

CHAPTER SEVEN

SUMMARY AND CONCLUSIONS

Introduction

On page four of *The West Australian* 18 Nov 2002, a headline announced ‘Spelling, numeracy fall’. The article revealed that there has been a “baffling drop” in the primary school results for the national benchmark tests which have been conducted annually in Western Australia since 1998. Spelling levels have apparently dropped “across the board” and for year five students the results are the “lowest since national testing began.” The Director-General of Education, Mr Paul Albert, moved quickly to set up an enquiry into “the crisis” and the committee he established hopes to be “ready to report by the start of the next school year.”

Articles such as this one are quite common in the popular press and beneath the journalistic flair lie some stern challenges for schools and schooling. Whilst the decline in standardised test scores is inconclusive given their questionable validity (Brady, 2000; Ramirez, 1999), it is the tests themselves and the perceptions they create that cause the most damage. For the 208,000 newspaper readers of *The West Australian* the article referred to above, suggests that the tests are important, that literacy and numeracy are curriculum priorities, and that schools are failing in their job. In layman’s terms, national benchmark tests, whatever that might mean, are the measure of a ‘good’ school.

Few in the community would see national testing as the harbinger of Federal Government manipulation of school programs and processes in order to cope

with the economic demands of globalisation. Not many would worry that schools are being defined more by the standard of their pen and paper academic tests than by the level of their pastoral care. Some might recognise that the newspaper report will increase the chances that families will choose to send their children off to private schools.

When a “minor fluctuation” in a national test can trigger a committee investigation into school standards there is a need for everyone to ask “what criteria and whose criteria do we use to determine the success or failure of the schools?” (Engel, 2000, p.15). This thesis has been a timely attempt to do just that.

This final chapter of the thesis, is organised into five sections. First, a summary of the study is presented. Secondly, the generalisability of the research findings is considered and discussed. Thirdly, the research findings are examined in terms of their implications for other bodies of theoretical literature. Fourthly, the implications of the research findings for policy makers are presented. The fifth section considers implications of the research for practice, and is subdivided into four areas: implications for curriculum; implications for teaching; implications for management and leadership; and implications for teacher education. Consideration is then given to the implications of the research findings for further research. The chapter ends with concluding comments.

Summary

Primarily this thesis entitled ‘Western Australian Principals’ Theorizing on ‘Good’ Schools’ set out to examine the conceptions of such schools held by

a sample of principals from a variety of government primary schools. In the course of undertaking this task there was a requirement to clarify the meaning of ‘good’. As an outcome of the research it was anticipated that propositions would be created enabling the research to be of some value to the education and wider community. Ultimately it was expected that the thesis would provide some answer to the question – good schools for whom?

Though the researcher, an experienced primary school principal, had long been interested in the concept of ‘good’ schools, passive interest precipitated into active endeavour on the 11 November 1996. This was the first day of a week-long OFSTED inspection in the eight classroom Church of England school on the outskirts of Blackburn, northern England. As a temporary teacher in this little school, the researcher was suddenly exposed to a ‘foreign’ and emotionally unpleasant perspective on what constitutes a ‘good’ school.

To staff and parents the little school in question was inherently ‘good’, the ‘goodness’ being felt and experienced through the interactions of the school community, the conduct of the lessons and the happy chat of all the students. Yet the final word on the official ‘goodness’ of that school was in the hands of five strangers from the Office of Standards in Education. Hence, the question – what really is a ‘good’ school?

Returning to Australia, it became apparent that the OFSTED experience might have the potential to migrate. Western Australian schools received their checklist for evaluating schools at the beginning of 1997. This checklist

took the form of a booklet entitled *School Performance: A Framework for Improving and Reporting* (Education Department of Western Australia, 1997). The booklet contained a spreadsheet of school effectiveness characteristics, initially for school self-review, the summary of which, later in the year, formed the basis of the District Director's school review. There was no escaping the increasing external pressure to audit schools. This pressure grew with the arrival of a new Director General for the Western Australian Education Department, Cheryl Vardon. In March 1998 Vardon was saying:

There is a growing realisation that the best assurance about school quality comes from rigorous requirements for school self-review and reporting, complemented by independent review of a sample of schools to ensure that local accountability processes are operating in a rigorous and credible way (Vardon, 1998b, p.4).

Increasing devolution of authority to Western Australian schools and the commencement of national testing for Year 3 students in 1998 were symptomatic of government restructuring. Not only was restructuring endeavouring to address national issues of global competitiveness, but it was also redefining the centralist conception of a 'good' school. From the government's standpoint, 'good' schools were institutions that aided the Federal cause by generating high academic standards, contributing skilled young people to the workforce, and operating efficiently and effectively. This was not a stance on 'good' schools that would necessarily be acceptable to everyone, especially those working in schools.

Devolution of powers to schools also spawned school competitiveness and school choice. The Western Australian School Education Act (1999) led to the

abolition of school boundaries and the increased capacity of schools to seek monetary contributions from parents, both moves indicating a shift towards marketization and privatisation of public schooling. This, in turn, gave some parents, through school councils or the power of choice, the opportunity to modify and influence the profile and characteristics of schools. The parent or community concept of 'good' schools was changing.

