Finding Ways to Effectively Use Year 12 Achievement Data to Inform Practice in Secondary Schools

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Abstract: This action research explored how Year 12 achievement data were used by school personnel to inform practice within seven Catholic secondary schools. Deputy Principals of Curriculum from participating schools were interviewed regarding their perceptions of the improvement of Year 12 student achievement outcomes, and their insights into how to strengthen future efforts (or achievements). Three key insights included: Communication of achievement data to key stakeholders in the school community, strategic use of achievement data by teaching staff, and leadership strategies to promote an achievement culture to the students. The findings of this research will serve to improve and strengthen practice at participating schools and to stimulate discussions in other schools about the effective use of achievement data.

Introduction

It is apparent that achievement data are readily available in most Australian states and territories. What is not so apparent is the ability and willingness of educators to make effective use of these data to inform educational practices, and consequently, improve teaching and learning. The issue is not about which data to use and how to access these data, but rather how to use data strategically within a given context to assist in the teaching and learning function. This is especially significant if ultimately the aim of education is to cater for the needs of each individual student. Masters (2010) suggested that:

> A high priority is given to the school-wide analysis and discussion of systematically collected data on student outcomes, including academic, attendance and behavioural outcomes. Data analysts consider overall school performance as well as the performances of students from identified priority groups; evidence of improvement/regression over time; performances in comparison with similar schools (p. 3).

All achievement data should be used to inform general trends at system, local school and individual classroom levels, as well as for the benefit of the individual student. Campbell and Levin (2009) considered data-informed decision making as a key professional skill for all educators – including teachers and principals – in understanding and applying data to inform improved actions and outcomes. The importance of leadership should not be understated when considering the conditions which need to be explicitly developed and administered in the context of dynamic, culturally diverse educational communities (Copland, 2002; Supovitz

& Klein, 2003; Wayman & Stringfield, 2006a; Young, 2006). Leading to succeed is philosophically founded on the informative use of achievement data for all, but especially for individuals.

Purpose of Research

The intention of this qualitative research was to explore how Year 12 achievement data are used by school personnel to inform practice within seven Catholic secondary schools. It was anticipated that a range of strategies regarding the analysis and use of Year 12 achievement data would be evinced by key personnel at the purposively selected schools. It was also expected that the elucidation and consideration of these strategies would lead to a better understanding of how participating schools within the Perth metropolitan area might focus and further strengthen their commitment concerning the use of Year 12 achievement data.

Research Questions
Overarching Question

How can Year 12 achievement data be used effectively to inform practice within Catholic secondary schools in Perth, Western Australia?

Sub-question

What strategies do key personnel at the selected Catholic secondary schools use so that Year 12 achievement data are used effectively to inform practice?

Refined Questions

1. Tell me about how you use the Year 12 achievement data at your school.
2. What processes are in place for discussion and analysis to occur around these Year 12 achievement data?
3. What strategies are in place to lift the achievement culture of all students? How do you know whether these strategies are effective?

Review of Literature

Effective analysis of assessment data is evident within schools seeking continuous improvement for student outcomes (Bruniges, 2012; Masters, 2010; Wildy, 2012). Within this concept of improving student outcomes, commentators draw attention to various prominent themes. These themes include: External validation of achievement data (Fullan, 2007; Ingram et al., 2004), the use of analysed data (Campbell & Levin, 2009; Schildkamp & Kuiper, 2010), the role of leadership concerning school improvement (O'Neill et al., 2010; Young et al., 2010), and teachers' use of achievement data (Earl & Katz, 2006; Fullan et al., 2006). The achievement of harmony between assessment *for* learning and assessment *of* learning is balanced if teachers, schools and systems use data as a fundamental component of everyday teaching and learning. Wildy noted that schools "are embracing the opportunities afforded by large amounts of data that are systematically collected, linked over time,

presented in accessible formats, and relevant to their everyday work" (p. 6). Following a careful analysis of such collected data, the role for schools is to strategically use data to effect continuous improvement in student learning outcomes.

External Validation of Achievement Data

Externally validated achievement data and reporting in Australia emphasises accountability for the success of school and system (Fullan, 2007).Typically, externally validated achievement data in Australian Secondary schools are characterised by externally administered examinations for the purpose of achieving an Australian Tertiary Admissions Rank (ATAR). Year 12 achievement data are gathered by curriculum authorities which combine teacher-generated course results with external examination results. Schools are then provided with large volumes of information for individual students, which allow for both the interpretation and review of courses offered and subsequent performanceby individual students and schools. A key feature of these data is the access to longitudinal achievement data in providing externally reliable feedback to individual teachers and schools. Ingram et al. (2004) contended that the collection and analysis of achievement data must lead to reflective action by all concerned at individual class level, the whole school level and system level. These authors found that:

> teachers use their own personal metric for evaluating their instructional effectiveness, and these metrics often differ from those used in external accountability systems. They base their decisions on experience, intuition and anecdotal information (professional judgment) instead of systematically collected information (Ingram et al., 2004, p. 1281).

