[Principal A] said that she was worried about what was being or not being taught in the school. She wanted all work programs written to a common format based on the high-stakes elements. Principal A now has a copy of every work program in folders in her office and she seems very happy about it. A said the whole process makes them feel more confident and secure about questions that may come her way. (PA 3/10/07)

Principal C wanted 'the curriculum to be rigorous and focused on producing better results' (PC 25/10/07). He commented further:

I had to look at how well the curriculum was actually preparing students for the exit test. We were developing some very good preparation for the test programs, but in the end they are the icing on the cake. If you haven't got the cake, the recipe isn't right, and it doesn't matter how much icing you put on the outside of the cake. It's not going to provide the substance or the flavour that you're looking for. I thought we have to dig deeper than that, and start looking at what we are actually doing in classrooms, day-in and day-out, from Year 8 onwards. We started ... into the junior curriculum, and I think there has been great value in doing that and making change at the junior level. (PC 25/10/07)

The above data strongly indicates principals perceive that there is increasing pressure of accountability from the publication of high-stakes testing results and in response to this pressure, principals in this study were quite open about their desire to have their schools' curriculum meet the test requirements.

Discussion

All principals commented on increasing levels of accountability required by governments. According to Pinar (2004), governments are increasingly monitoring accountability through student and school performances in standardised tests. Nations, states, and school districts have implemented accountability tools in the form of large-scale testing programs, audits, targets, inspection, or program reviews (Perry & McWilliam, 2007) to monitor school performance and,

ultimately, their investment. A by-product of these tests can be that schools are rewarded or sanctioned based on their results (Amrein & Berliner, 2002).

In his interview, Principal A spoke not only about the increased accountability required by authorities, but also the energy he as principal needed to devote to this area. The preparation and administration of tests demand considerable attention and time in the school's curriculum and increased energy from teachers and school administrators. Taylor (2005) referred to this demand for time and energy as *attentional economy* which he defined as what school administrators have to pay attention to. Increasingly, school leaders must focus on testing regimes and risk manage their school curriculum. This increasingly demands the attention of principals as they work to avoid any potential harm which could impact as a result of a poor performance. As Principal A noted, this pressure of accountability is both increasing and 'life-sapping'.

Statements from Principals B and C in relation to the publication of test data, draw attention to a by-product of the government's testing programs – that schools are becoming increasingly conscious of the public image that comes from the publication of results (McWilliam, Taylor & Perry, 2007). Evidence from these interviews suggests that principals feel pressured to address the issue of public scrutiny of academic results. Fullan (2001) also drew attention to this matter several years ago when he outlined the increasing pressures on principals, particularly throughout England and North America.

Principals B and C also mentioned the importance of good performance for enrolment purposes. McWilliam and Perry (2006) write that there can be serious consequences for failing to pay attention to this dimension. Therefore, principals are embarking on the business notion of protecting their brand. Poor results are perceived as a risk to the institution, as is evidenced by the newsletter editorial by Queensland principal, Vicki Ward (2006) (not one of the principals in the study), in which she facetiously outlines what she would do in her school if her aim was just to ensure acceptable published data:

I would narrow the curriculum so that the learning diet would suit those students now in the school. In particular, I would make sure that a *de facto* second filter was applied at the point of transition from Year 10 to Year 11. I would not offer subjects such as English Communication, Pre-Vocational Mathematics, Early Childhood Studies and the like, as students who would want to do these would not be in our school. If any had slipped through, they would be advised to go to schools which 'had the courses which would cater for their needs'. I would also do away with many of the subjects that middle and lower range students were likely to be able to handle. This would mean that these students would look at studying such things elsewhere and so ensure that the students who stayed were more likely to be capable of doing well at the highly academic offerings that remain. (Ward, 2006, p. 1)

While facetious in nature, Ward's comments highlight that principals now feel compelled to address the pressures that come from the government as a consequence of making test results public.