A further pressure being applied to schools came in the form of a new outcomes based curriculum. This *Curriculum Frameworks* (1998) document, and its associated curriculum outcomes booklets arrived in 1998, with full implementation due in 2006. This curriculum changes accountability emphasis from inputs to outputs and, although broad in scope, has been compromised by the restrictiveness of national testing. The *Frameworks* document has also applied pressure on school staff to adjust to the new outcomes approach by directing them to modify classroom teaching and accountability practices. These pressures have challenged the traditional focus and role of schools.

The sequence of events leading from school inspection in Blackburn to national accountability in Western Australia, exponentially increased the researcher's sense of unease about the nature of 'good' schools. It appeared that ownership for the definition of 'good' had passed into the hands of authorities outside of schools. There were now two questions needing answers – what is a 'good' school, and, good for whom?

The researcher's focus since 1996 has been directed towards the concept of 'good' in schools. There was always a conscious avoidance of words such as

‘quality’, ‘excellent’, ‘successful’ and ‘effective’. These words, and others like them, appeared to have specific connotations whereas ‘good’ seemed to have wide and popular appeal. Ironically, when the research title for this thesis was approved and interviews were getting underway, the Western Australian daily newspaper carried a page one story under the by-line *Bad Schools Cloaked by Code of Silence* (The West Australian, 4 Oct, 2000, p.1). This article, which was damning of the public unavailability of national test results, noted that “a good school added ... between 9 per cent and 10 per cent to a student’s scores.” ‘Good’ schools and ‘bad’ schools were in the news and probably everybody had a different interpretation of what such schools might be.

In retrospect, the choice of the word ‘good’ to describe the kinds of schools that people would like to see, was an appropriate one. As with the newspaper article, the word demands no technical explanation. This thesis opened with Moore’s illuminating definition reprinted from the 1903 version of *Principia Ethica* (1959):

Good is a simple notion, just as ‘yellow’ is a simple notion; that, just as you cannot, by any matter of means, explain to anyone who does not already know it, what yellow is, so you cannot explain what good is (Moore, 1959, p.7).

Data collection for this thesis was primarily by interview and, consistent with Moore’s notion, none of the fifteen principals requested a definition of ‘good’. All fifteen applied their own meaning to what is, in the end, a value judgement (Ball, 1997, p.334). That is what this research project had hoped to obtain – the principals’ values encompassed in their concept of a ‘good’ school.

There was initially no set number of principals chosen for interview. Nomination of volunteers was sought from amongst government primary school principals in the Perth education district and 26 candidates responded. Subsequently, some other principals were chosen from the Joondalup and Fremantle education districts. A total of fifteen principals made up the final list, seven from the Perth district, eight from Joondalup and one from Fremantle. Amongst the principals chosen, using a technique known as ‘purposive’ sampling (Lincoln and Guba, 1995, p.40), there was a mix of ages, sexes and years of leadership experience.

Most interviews were conducted in the office of the interviewee. An ‘aide memoire’ was used to ensure that major areas of the ‘good’ schools’ topic was covered. None of the fifteen principals had any difficulty occupying their allotted hour and none objected to the tape recording of their ‘conversation’.

Interviews were subsequently transcribed in full and principals were offered the opportunity to edit their contribution. The transcripts then became the main data source for subsequent analysis and coding, although use was also made of documents, observer notes, memos and journals. These materials were subjected to a formalised data analysis procedure.

The theoretical underpinnings of the research method used can be summarised as post-positivist, naturalistic, qualitative and emergent. This was a piece of research that began with no theory to prove and no propositions in mind. The data analysis was undertaken using the framework of grounded theory (Glaser and Strauss, 1967; Strauss, 1987; Strauss and Corbin, 1990). Grounded theory outlines the steps used to convert raw data into concepts. The critical skills

involve breaking down the raw data into concepts. In the end five propositions were generated around five themes: ‘Weaving the Fabric’, ‘Walking the Talk’, ‘Producing the Goods’, ‘Leading and Lagging’ and ‘Seeing is Believing’. Each of the five themes was named using an ‘in vivo’ code (Strauss, 1987, pp.33-34). ‘In vivo’ codes are words or phrases taken directly from the original transcripts of interviews. Strauss (1987) describes ‘in vivo’ codes as having ‘vivid imagery’ and important local meaning.

Despite being presented separately, the five themes and their associated propositions are interrelated elements of a conceptual construction termed, in this thesis, the ‘good’ school. The interconnectedness of the five themes has been represented diagrammatically as a ‘puzzle’ with five parts. The theme ‘Weaving the Fabric’ is posited as the central piece of this puzzle and is linked to each of the other four pieces. The analogy of the ‘puzzle’ is intended to highlight the ‘bricolage’ (Ball, 1997, p.317) or self-constructed nature of schools, whereby each school is a unique mix of many different parts. The word ‘puzzle’ is also associated with the paradoxical nature of many characteristics of good schools. Much that is ‘good’ in schools can, from a different perspective, be seen as ‘bad’.