Teachers should be using explicit systematic data analysis when seeking continuous improvement at all levels (Fullan, 2007). Concurrent with external processes – which predominantly involve the availability and analysis of state-wide achievement data – internal formative assessments underscore student achievement and inform the future role of the teacher. Fullan (2007) identified this concurrent practice as 'building internal accountability linked to external accountability', and regarded this practice as keyto successfullychanging educational strategies. He argued that:

> As educators become more assessment literate, they not only become more comfortable with specific data, they also seek and use assessment data. It is at this point that external accountability becomes more accepted, more transparently available, and more readily used for summative conclusions and judgements. (p. 60)

Internal and external processes improve outcomes within an overall climate of accountability. This accountability underscores the importance of formal processes for the effective use of achievement data when striving for improvement.

How Should Analysed Data be Used?

There is widespread acknowledgment of the importance for schools effectively using analysed data to inform practice (Bruniges, 2012; Masters, 2010; Schildkamp & Kuiper, 2010). As such, school personnel must promote and maintain effective strategies for using analysed data to develop student capacity and improve student performance (Stiggins, 2001). Campbell and Levin (2009) stated that "effective use of assessment and data to support positive outcomes for educators requires careful attention to building capacity to access, understand and apply data" (p. 49). These authors claimed that irrespective of the type and quality of achievement data, these data will have little impact on student improvement if they are not used (Campbell & Levin, 2009). Fullan et al. (2006) amplified this claim, stating:

> In our experience, even those who think they are well into assessment for learning soon realise that they have a way to go...The rhetoric of assessment for learning is abundant, but the knowledge in reality is very thin on the ground (p. 20).

To a great degree, the use of details is dependent on the skills and attitudes of educators. Chiefly, certain skills needed by educators in using achievement data to support teaching and learning include: An ability to determine interpretive questions, to ask interpretive questions, and to evaluate data quality (Fullan et al., 2006). For practitioners to develop a commitment to use data for improvement, cultures that trust and support high-quality data use must be nurtured whether at the classroom, school or district level (Heritage, 2007). Heritage noted that confidence was expressed at teachers' ability to modify practices through formal analyses of achievement data.

Various authors affirmed that collaboration regarding student improvement enhances the professional growth of teachers (Bruniges, 2012; Fullan & Hargreaves, 2000; Schildkamp & Kuiper, 2010; Young & Kim, 2010). Fullan and Hargreaves contended "In schools where there is a strong culture of collaboration teachers develop common purpose, cope with uncertainty, respond to rapid change, create a climate of risk-taking and develop stronger senses of teacher efficacy" (2000, p. 2). In a similar vein, Young and Kim emphasised that "Teacher collaboration is a mechanism by which teachers learned to analyse data and learned new instructional strategies to address the concerns raised in using assessments for instructional improvement" (p. 23). The McKinsey Report (2010) discussed common attributes of high-performing school systems:

> These systems also establish collaborative practices between teachers within and across schools that emphasise making practice public. In other words, collaborative practice becomes the main mechanism both for improving teaching practice and making teachers accountable to each other (p. 4).

In particular, channels for accessing others' instructional expertise are valuable for novice teachers because they allow them to make sense of assessment results and to capture ideas about what to do about the results (Young, 2006). However, teachers typically do not collaborate on assessment in the course of their daily instruction-related work (Young, 2010). To support this claim, Means et al. (2009) provided insight from a national survey where a majority of K-12 teachers reported that they used their respective student data system on their own (78%) and with colleagues or department teams (71%). Despite these claims, a majority of these teachers (59%) did so as part of district-led activities, and not necessarily as a common routine in conducting their work (p. 17). Additionally, individual teachers were generally reluctant to share assessment results, especially if colleagues perceived poor assessment results as a weakness in classroom practice (Means et al., 2009). To encourage collaborative practice, formal and well-structured school-wide practices need to be developed and supported by leadership at all levels (Young & Kim, 2010).

The Role of School Leadership

Through effective practices within schools, student achievement outcomes have the opportunity to be enhanced (Fullan et al., 2006; Fullan, 2007; Young & Kim, 2010). Research has identified the critical role of school leadership in providing the necessary conditions for using achievement data strategically (Copland, 2002; Supovitz & Klein, 2003; Wayman & Stringfield, 2006a; Young, 2006).Specifically, there is a need for school leaders to articulate and support formal processes for accountability, ownership and responsibility for the effective use of achievement data (Masters, 2010; O'Neill et al., 2010). O'Neill et al., (2010, p. 19) asserted that "the importance of counselling, knowledge and use of data, relationships with students, relationships with parents, strategic planning and the importance of the development of an appropriate culture" are the recurring themes elicited in interviews

with leaders of top performing schools. Much of the data from this research suggested a wide variation in highlighting the need for formal, well-documented, whole school acknowledgement, and the articulation of consistent practices for data use.

Further research into leadership practices regarding the use of student achievement data revealed the need for school and system leadership to promote a culture of continuous improvement (Wayman & Stringfield, 2006a; Young, 2006). To illustrate, Young et al. (2010) stated that "The Principal's leadership is crucial to setting expectations for school staff to consider data as decision inputs and to creating supportive environments in which teachers can share the successes and failures associated with assessment results" (p. 19). Knapp, Copland & Swinnerton (2007) asserted that in addition to establishing and supporting teachers' use of data, leaders' responsibilities entail:

> Different types of activity that can be productively informed by data, such as diagnosing or clarifying instructional or organizational problems; weighing alternative courses of action; justifying chosen courses of action; complying with external requests for information; informing daily practice; and managing meaning, culture, and motivation (p. 77).