Each of the principals spoke about judgements made by the public about their school from the published data. They appeared very conscious of the negative impact this could have. In fact, to combat this potential impact, McWilliam, Taylor and Perry (2007) state that principals are now spending up to 20% of their time attending to matters relating to academic performance and school reputation.

The responses from the three principals and the literature illuminate a need for principals to risk manage their schools against poor performances and an unfavourable public image (McWilliam & Perry, 2006). In attempting to achieve this, the principals in this case study chose to make adjustments to the curriculum so that it mirrored the requirements of the Year 12 exit test. They chose this option even though much of the literature (Amrein & Berliner, 2002) and the rhetoric (Klenowski, 2008) suggest that this course of action is educationally unsound.

In drawing on the above evidence, there is little doubt that all three principals were adamant about wanting change or *curriculum compliance* which met the requirements of the high-stakes exit test. This concentration of efforts to prepare students for standardised tests highlights the importance of these tests and reflects Goodhart's Law of 'what's counted counts' (McIntyre, 2000, p. 1). It also reflects a reductionist view of education. Perry (2006) describes it as education where scores, market appeal and conformity are considered over 'mission statements that promote creativity, flexibility and individuality' (p. 150).

By changing the curriculum to meet the pressures of high-stakes testing, Corson (2002) suggests that the educational agenda is being driven by a performance culture rather than by a learning culture. Dweck (1999) made a clear distinction between these two cultures. She defined performance goals as being 'about winning positive judgment of your competence and avoiding negative ones' (p. 15). On the other hand, she described learning goals as the desire to learn 'new skills, master new tasks or understand new things' (Dweck, 1999, p. 15). Some authors (Carlson, 2005; Corson, 2002; Dweck, 1999; Pinar, 2004), including Australians Perry and McWilliam (2007), argue that such external pressures tend to have little to do with education and, more specifically, learning; instead they have more to do with business outcomes and performance. An implication of this performance orientation is a curriculum that is centrally developed and monitored, which can ultimately lead to the de-professionalisation of teachers (Bourke, 2008). It is reassuring to note that even though the three principals accorded primary attention to the pressures of performance, which Apple and Beane (1999) consider part of the principal's marketing responsibilities, they were aware of the distinction between performance and learning.

In the above discussion, links have been made between the three categories highlighted in the analysis of interviews with the principals. These were the pressures of accountability, pressures emanating from the publication of schools' results, and the response from principals to align curriculum with high-stakes tests. Though acknowledging this response to accountability pressure, the need to recognise the difference between learning and performance remains a significant factor for principals when making any decisions about curriculum and high-stakes testing.

Conclusion

In responding to the question of whether or not *increased accountability through high-stakes testing in schools has led to curriculum change*, this study drew on relevant literature and interviews with three principals. The literature discussed in this article suggests that the practice of changing school curriculum to meet the demands of high-stakes testing is educationally questionable. However, findings in this research left little doubt that accountability to government

has increased, and the subsequent publication of test results has led to schools demanding curriculum compliance with the high-stakes tests.

These findings could be further considered in terms of the ever-present debates about teaching to the test and the narrowing of the school curricula. It could be asked if curriculum narrowing is necessarily a bad thing, especially if the focus is on skills. The results of this study could also be considered further in relation to the notion of the de-professionalisation of teachers. The idea of schools being accountable to a higher authority for the money which is invested in them will inevitably lead to further curriculum change in an attempt to ensure the best possible test results. This then leads to wider implications in relation to the process of educational change. To meet the pressures of accountability, curriculum changes will need to be targeted and rapid. This approach goes against the current notions of slow, deliberate, inclusive educational change processes in schools advocated by many education and education change theorists (Fullan, 2001; Luke, 2004). In establishing the links between accountability, high-stakes testing, and curriculum change, this study posits that new, faster, and targeted change processes will have to be considered by the educational community because of increased pressures on schools and, in particular, school leaders.

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