It must also be noted, that this thesis has set out only to examine the conceptions of selected primary school principals, in relation to what they regard as a ‘good’ school. The five emergent themes represent some synthesis of their ideas, but do not purport to constitute a plan of action to create the ‘good’ school, nor to represent the universal template of such a school. That is the territory defined by school effectiveness research and the antithesis of what

the research presented here intended to do. Similarly there is no offer of a quick-fix for the ‘failing’ school.

This thesis has created a snapshot of what fifteen experienced educators theorize a ‘good’ school to be. Contained within the propositional theories are various properties that help identify the values, goals, and processes associated with particular ‘good’ schools. It is the intention of this thesis that those values, goals, and processes stimulate discussion on the questions of: What is a ‘good’ school, and good for whom?

The superordinate proposition emerging from this current study, and thematically titled ‘**Weaving the Fabric**’ states that: First and foremost principals consider that a ‘good’ school fashions itself an ethos which engenders the oft times intangible characteristics of a positively-orientated, authentic, caring community.

The title ‘Weaving the Fabric’ alludes to the consideration that a ‘good’ school consists of a myriad of interwoven threads or properties. These threads together create the fabric of the school. The basis of this fabric is woven from the beliefs and values that define the school. These major threads, with which all else is entwined, are termed the ethos. A school ethos is considered in this thesis to be the central feature of a ‘good’ school.

The creation of a school ethos is no happenstance, though it may change or develop complexity over time. It is a deliberate expression of the position described by one principal as “What we believe about education, kids and stuff” (KY, 138). A school ethos ought to be documented because it represents

the fundamental values espoused throughout the school. It is no coincidence that ethos is considered a central property of a school because the teaching of values and beliefs is what schools do. It is also central because it defines the school. Outsiders to the school will judge its 'goodness' and create its reputation on their evaluation of its ethos. The nature of the school's ethos not only identifies what the school values but also who it values, helping provide an answer to the question – good for whom?

Significantly, principals who had opened, or were opening new schools, believed an ethos statement to be the crucial first development of the school, with procedures and processes being built around that statement. Principals 'regenerating' schools that had 'drifted' or 'decayed' (Ball, 1997) felt likewise, resurrecting the old school ethos or creating something new. The message was consistent - first be clear about the school's values and beliefs.

The ethos cannot be installed after the other structures are in place because structures are built on values and beliefs. Where there is no formal ethos in a school, staff and community will create their own. Donnelly outlines a range of ethos positions in a school ranging from 'aspirational' which incorporates the institution's written statement, through to 'moral attachment' which is the individual's "deep seated thoughts, feelings and perceptions" (Donnelly, 2000, p.152). If a school doesn't generate or maintain its set of values and beliefs, individual values and beliefs will move in to take their place. That is damaging, directionless and chaotic. School ethos statements represent a shared understanding created, and adhered to, by all members of the school community.

An ethos is not something created and put aside, it should be something that can be felt and seen throughout the school. This is why the principals interviewed for this research consider it to be the key feature of a ‘good’ school. Ethos is everywhere because beliefs and values are everywhere. Ethos must be maintained. It can be part of a staff meeting, a parent talk or an assembly. There should be elements of the ethos in the school vision and the school plan. It should be part of the atmosphere of the school and it should be on display in the playground “alive in front of you as the kids move around the school” (TK, 178).

The ethos engenders other perceived properties of ‘good’ schools that are encompassed by the theme of ‘The Fabric’. These properties are ‘a positive school environment’, ‘authentic processes’, ‘caring inclinations’ and a ‘distinct school community’. Without a defined school ethos none of these properties could exist.

A positive school environment is perceived as a place where people want to be. The term ‘positive’ translates into predictable, humane, constructive and happy. It is considered that to achieve this consistency and focus in the environment all members of staff need to be accepting of the school’s values and beliefs system.

A positive school environment is not restricted to students. Schools should be pleasant places for everyone. These attitudes develop amongst the school community if the school processes are authentic. Authenticity describes processes built upon the ethos. Because they are ‘authentic’ they are reliable, consistent and predictable, and as such they promote confidence and comfort.

Examples of such processes in ‘good’ school are personal relationships, behaviours, teaching methods and expectations.

Principals consider that schools with a strong core of values and beliefs will be caring schools because they will value people. Pastoral care plans for children will be evident but they must also be accompanied by wellbeing programs for staff. In addition the caring environment will extend into the concept of safety with ‘good’ schools being perceived as safe places for all.

‘Weaving the Fabric’ suggests that the ‘good’ schools’ central core of values and beliefs finds its ultimate extension in the formation of a strong, collaborative and supportive school community. This community should reflect the values and beliefs that the school itself holds.

The theme ‘**Walking the Talk**’ has a focus on leadership. The proposition encompassed in this theme states that: Principals consider that a ‘good’ school has dynamic leadership which enables a school vision, copes with ambiguity, and structures productive relationships, in the pursuit of quality teaching and learning.

Each of the fifteen principals interviewed for this thesis headed up what was, by reputation, a ‘good’ school. That they were dynamic leaders appears evident from their impressive career records and by their actions in their schools. One of their most significant contributions is to become instigators and facilitators of the school vision. This vision, built upon the ethos sets the direction for the school.