Other research findings reported that leaders in key roles catalysed change at schools embarking on an inquiry-based school reform effort (Copland, 2002; Supovitz & Klein, 2003). For instance, Supovitz and Klein (2003) determined that "virtually every example of innovative data use in the study came from the initiative and enterprise of an individual who had the vision and persistence to turn a powerful idea into action" (p. 36). In addition, these authors reported that "only 19% of school leaders surveyed felt that they had the technical skills to manipulate thedata in order to use it to answer questions that they wanted to ask" (Supovitz & Klein, 2003, p. 38).

Teachers Using Data to Inform Practice

Using information about student learning and progress to inform school and classroom practices is widely recognised as an important component of strategies to support improvement (Bruniges, 2012; Campbell & Levin, 2009; Earl & Katz, 2006; Fullan et al., 2006). Bruniges (2012) argued that the only real chance for significant and sustained school improvement "lies not in structural change in and of itself, but in attending to the bread-and-butter of theeducational process – what goes on in our classrooms" (2012, p. 4). Bruniges amplified this statement, suggesting two forms of evidence teachers can use:

> First, there are the data – in many forms – that reveal a student's current level of knowledge and skills, relative to the curriculum and expected standards of achievement.The second type of evidence is the knowledge base about what works, with particularstudent cohorts, in particular teaching situations, and what doesn't (2012, p. 7).

To support these claims, Heritage (2007) stressed that no matter the type and quality of achievement data, they will have little impact on improvement if they are not used.

As stated earlier, factors such as school leadership and teacher capacity are necessary elements to using data in improvement activities (Wayman & Stringfield, 2006a; Young & Kim, 2010). Earl and Katz (2006) posited that the professional accountability of teachers is enhanced when appropriate use of all forms of achievement detailsare developed. To illustrate, Earl and Katz offered:

> Professional accountability is based on data, not as a final judgement but as part of the toolkit for understanding current performance and formulating plans for reasonable action…. Educational leaders and school staffs who are committed to professional accountability and making informed professional judgements

think of accountability not as a static numerical accounting but as a conversation, using data to stimulate discussion, challenge ideas, rethink directions, and monitor progress (2006, p. 13).

Although teachers are intently focused on teaching and learning activities, Means et al. (2009) suggested that further engagement in the timely analysis of achievement data to inform practice is needed. Furthermore, such engagement needs to be modelled for all teachers across all learning areas in order for them to become more fully involved in the educative process (Moody & Dede, 2008). Young (2010) challenged, "If teachers traditionally have not used assessment results to inform instruction-related decisions, what are teachers' assessment practices in general?" (p. 6). In their research, Wininger and Norman (2005) noted practitioners' inconsistent understanding of the role of assessments in instructional decision-making, and concluded that there can be both a lack of will and capacity towards using data. Earl and Katz (2006) highlighted several reasons why teachers did not use assessment data to inform future teaching efforts. These reasons included: Teacher scepticism towards data, a fear of data, and the lack of training on how to use data. Wayman and Stringfield (2006b) found that little effort was devoted to evaluating how well teachers used data and how instructive those data were. Even though the aim of effectively using data is to improve the learning environment, ensuring collaborative strategies in an explicit manner can be problematic (Wayman & Stringfield, 2006b).

Methodology

The study has relied principally on the recorded exchanges between the researchers and the participants through individual interviews. Such exchanges have been opportunities for the participants to express their perceptions, opinions, and the 'lived experience' of student achievement data use in their own language. The information to be analysed and interpreted by the researchers has been recorded almost exclusively in this 'natural' language of the participants as they attempted to articulate their understandings and experiences of student achievement. Drawing meaning from this kind of data required methods of qualitative data analysis, and the adoption of a qualitative, interpretivist paradigm (Neuman, 2011) to inform the methodological conduct of the study. This approach places high importance on interpreting and understanding meaningful social interactions (Weber, 1978), and the empathetic understanding of everyday lived experiences, or *Verstehen*, (Neuman) from the perspective of those who live those experiences. Furthermore, and consistent with the theoretical foundations of interpretive social science, symbolic interactionism has been chosen as the interpretive 'lens' for the study. Central to this perspective is the notion that individuals ascribe meaning to the interactions and phenomena encountered in daily life (Berg, 2007). Then, in turn, the researchers seek to validly interpret and 'uncover' the personal meanings conferred upon student achievement experiences by the main participants of the study.

A number of methods for investigating the concept of student achievement were available to the researchers. A qualitative, collective case study (Stake, 2000) was chosen to answer the specific research questions and acted as the orchestrating perspective of the research. The nature of this study focused exclusively on the opinions, descriptions, and perspectives of individuals regarding the strategic use of student achievement data. Seven schools were chosen so that a cross-section of opinions and perspectives could be accessed and compared. The researchers' intention to include seven 'cases' was to allow better understanding, insight, and ability to theorise about a broader context (Berg, 2007). Since the intention of the study was to investigate current strategies used by school personnel to enhance student achievement, a singular snapshot (Jensen & Rodgers, 2001) collection of data was required. It was expected that the data gathered in this way would be more

convincing than that which might emerge from a longitudinal examination. Focusing on single cases in this way allowed the researchers to investigate the central issue of student achievement at considerable depth, and to gather data that would help ultimately produce a descriptive account of the issues of concern (Stringer, 2008).

Methods

This study was interpretive in nature, and used multiple qualitative research methods to collect data about how seven Catholic secondary schools used Year 12 achievement data to inform practice. These methods included semi-structured interviews, researcher field notes, and researcher reflective journaling. The Deputy Principals of Curriculum from each school were involved in a single, 45-minute, one-on-one interview at their respective campus. The interrogatives used by the researchers were derived from the refined questions (see Research Questions section). Before the data collection for the project commenced, all interrogatives were field-tested in two separate interviews with current Deputy Principals in Catholic secondary schools. The responses generated during this field-testing process were not used in the research, and the feedback from the two individuals assisted in the refinement of interview questions and interview technique. The seven interviews were digitally recorded, and field notes were taken by the researchers during each interview. Interview transcription occurred after all interviews had taken place. Subsequently, each participant was offered a transcribed copy of the interview they participated in to check and verify that the conversation was accurately captured. Each copy has since been re-collected for safe storage. After each interview, and at repeated intervals between interviews, the researchers engaged in reflective journaling.

Sampling

Data were collected from Deputy Principals of Curriculum at seven Catholic secondary schools, all of which are in within the Perth metropolitan area. A cross-section of seven schools was purposively selected according to their Socio-Economic Status (SES). The type, composition, and SES ranking of each school are presented in Table 1. Both researchers have worked in secondary schools (in instructional and leadership roles) within the Archdiocese of Perth. One researcher has a professional responsibility to work regularly with Principals and Deputy Principals from all selected schools. Because of their access to Year 12 achievement data, and their responsibility for the interpretation and dissemination of these data to others within the school community, the Deputy Principals of Curriculum from each school were purposively selected as research participants. A pseudonym for each Deputy Principal was allocated during the transcription, analysis, and report writing stages of this research project. The pseudonyms for each Deputy Principal are presented in Table 2.

School	Type	Composition	SES Ranking
A	Secondary 7 - 12	Coeducational	High
B	Secondary 7 - 12	Coeducational	Average
C	Secondary 7 - 12	Girls	High
D	Secondary 7 - 12	Coeducational	Low
E	Secondary 7 - 12	Coeducational	Low
F	Composite K - 12	Coeducational	High
G	Composite K - 12	Coeducational	Average

Table1: Schools selected for the study

School	Deputy Principal (Pseudonym)
A	Mark
B	John
C	Luke
D	Mary
E	James
F	Jane
G	Michael

Table 2: Deputy Principals interviewed (Pseudonyms)

Data Analysis

Data from the various interview transcripts, field notes, and the researchers' reflective journals were analysed and explored for common themes. When analysing the collected data, this project adhered to the framework and guidelines offered by Miles and Huberman (1994). This framework attempts to identify relationships among social phenomena, based on the similarities and differences that link these phenomena. The approach itself is comprised of three main components, including: Data reduction, data display, and drawing and verifying conclusions. These components themselves involve three main operations: Coding, memoing, and developing propositions. First, the researchers engaged in data reduction, which refers to "the process of selecting, focusing, simplifying, abstracting and transforming the data which appear in written-up field notes or transcriptions" (Miles & Huberman, p. 10). In the process of reduction, the researchers summarised information from interview transcripts, field notes, and the reflective journal in meaningful ways such that final conclusions could be drawn or verified. Second, displaying the data involved the researchers extracting these common themes and grouping them according to their similarity or dissimilarity. The final component consisted of analysing these data, drawing conclusions from analyses, and verifying the conclusions with the original data set.

Within each of these components, the researchers employed a continual process of coding, memoing and developing propositions. Codes, as Miles and Huberman (1994, p. 56) explained, "are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study." These codes were attached to the data gathered through interviews, field notes and journal reflections, and were selected from those data based on their meaning. The researchers then used memoing to synthesise coded data together so that they formed a recognisable cluster grounded within one general concept. The memoing process also captured the ongoing thoughts of the researchers as the process of

coding took place. Lastly, as a study proceeds, there is a greater need to "formalise and systematise the researchers' thinking into a coherent set of explanations" (Miles & Huberman, p. 75). For this project, the researchers generated propositions about connected sets of statements, reflected on the findings, and drew conclusions from the study.

Limitations

Three factors limited the scope of this study. First, the research was confined to seven Catholic secondary schools in the Archdiocese of Perth, Western Australia. The researchers do not intend to generalise the findings from this case to other schools or contexts regarding the strategic use of student achievement data. While it is expected that general statements will be made about the case itself, it is not the intention of the case study to produce findings that will necessarily generalise to other contexts. However, to the extent that readers of the final thesis recognise elements of the schools that closely correspond to their own situations, they themselves may indeed generalise the findings to their situations. Second, the research concentrated almost exclusively on the perceptions and experiences of the Deputy Principals of the selected schools. Although the viewpoints of a selection of key informant staff members were solicited, no attempt was made to engage the wider school community; specifically, other school leaders or staff members, parents and the student body. Third, the research used a snapshot case study (Jensen & Rodgers, 2001) to collect data. As such, this method intentionally focussed on exploring strategies used by seven schools at a fixed point in time, rather than examining the topic of interest longitudinally.