Although the vision must ultimately be a collaborative one it is the positive deliberations of the principal that set the process on its way. In new schools, foundation principals assert their own vision because that is why they have been appointed to the position. In similar fashion, principals joining schools that have fallen on hard times initially need to head the renewed direction for the school. A equipoise between the right amount of collaboration and control is the balance for intelligent leadership to find.

Several principals who contributed to the current research, used the phrase ‘tie it all together’ when speaking of the vision. Their comments are apt in light of ‘weaving the fabric’ for the school. Without a vision statement schools can waste energy as staff figuratively ‘battle against one another’. Such battles will help destroy the cohesion of a school.

It was perceived that dynamic school leaders not only inspire the vision, but are able to decisively cope with the ambiguity that plagues all schools.

Devolution in particular has exacerbated the decision-making role with more responsibilities falling upon the school. Increased responsibility, not matched by a similar growth in authority, has created conflict between a principal’s management and leadership role. Once again the dynamic leader will find the best balance between the two.

As a final consideration dynamic leaders appear to create and maintain productive relationships amongst staff. One common role that befits this function is that of ‘gatekeeper’, whereby principals protect their staff from unreasonable pressures and demands. Dynamic principals also take on the task of empowering staff by inspiring them and ensuring that in some way they

make a positive contribution to the school. It is the leader's role to 'unleash the talents' in the school in pursuit of raising the quality of teaching and the learning.

'Producing the Goods' was the second subordinate theme. It headed up the proposition that: Principals consider that a 'good' school questions the efficacy of external testing, creates self-assessment tools, attempts to be transparently accountable to its own community and encourages child centred teaching and learning. This theme focuses on school accountability and pays particular attention to three facets of accountability which have impacted on Western Australian schools in recent times. These facets are national testing, an outcomes based curriculum, and a more intense audit and inspection procedure.

All of the principals interviewed in the course of this current research were strongly supportive of the need for, and appropriateness of being accountable. It is with particular forms of accountability that they had some dispute. Chief amongst these forms was national testing.

National testing, in operation since 1998 in Western Australia, now tests all children in years 3, 5 and 7 of government schools. Principals expressed broad concern about the value of these tests to children's learning, the effect the tests were having on school processes, and the apparent political motivation behind such tests. National testing was considered to be diverting attention from the core values of the school, and from the more intangible and less easily tested areas such as pastoral care and developmental learning.

Similar, but less trenchant concerns were held about school audit visits conducted biannually by District Directors. There was a desire for these visits to direct more attention towards the school ethos and vision. Support was generated for increased emphasis on visits to classrooms and other methodologies that would result in a better 'feel' for school achievements.

Generally, principals considered that 'good' schools were well able to cope with the compliance issues of external testing and District Director inspections. In particular, schools were taking steps to glean as much diagnostic data as possible from the external tests. 'Good' schools were involved in sophisticated processes within their own school, and with clusters of other schools, comparing data and assessing 'value-added' contributions. Schools were also being proactive in developing their own self-assessment tools, a challenging task when faced with the diverse philosophical demands of standardised tests and of developmental curriculum.

In line with their support for the concept of enhanced accountability, 'good' schools were considered to be creating processes of reporting and assessment that were transparent to all those who were involved. Many schools were issuing an annual school progress report to the community even though such requirements were not yet obligatory. Schools were also involved with parent training and information sessions so that there was widespread understanding of school and external assessment procedures.

Finally, 'good' schools had made substantial progress with child-centred teaching and learning, a technique advocated by the *Curriculum Framework* (1998). This process was aimed at making children self-directed learners who

would be capable of goal setting, self-assessment and reflection. Such a process also produced more openness and transparency in the classroom. Associated accountability formats such as portfolios and ‘learning journeys’ were allowing parents much more involvement with the development assessment of their children.

The third theme in the subordinate propositions was ‘**Leading and Lagging**’ which introduced the proposition that: Principals consider that a ‘good’ school nurtures a symbiotic relationship with its local community with a view to meliorating educational change. This proposition seeks to highlight the school’s paradoxical position in society whereby a school is philosophically an agent of change yet is also bound to respond to the wishes of the community it serves.

The focus of the theme is encapsulated in the phrase ‘symbiotic relationship’. This phrase envisages the school’s relationship with its parents to be of mutual benefit, despite the dissimilar characteristics of the two parties. Principals’ perceived that the achievement of such a productive relationship hallmarked a ‘good’ school.

Developing a healthy relationship between school and parents involved a variety of strategies including ‘welcoming’, ‘involving’, ‘meeting’, and ‘empowering’. Many schools had taken a critical interest in the aspect of ‘empowerment’. The act of empowering parents involves the sharing of information and increasing familiarity with school and system policies and procedures. Empowerment of parents is perceived to rally their support for change by allaying their conservatism and distrust. Whether schools

should lead or lag remains paradoxical. It ceases to become an issue if schools are working harmoniously with their communities.

‘Seeing is Believing’ is the final subordinate theme. This theme introduces the proposition that: Principals consider that a ‘good’ school generates a sound reputation which, although ultimately linked to quality teaching and learning programs, is heavily promoted through the marketization strategies of attitude, appearance and public opinion’. Paradoxically, this final proposition is the least educationally oriented statement, dealing more with people’s perceptions, biases and even misunderstandings. Prospectively, however, this is the area which bestows on a school the coveted title of ‘good’ school. If ethos and vision weave the tapestry for the school, reputation and public opinion establish its value as a work of art.

Marketing of schools, though only in its infancy in Western Australia at the time of the research for this thesis, had already become an important issue for schools and school principals. The new Western Australian Education Act (Education Department of Western Australia, 1999) had removed school-intake boundaries and parents were free to make their choice of school. This was a new freedom and challenge for schools.

Though not all principals were convinced that the marketplace and the competitive atmosphere were about to improve the quality of education they were all critically aware that there was a need to present their own school in the ‘best possible light’. There was also the realisation that, in the end, a sound reputation is built on more than image and publicity. A ‘good’ reputation is

woven from the strength of the ethos, the quality of the environment and the standard of the teaching and learning.

The Research Findings and Matters of Generalisability

The five propositions that have emerged from the research into 'Western Australian Government primary school principals' conceptions of what constitutes a 'good' school have limitations placed on their generalisability. Some of these limitations were built into the research topic itself. The data were collected in Western Australia and as such influenced by political, economic, social and legislative conditions that existed at that place and at the time the study was conducted. Further, the research was limited to government primary schools with only principals being interviewed. Because of constraints of time the sample schools were restricted to three Perth metropolitan education districts.

The selection method of 'purposive sampling' (Lincoln and Guba, 1995, p.40) and the process of 'modified inductive analysis' (Stainback and Stainback, 1984) which were utilised by the researcher to set the boundaries for this study do create a situation where the researcher limits the number of cases or sites to be investigated. In turn, these methods make no claim that the propositions emerging from the research are inclusive beyond the defined locations; "What can be discovered by qualitative research is not sweeping generalisations but contextual findings" (Maykut and Morehouse, 1994, p.21).

Nonetheless, while it is not possible to claim generalisability in the sense in which the term is used by quantitative researchers, the five 'good' schools propositions have generalisability in the following sense:

Insofar as theory that is developed through this methodology is able to specify consequences and their related conditions, the theorist can claim predictability for it, in the limited sense that if elsewhere approximately similar conditions obtain, then approximately similar consequences should occur (Strauss and Corbin, 1994, p.278).

Lincoln and Guba's (1985) notion of 'transferability' extends this sense of generalisability. They support the argument that although qualitative research does not adhere to the positivist process of 'probability sampling' (Punch, 1998, p.260), the collection and creation of 'thick description' does transfer to other settings and contexts. Thus, as Lincoln and Guba put it, although the 'good' schools researcher, operating in the 'naturalistic paradigm':

... cannot specify the external validity of an enquiry; he or she can provide only the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility (Lincoln and Guba, 1985, p.316).

This research on 'good' schools has attempted to maximise the potential for transferability by providing accurate and comprehensive background data for the five propositional statements. Extensive use has been made of transcript quotations as well as associated detailed information on various school contexts. This conceptually dense description is spread across chapters five and six.

The five propositional statements may also find 'generalisability' in the sense that the readers can relate to the information and outcomes and adapt the findings to their own situation. This "reader or user generalisability" (Burns, 1994, p.327) may be particularly pertinent to Western Australia, although many of the contextual changes in that location are common across Australia, and possibly relevant in similarly developed countries such as England and

Wales. There is a reflective potential in this ‘good’ schools research which may allow principals, other school leaders, teachers and involved community members to develop “new insights, understandings and meanings” (Clarke, 1997, p.207).

Finally, as Lincoln and Guba suggest:

Naturalistic inquiry operates on an open system; no amount of member checking, triangulation, persistent observation, auditing or whatever can ever compel; it can at best persuade (Lincoln and Guba, 1985, p.329).

It was the intention that this thesis on ‘good’ schools provide enough substance to generate interest and sufficient argument to stimulate reflection; it was the hope that it could persuade.

Implications of the Research Findings for Theoretical Literature

This thesis, which has attempted to examine ‘primary principals’ conceptions of ‘good’ schools, was developed largely in response to the apparently damaging nature of an OFSTED inspection. It was apparent that OFSTED based its measurement criteria on the theoretical literature of school effectiveness research (Law and Glover, 1999, p.149). Since OFSTED’s statement of corporate purpose is ‘improvement through inspection’ (OFSTED, 1995) it is indubitable that school effectiveness research is utilised to improve schools.

The review of literature in chapter three of this thesis drew out the difference between the theoretical literature of school improvement research and that of school effectiveness. In summary, school improvement research involves operating within schools and creating practical projects in an attempt to instigate change (MacBeath, 1999, p.17). School improvement research has a

belief that all schools are unique, that the internal conditions of schools are important and that improvement occurs with a combination of top-down and bottom-up initiatives (Reynolds, Hopkins and Stoll, 1993, p.42). The focus of school improvement is on individual teachers, school processes and practitioner knowledge. Much of the work in this thesis on ‘good’ schools has similar beliefs and similar focus, expressing some support for the school improvement philosophy and methodology.