Findings

The intention of this research was to explore how Year 12 achievement data are used by school personnel to inform practice within seven Catholic secondary schools. An analysis of the data gathered from interviews with seven Deputy Principals of Curriculum revealed three key insights regarding the improvement of Year 12 student achievement outcomes. These insights are: Communication of achievement data to key stakeholders, strategic use of achievement data by teaching staff, leadership strategies to promote an achievement culture to the students, information is power, and support for students. The findings of this qualitative research are presented below.

Communication of Achievement Data to Key Stakeholders

All Deputy Principals (7 out of 7) stated the communication of achievement data with students and parents was consistent and evidenced through regular newsletters, email notifications and learning management systems.The processes in place for using the achievement data was described by one Deputy Principal, Mark, "we share that [sic] data with our parents. We are selective in what we share and we certainly let parents know how the school has performed in terms of our measures." Mark added: "we certainly celebrate kids' success at Opening Assembly in the New Year and we invite our high flyers from the previous year [to attend] and we give awards for VET and ATAR students."Additionally, all participants reported a multitude of opportunities for the recognition of student achievement in all aspects of school life, especially academic achievement. This recognition was communicated as a prominent feature of the dialogue between the schools and wider community. For instance, Michael highlighted common practice at his school:

> Our first newsletter and the school website devote considerable space to Year 12 [students'] achievement. There is a good-sized blurb about academic results and we talk with our students when they speak at Assembly to our Year 10, Year 11 and Year 12 students.

For the senior years, all Deputy Principals (7 of 7) shared that they hold parent and student information evenings within the first week of Term One to ensure clarity of purpose and course expectations.

Strategic Use of Achievement Data by Teaching Staff

Comments from all seven Deputy Principals indicated teachers from their respective schools used achievement data strategically in teaching students and monitoring student progress. Furthermore, the Deputy Principals articulated a high degree of personal, intrinsic validation in relation to teachers contributing towards student success and achievement. The formal monitoring of student achievement was seen as fundamental by all Deputy Principals in seeking the best for the students across their schools. To illustrate, Mary commented that:

> I need to look at [student achievement data] because there has been a fair bit of time invested in our kids to get it right. By right, I mean the best for our kids. Once we have looked at the data and seen we have done really well or that kids haven't done so well, it's about looking at it at the deeper level and looking at particular Learning Areas and how they have performed.

Concerning the formal monitoring of students, John commented that:

> One of the first things that happens once the data are released by the Curriculum Authority and TISC, that [they are] analysed to see how the students have performed as far as their ATAR is concerned. Something I tend to do is compare what students actually achieved to their predicted ATAR which I present to them after the Semester One results from the previous year.

In light of this comment, all participants voiced a need for teachers to monitor and provide ongoing, strategic feedback regarding the improvement of student achievement. Reflective journal entries and interview testimony indicated that the success of strategic feedback was dependent on the extent to which formal processes were provided for and adhered to by staff. The effectiveness of these formal processes (e.g. documentation of instructional practice) was also reliant on the quality of the reflective conversations which occurred between staff. Through the promotion of specific individual teacher practices and collective team structures, the consistency of language and practice contributed to improving student achievement.

A majority of Deputy Principals (5 of 7) stated that formal structures for individual teachers to view data (e.g. moderation data) are not useful if those same teachers are not held accountable for student achievement. From the various statements proffered on this topic, Deputy Principals varied in their formal processes to develop written plans of action regarding achievement data. Across the majority of Deputy Principals interviewed (5 of 7), the direct involvement of senior leadership is represented by Luke's response:

> We do our checking [of Year 12 student performance]. The Principal and I meet a few times before staff come back in early January, because it's going to affect programs and planning for the year. We have a conversation immediately with the teacher and the Head of Department.

The importance of teachers using strategies effectively at all levels – and not necessarily at the Year 12 level – was voiced by participants as central to practices being informed by achievement data. In turn, these practices led to improved teacher accountability.

Leadership Strategies to Promote an Achievement Culture to Students

All Deputy Principals reported a 'culture' across their respective schools characterised by a commitment to improving student achievement. For example, Michael avowed:

> It's interesting; we are talking about procedures and practices, and while you can have a lot of these, ultimately it comes down to the passion and involvement of people. We have staff that have passionate conversations and really want to know how their students have gone in the exams in relation to the school assessment.

According to interview testimony and researcher-generated field notes, Michael demonstrates overt leadership responsibility for student performance at his school through words and actions. In turn, teaching staff promote a keen interest in whole school conversations about student achievement. Importantly, this promotion is evidenced across all levels of the school and not isolated to the senior years. The students, parents and staff all expected the promotion, recognition and analysis of student achievement information as the *modus operandi* for the school.