School effectiveness research does not mesh with that of school improvement. Brighouse and Woods (1999) describe school improvement as being about ‘verbs’ and school effectiveness about assembling ‘nouns and adjectives’. School effectiveness, is concerned with an “understanding of the characteristics and processes of effective schools” (Brighouse and Tomlinson, 1991, p.4). Unlike school improvement research, school effectiveness is a ‘snapshot’ approach, focussing on the school as an organisation and relying on quantitative research knowledge rather than qualitative data from observations and interviews with practitioners. School effectiveness research is keenly focussed on improvement in student outcomes (Reynolds, 1996a, p.145).

School effectiveness research concentrates its efforts on identifying ‘effective’ schools, and drawing up lists of common features. Logically, according to the school effectiveness movement, the commonalities are the elements creating the success. There are weaknesses in this argument, not the least being the identification of ‘effective’ schools. Put bluntly, this movement sees ‘effectiveness’ in terms of examination scores and standardised test scores (Beare, Caldwell and Millikan, 1989, p.12; MacBeath, 1999, p.10). Other

‘surrogate’ indicators (Hamilton, 1998) such as class sizes, attendance figures and costs per pupil, are added in.

Where school improvement research has been underdeveloped the school effectiveness movement has burgeoned (MacBeath, 1999, p.9). School effectiveness lists have proved to be a useful tool, especially to governments, as they strive to rein in spending and increase efficiency. In the process, school effectiveness research has taken on an additional role as a school improver. Brady (2000, p.651) bemoans the search for expediency which has caused this expanded role: “In times of uncertainty, easy answers have great appeal. This is such an era, and well meaning politicians and policy makers are quick to supply them.”

This thesis on ‘good’ schools has not attempted to measure schools, rather it has gathered the perceptions of experienced practitioners and created some propositions about what some ‘good’ schools do. It has consistently emphasised three elements of schools that are strikingly characteristic, highly complex and seemingly ignored by effectiveness researchers. These characteristics are: the intertwining of the myriad properties of school life; the intangible nature of many of these properties; and the paradoxical potential of properties that effect schools most. Schools have been shown to be unique, flexible and constantly changing.

School effectiveness theory is unable to cope with the diverse characteristics of ‘good’ schools. It is a reductionist theory which eliminates characteristics which are not shared. That makes it bland and inflexible. It is based on the premise that ‘good’ schools are high academic achieving schools. That is

simplistic. It is promoting school improvement by backward mapping and coercion, neither of which work (Wilson, 1996, p.138). In the end, school effectiveness research is only considering things that can be seen and measured, and in defining them and measuring them is creating a template to which all schools must adhere. To do that is damaging.

This thesis strongly recommends that the assembled criteria emanating from school effectiveness research should not predominate in processes of school accountability and school improvement. Effectiveness criteria miss entirely the intangible elements that create the productive school community. They also fail to acknowledge the values, debate the beliefs or chart the vision. School effectiveness research doesn't recognise the strength of relationships or the child-centred quality of the teaching. It dismisses the fun and enjoyment and fails to reward the struggle with ambiguity and change. It tends to label uniqueness, a key property of schools, as aberration.

As a defacto stimulus for school improvement, effectiveness indicators are strong on coercion and almost devoid of encouragement. They preach simplicity in a system that is highly complex, and aggregation in an environment that is overlapping and interwoven. School improvement, as this 'good' schools study suggests, is more about developments within. It's about such verbs as 'engendering', 'coping', 'caring', 'meliorating' and 'promoting'. It's also about involving the people who matter most, the authentic school community.

Implications of the Research Findings for Policy Makers

This 'good' schools' thesis touched on many school policies, some of which are specifically Western Australian, but others which have national and international reverberations. Initially, in reference to educational policy, attention needs to be drawn to the image of organisational structure that principals perceive in relation to their own schools. This theorized school structure, encapsulated in the 'good schools puzzle' and analogized in the 'woven fabric', highlights the interdependence of every facet of school life. Each facet exists because something else exists. Many authors have written about this institutional feature (Ball, 1997; Rose, 1995; Wilson, 1996). Tibbitt *et al* (1994, p.152) describe this intermingling of elements and effects as 'nested' layers, explaining how classroom process are ultimately and distantly influenced by things happening outside the school. Barth (1990, p.149) proclaims the unpredictability of the intermingling by illuminating "the loosely coupled world of schools." Policy makers must not overlook this critical concept and must endeavour to predict the unexpected and widespread ramifications of any change they make.

The policy of national testing is an example of the 'knock-on' effect of policy changes. As has been discussed with the proposition outlined under the theme 'Producing the Goods', principals perceive no problems with being accountable. 'Good' schools are already incorporating all manner of survey and testing results into the annual school reports to their communities. As a compliance issue, schools are doing the tests when they are told and as they are told. Most 'good' schools are using the data to target whole school and individual weaknesses in numeracy and literacy. The 'knock-on' effect,

however, is seen in the classroom where national testing is conflicting with a new curriculum policy. The curriculum policy is promoting developmental learning and open ended questions, strategies that are not conducive to passing annual pencil-and-paper standardized tests.