In a similar vein, 4 of 7 participants highlighted the numerous co-curricular activities teachers facilitate in providing students with multiple opportunities for academic support and tuition. These opportunities included the variety of homework clubs, peer tutoring opportunities and specific clubs for high achieving students. Participants noted that students are collectively invited or individually encouraged to engage with these planned opportunities are over an extended period of time. To illustrate, John stated:

> If students need some extra support on essay writing, what we do using the after school clubs, we will run some English sessions on essay writing. But some students that [sic] don't avail themselves of this; we actually target students based on results from the previous year. If we've seen a weakness, we target those.

John communicated that the support offered to targeted students is linked to evidence from achievement data in his school. He elaborated this point by stating, "So again picking up from that [sic] data, what are Learning Area Coordinators doing with that [sic] data, they offer support to all students." As members of staff, teachers need to be clear about their role in supporting every possible avenue for ensuring student success.

Information is Power

A majority of Deputy Principals (5 of 7) underscored the importance of carefully analysing available achievement data. Specifically, these participants drew attention to the impact that such analyses can have on the achievement culture within the school. James commented "The culture here of 'information is power' is essential for making good decisions for teachers and students. So the more information there is, assuming it is quality information, the better." At James' school, key practices comprised formal reports which identified trends and included specific recommendations necessary for improvement. With recommendations noted, James acknowledged that the possibility for change was more likely to occur – a finding evidenced across four other interviews. In instances where teachers sought support from school leaders to review achievement data, these data were made available to empower staff. Once data were accessed and analysed, the expectation was for teachers to implement strategies to improve achievement data.

To varying degrees, those five Deputy Principals offered that effective use of analysed details depended on the skills and attitudes of educators. Skills included the ability to ask interpretive questions, evaluate data quality, and effectively use achievement data to support teaching and learning. Jane stated that "There is so much data that comes [sic] from lots of different sources that if not interpreted correctly, can hide different pictures." According to individual testimonies from all Deputy Principals (7 out of 7) there are a variety of formal processes used for achievement data review. One statement reflecting such formal

processes in all seven schools was summarised by Mark's experience: "If there are concerns we would raise them. As the Deputy Principal, I would scrutinise [student achievement] data first and then offer specific advice to Heads of Learning Area." To amplify, Mark offered "Then together we go through some of the process side (teaching and curriculum), [and] I go through some of the things I would like them to concentrate on because there is so much data." Similar comments were offered by other participants, who consistently highlighted the need for school leaders to provide staff with appropriate processes to use achievement data analyses.

Support for Students

All Deputy Principals (7 out of 7) communicated the importance of schools providing quality, formal counselling advice for students and parents, especially at the senior secondary level. These participants have developed specialist staff (Deputy Principals, Deans of Curriculum, Year Level Coordinators, Career Counsellors) and systems to provide advice and to ensure that opportunities are always available. As articulated by Mark and several participants (4 of 7):

> Several people are important in this role. Myself, the Dean of Year 12 look after the welfare of Year 12s and we have a Careers Counsellor. Our role is to identify students across the board are at risk of not doing so well. Heads of Learning Area are counselling those kids. [For example] if Chemistry is not going so good, students get counselling at the Learning Area level. The Careers Counsellor, the Dean and I look at students struggling across the board, and in the end, getting the kids in the right subjects is the key to kids performing.

Michael also spoke of the frequency of academic counselling appointments held with students at his school. To illustrate, he stated:

> We have a Year 11 and 12 seminar period every week. This seminar period is used for seminars, revision seminars, running tests and assessments. But the vast majority of time, by me or the VET Careers Coordinator, talking to those students about what's coming up: Exam timetable, TISC, how to improve their exam techniques and study skills. One thing we have done recently is introduce a study skills program.

In addition to the academic counselling services offered to parents and students, participants commented on how achievement data analyses have enabled staff to provide advice accurately and confidently.

Discussion

Responses from all seven Secondary Deputy Principals indicated they viewed the strategic use of student achievement data as a valuable exercise within their respective schools. Moreover, each Deputy Principal openly articulated how their school was able to use achievement data to improve student learning outcomes. Analysis and discussion of data is a key prerequisite for ensuring that teachers make informed planning decisions for effective pedagogy, based on current and comprehensive data about students' learning needs (Masters, 2010). Their discernment of practices commonly exercised within schools focussed on three key themes. First, this discernment involved sharing methods of communicating achievement data to key stakeholders within the school community. Second, the strategic use of achievement data by teaching staff was highlighted. Finally, Deputy Principals reported on the role of school leaders in promoting an achievement culture within school communities.

Information to Key Stakeholders

All Deputy Principals proffered that their respective schools placed emphasis on communicating information to key stakeholders in the community. Activities frequently mentioned included school assemblies, parent and student information evenings, and student seminars, to ensure clarity of purpose and expectations. For example, and consistent with claims from Young et al. (2010), processes are in place during Year 11 subject selection time to clearly impress on all members of the school community the requirements for successful completion of academic pathways for senior secondary studies. Additionally, the degree of information flow within schools was evinced by regular newsletters, email notifications, course information booklets and learning management systems. Other comments centred on the quality of formal counselling advice for students and parents due to the high stakes for achievement at the senior secondary level. School efforts in developing specialist staff roles (Deputy Principals, Year Level Coordinators, Career Counsellors) to provide advice and to ensure that is advice was always available, were offered as outstanding services to the community.