National testing is sending mixed messages to schools. It condones age-appropriate academic testing whilst the philosophy of the *Curriculum Frameworks* (1998) urges individualized assessments through a wide variety of measurement techniques. Child-centred learning is being thwarted and frustrated by rigorous centralized accountability policies. National testing has undermined fundamental school values and beliefs especially in regards to self-worth and care, elements that are at the core of the ‘good’ school. The standardized tests are also driving a wedge between school staff, who appreciate the constructive philosophy of the *Frameworks*, and the parental community, who place faith in the simplicity and clarity of WALNA reports. Reputations, relationships, innovation, transparency, and perceptions of ‘goodness’ are all threatened by a national policy which was intended to be specifically targeted at efficiency and effectiveness. Brady (2000, p.649) recognises the stultifying effect of national tests by noting that “the standardistos are freezing in bureaucratic place the worst aspect of traditional education” (Brady, 2000, p.649). National testing policies are confusing teachers and upsetting the finely balanced dynamics of ‘good’ schools. These policies need to be examined and refined.

The new policy embedded in the 1999 Education Act (Education Department of Western Australia, 1999), which opens up schools to parent choice, is

another policy change which has ramifications throughout the school. Like national testing, there are political and economic motives for the introduction of this policy. In the case of school choice, this pseudo-privatization may produce some economies for the state government as children drift away from the poorly resourced or poorly performing schools. The policy of choice also encourages the 'politics of blame' (Thrupp, 1998, p.196) whereby schools shoulder all the responsibility for the quality of student achievement. This will produce 'failing' schools which the government could close. Marketization is a way of pressuring schools to improve and punishing those which don't or can't.

There is need to cultivate school improvement. Simplistically, choice and competition will stimulate changes, but there are associated problems. The schools used in this 'good' schools' study ranged from old established schools in high socio-economic inner city suburbs, to brand new schools in less favoured outer areas. Those schools in the outer suburbs of Perth had to work hard to build a reputation and attract their students and their staff. There is no doubt that this latter group of schools is serving their communities well but, with the policy of parent choice, their job is made harder. The problem is compounded by the fact that national testing favours the more fortunate schools. Thus, at Loisville Primary School, where the social reform agenda is the vision that drives the school, national testing and curriculum development are an enormous challenge.

Schools like Loisville are not competitive in national testing or the other attractive features that influence parent choice. Yet, this study has shown these

‘Loisvilles’ to be ‘good’ schools which are making substantial educational and societal contributions. Testing and choice are biased against the Louisville schools, favouring instead the academically inclined, affluent educational establishments. This inequity is also reflected in the enhanced opportunities for choice extended to better educated and more mobile families by virtue of their circumstances. Robson’s committee (2001, p.2) investigating government schooling, appreciated the marketization problem that many schools were facing by announcing that:

There is a real risk that government schools could become a residual system, to the detriment of social cohesion in Western Australia.

Standardised testing and school choice have the potential to become accepted measures of ‘good’ schools. Though this thesis portrayed principals’ beliefs that ‘good’ schools were learning communities with a firm set of values and a clear vision, the policies of testing and choice are sending different messages. Testing endorses schools where the majority of children can respond well to written assignments in numeracy and literacy. Parent choice endorses schools that suit the community’s generally conservative desires for academic excellence and firm discipline.

The policies of testing and choice appear to be reducing the breadth and flexibility of the school curriculum. They are also compromising educators’ desires to cater for the individual child. If these are the pressures defining ‘good’ schools we certainly have to ask the question – good for whom? It would seem to be the case that politics, economics and ill-informed elements of society might set the goals towards which all schools must aim.

In this area of goal chaos (Ball & Goldman, 1997, p.231) the legitimate purpose of schooling has become unclear. The seriousness of the position is well highlighted by Hamilton (2002, p.7) who, in an article in the Western Australian Department of Education's magazine *School Matters* addressed the issue of rethinking what schools should do. He cautions that "we are dangerously unclear about what the school's job is in relation to developing students' well-being, their attitudes and values and social development." In an era when society is changing and "health and behaviour problems among children have reached frightening levels" (The West Australian, 9 Nov, p.2) the social purpose of schools needs to be debated and defined. In particular, marketization and school choice, which Engel (2000, p.35) believes are "profoundly destructive of any attempt to build a coherent value system for young people in schools", must be subject to urgent critical review.

Less critical, less controversial, but also in need of review is the policy that dictates how teachers are appointed to a school. This research interviewed several principals granted the power to select teachers of their choice. For those principals the process for staff appointment was for the school to advertise vacant positions and their description, shortlist and interview successful applicants, then choose the most suitable appointees.

This system is termed merit-selection and the process ensures that the school obtains teachers suited to the school and to the nature of the task. All other schools not on this system receive Central Offices appointees who, though broadly matched to the qualifications of the vacancy, are seldom matched to the ethos of the school. Merit-selection is a relatively new policy for Western

Australian schools. It was introduced in 1997 (Education Department of Western Australia, 1996, p.4) as a trial in a limited number of schools (80-150), and has remained with that status ever since.

With the 'good' schools research finding that 'a shared ethos' is an important aspect of a successful school it would seem essential to extend this merit-selection facility much wider. Merit selection is a policy that would improve the staffing of all schools and it may well have a positive effect on the standard of teaching.