The celebration and recognition of student achievement in all aspects of school life was the most consistent activity completed across all schools involved in the research. Regularly throughout the year – and most especially for senior students after the completion of WACE examinations – the opportunity for the entire school community to be exposed to the stories of the students was evident. According to Deputy Principals, the formal acknowledgement of student achievement allows confirmation of academic expectations and provides effective role models to younger students. It should also be noted participants linked the success of past students (even recently graduated students) and those alumni who also had competed further education to the long-term school achievement culture and success of current students. Alongside formal academic achievement, Deputy Principals underscored prominent cultural aspects valued and evidenced within school communities. Most notably mentioned were the schools' acceptance of each student and their family, and appreciating the student as an individual without pre-determined expectations. The multitude of opportunities for the recognition of student achievement in all aspects of school life, especially the academic, appeared a prominent feature of the dialogue between the schools and wider community. The acknowledgement of student achievement is linked formally to the ethos of all Catholic schools to be 'good schools' (Mandate Letter, 2009, para 6).

All participants highlighted the passion of staff to access Year 12 student achievement data during the January school holidays. Despite this passion, and consistent with findings from Ingram et al. (2004), Deputy Principals disclosed a tendency for teachers to not carefully scrutinise past achievement data to inform future performance. Furthermore, Deputy Principals' testimonies varied with regards to the degree of teacher collaboration to improve student learning outcomes. In a similar vein to Fullan (2007), the extent to which there was a high level of teacher accountability, ownership and responsibility for achievement data, and how effectively teacher practices could be analysed, was not always clearly evidenced in practice.

Strategic Use of Data by Teachers

Comments from all Deputy Principals revealed that teachers strategically use achievement data to improve student learning outcomes. In particular, a variety of teacher-led commitments related to facilitating student achievement was noted. The formal monitoring of student achievement was seen as fundamental for teachers seeking the best for the students across all schools involved in the research. The informal voluntary (tuition, email support) and formal involvement (homework clubs, extended library hours) of staff in providing after-

school opportunities for student support was evident in all schools interviewed. All Deputy Principals intimated that staff either invited or encouraged students to participate in such formal and informal opportunities over an extended period of time. As a corollary to this staff commitment, Deputy Principals voiced a high degree of personal, intrinsic validation regarding teachers contributing to student success and achievement. Several researchers have considered student achievement data as an impetus to stimulate decision-making. Factors such as leadership and teacher capacity are well supported by commentators as necessary elements to using data in improvement activities (Means et al., 2009; Moody & Dede, 2008; Wayman et al., 2007, Young & Kim, 2010). Even though the intention of effectively using data is to improve the learning environment, ensuring that explicit collaborative strategies occur can be problematic. Achievement data are available in many forms, not just at the conclusion of Year 12. Multiple writers affirm this claim (Campbell & Levin, 2009; Schildkamp & Kuiper, 2010), claiming the ongoing use of assessment data in individual classes is vital and needs to be monitored to ensure modification of student support as required. In earlier work, Stiggins (2001) noted thatwaiting forthe completion of formal (summative) assessments to detect areas of student need is too late.

Teacher competency in using achievement data was echoed when discussing the ability to modify the curriculum as informed by data analysis. All Deputy Principals evinced a high degree of teacher satisfaction when working with students, and noted the importance of using evidence from multiple sources to inform teacher practices. Equally, Deputy Principals acknowledged that formal structures for individual teachers to view data (such as moderation data) were not useful if no accountability existed for teachers within a school. This acknowledgement is sustained by Campbell and Levin (2009), who highlighted effective achievement data use as a professional responsibility for teachers. The testimony from Deputy Principals varied significantly concerning the degree to which their respective schools used formal processes in developing written plans of action. The most common practice voiced involved the preparation and submission of documents containing analysed student achievement data for each WACE course to school leaders. Typically, this process would involve the teacher and Head of Department reviewing data together and documenting any required actions. Some schools scheduled formal meetings with leadership to discuss findings, while others focused much of the data review at the individual teacher or Department level. Irrespective of this variance, these participants agreed that no matter the type and quality, achievement data would have little impact on improvement if unused. Rather, data use would be dependent on the skills and attitudes of educators – a comment raised earlier by Bruniges (2012). Skills elicited included the ability to determine incisive questions, ask interpretive questions, and evaluate data quality accurately. Although multiple admissions outlined the need for teaching staff to develop such skills, confidence was expressed regarding teachers' ability to modify practices through evidence provided by the formal analysis of achievement data. Consistent with the work of Heritage (2007), all Deputy Principals highlighted that before teaching staff use achievement data effectively, commitment was required by teachers at a school-wide level. Bruniges (2012) presented the concept of school-wide improvement from the premise that teachers are the most significant in-school variable influencing student outcomes. Therefore, an enhanced teacher capacity for quality pedagogical decision-making is required to significantly improve student outcomes.

Leadership

Deputy Principals shared a variety of leadership practices concerning strategic use of achievement data across their respective schools. Direct senior leadership involvement was largely represented by the Deputy Principal and Principal checking Year 12 student achievement data before staff return for the start of the school year. Then, Deputy Principals

would scrutinise data and offer specific advice to Heads of Department, highlighting areas requiring attention. This process continued with conversations held between Heads of Department and subject teachers. At all times, participants consistently highlighted the need for school leaders to provide staff with appropriate processes for analysing achievement data. Masters identifies that this is evident to an outstanding level in schools when:

> The principal and other school leaders clearly articulate their belief that reliable data on student outcomes are crucial to the school's improvement agenda. The school has established and is implementing a systematic plan for the collection, analysis and use of student achievement data (2010, p. 4).

Again, practices varied regarding interactions between Deputy Principals, Heads of Department and individual teachers. For instance, conversations between Deputy Principals and Heads of Department would take place, but because of logistical constraints, these conversations would not always involve individual teachers. Several participants indicated that such action required considerable professional trust between Deputy Principals and the Heads of Department. Others added that missed opportunities resulted from postponing difficult conversations with individual teachers about results. As argued by Ingram et al. (2004), the collection and analysis of achievement data needs to lead to reflection and action by school staff at all levels. For improvement, all teachers should be using explicit systematic data analysis to continually monitor and assess practice and to provide the conditions for improvement.

The critical importance of collegiality, collaboration and professional respect across all aspects of school life was underscored by Deputy Principals. These findings receive widespread support from various commentators (Means et al., 2009; Schildkamp & Kuiper, 2010; Young et al., 2006; 2010). Additionally, Deputy Principals suggested that teachers possess a keen awareness of the required training and 'lived' experiences to effectively use achievement data to inform practice. At the stage of reviewing achievement data in a school, the opportunities for formal reflection combined with informal reflection and action is critical. As highlighted by Young et al. (2010), the development of a collaborative school culture to inform practice is fundamental to avoid inefficient practice. Interview testimony revealed a consistency with the work of Means et al. (2009) whereby individual teachers are generally reluctant to share assessment results, especially if this highlighted a weakness in their classroom practice. To encourage collaboration among teachers formalised, well-structured, school-wide practices need to be developed and supported by leadership at all levels. Analysing data and using commonly agreed-upon strategies are important in improving student achievement outcomes.

It is clear from the collected data that teachers provide considerable learning support opportunities for students. Consequently, teachers are intently focused on the teaching and learning function. As members of leadership groups, secondary Deputy Principals have the opportunity to acknowledge good practice and initiatives in their schools. According to Campbell & Levin (2009), this acknowledgment strengthens school culture, builds belief in student capacity, and facilitates improvement in student performance. Despite these efforts, Deputy Principals have suggested that teachers need to engage further in the timely analysis of achievement data to inform current and future practice. Earl and Katz (2006) argued that such engagement upholds the professional accountability of teachers, and that teachers who are not confident in analysing such data require training and support. Furthermore, the quality of feedback to current students is improved if it is informed by longitudinal achievement data (e.g. from previous students), and with reference to achievement data based on state-wide standards.Consistent with findings and recommendations of Supovitz and Klein (2003), these analytical practices need to be modelled for all teachers across all learning areas in order for them to become more involved in the educative process. The setting of expectations for school staffs using data to inform decision making is seen as a necessary component of improvement. As suggested by Knapp et al. (2007), the use of data is a responsibility of

leaders for improved productivity in all aspects of the teaching and learning enterprise.

Conclusion

As key members of leadership groups, Secondary Deputy Principals have the opportunity to acknowledge and communicate good practice within their schools. Specifically, these Deputy Principals have outlined how schools communicate student achievement to key stakeholders in the community, how teachers strategically use achievement data within classes, and the extent to which leadership personnel promote a culture of achievement. In addition to acknowledging good practice, the Deputy Principals highlighted particular areas of improvement for teachers, leaders and schools.

The next, immediate step of this research project is to invite the seven Deputy Principals to a professional meeting where the key findings of the research will be presented by the researchers. A summary sheet of these findings will also be made available to the Deputy Principals. Following the presentation, Deputy Principals will be invited to individually (a) reflect on the strategies in place within their respective schools, (b) identify areas of improvement regarding strategic use of achievement data, (c) share these reflective insights with a colleague in attendance, and (d) draft an action plan for implementation. Following the professional meeting, the researchers will contact all Deputy Principals to ascertain the effectiveness of any changes implemented regarding the strategic use of achievement data. The researchers hope that monitoring the implementation of any strategies will promote a culture of positive achievement across the Catholic education system in Western Australia.

To build the capacity of individual teachers, individual schools and ultimately practice across an entire system, explicit acknowledgement and collaborative sharing of effective practices must be encouraged (O'Neill et al., 2010). Hopkins (2007) argued that for the notion of 'every school, a great school' to become a reality, a move from individual school improvement efforts and short-term objectives to a sustainable system-wide response is required. This argument is supported by Campbell and Levin (2009) who claimed that "To be fully effective, however, assessment for learning needs to be conceived of not only as a classroom and school level strategy, but just as importantly as a systemic strategy in which the schools, districts, and state are working together towards shared goals for student learning outcomes" (2009, p. 62). Consequently, data and effective strategies to use these data to improve the teaching and learning environment is a local school, system-wide, and national imperative. The establishment of opportunities for collaboration across schools focusing on enhancing the strategic use of Year 12 achievement data may strengthen a school system. The promotion of a system-wide initiative in the form of a forum for sharing strategies to monitor student progress is to be strongly encouraged.

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