Implications of the Research Findings for Practice

So far the five propositions developed from this study of 'good' schools have been related to the areas of theory and policy. Though these areas should be of interest to administrators, and some teachers, there is a real need to bring the propositions into the day-to-day world of schools. To do this, the propositions will be applied to the fields of curriculum, teaching, management and leadership, and to pre-service and in-service teacher education.

Implications for Curriculum

A new *Curriculum Framework* was introduced into Western Australian schools in 1998. This document is well suited to the types of schools theorized by the principals in this study. Of most relevance are the sections of the *Framework* which concentrate on the 'good' schools' facets of values, beliefs, caring and community. Reference to these elements is made in the introductory Seven Key Principles, the 13 Overarching Statements, and the Articulation of Values. Of particular importance, in light of the current findings of concepts of 'good' schools, is the key principle entitled 'An Encompassing View of Curriculum'. The key principle mirrors the

interwovenness that is a feature of the perceptions of ‘good’ schools in this study, and describes the dimensions of curriculum as follows:

It encompasses the learning environment, teaching methods, the resources provided for learning, the systems of assessment, the school ethos and the ways in which the students and staff behave towards one another (Curriculum Framework, 1998, p.16).

Though ‘An Encompassing View of Curriculum’ provides the clearest echo of the principals’ voices, many other Framework Statements are aligned with the developed themes of this thesis. ‘Inclusivity’ (Key Principle, 3) treats child-centred learning by recognising the “different starting points, learning rates and previous experiences of individual students”. Collaboration and partnerships (Key Principle, 7) declares that “education is a shared responsibility of students, teachers, parents, tertiary educators and the community.” Inclusivity and collaboration are denotable aspects of the ‘good’ schools’ study. Relevant also is the reference in the Framework document to the ‘Core Values’, five in all, which are “woven through all aspects of the Framework” (Curriculum Framework, 1998, p.16).

Of the thirteen ‘Overarching Learning Outcomes’ in the Framework many deal with values, beliefs and the concept of community. Number 13, for instance, states that students should:

Recognise that everyone has the right to feel valued and safe, and, in this regard, understand their rights and obligations and behave responsibly (Curriculum Framework, 1998, p.19).

The *Framework* provides a valuable overview of phases of development in learning as a guide to developmental teaching practice, a key feature of teaching processes in ‘good’ schools. In addition the framework has a section

on assessment, the dimensions of which include a statement on ‘fairness’. This statement appears to refute standardised testing by advising that “assessments should be demonstrably fair to all students and not discriminate on grounds that are irrelevant to the achievement of the outcome” (Curriculum Framework, 1998, p.38). Developmental learning and fair assessment are issues promoted by the interviewed principals, but not reflected in the current government processes of choice and national tests.

Schools are faced with the ambiguity of a developmental child-based curriculum approach which sanctifies self-worth and inclusivity, whilst, at the same time being partially measured by national tests which are standardised, formalised and graded by age. Theobald and Mills (1995, p.465) term these sorts of standardised tests “a social Darwinist mechanism” in complete contrast to the liberalism of the new curriculum.

The implication for new curriculum from the ‘good’ schools research findings is that the *Framework* document is an invaluable tool in the process of establishing child-centred learning and in the creation of a democratic, collaborative and supportive environment in the school. In order to sustain ‘good’ schools as theorized through this study, the new curriculum must prevail.

Implications for Teaching

Central to the business of teaching, and strongly indicative of ‘good’ schools in the research sample, is school ethos. For the principals interviewed, there is no doubt that all staff must be aware of the dimensions of the ethos and must support it. Donnelly (2000, p.152), whilst admitting the difficulty of reaching

agreement as to the content of the ethos statement, notes that “the value of understanding a school’s ethos lies in the fact that it isolates the factors which are likely to foster school effectiveness.” ‘Good’ schools are woven around their core values and beliefs.

Unified acceptance of the ethos progresses to a unified acceptance of the school vision. It also transposes into the area of productive relationships and authentic teaching. Productive relationships rest heavily on collaboration and care. A school that has students, teachers and parents working together in a supportive manner, has a greater chance of producing quality teaching and learning.

Authentic teaching, highlighted in the current ‘good’ schools study, involves being true to the ethos and vision and being caring and honest with the children. It also means pursuing the goal of child-centred learning. An excellent model for ‘authentic’ teaching, in the mode perceived by the interviewees, is the *Curriculum Framework* (1998). This document targets development learning and inclusivity, the elements of a child-centred approach.

The findings of the ‘good’ schools’ research should provide encouragement for teachers to be fair and transparent with their accountability processes.

There is a need for parents to be seen as partners in the teaching, learning and reporting cycle, and a need that they be trained to understand outcomes and portfolios. Parents also need to understand about developmental learning so that they, like teachers, will not expect all children to proceed at the same rate.

On this Eisner (1991, p.17) suggests that “the genuinely good school does not diminish individual differences, it expands them.”

Finally, the findings of the ‘good’ schools’ study can alert teachers to the fact that schools are places of paradox and uncertainty. The classroom, in particular, is witness to conflicting demands and confusing policies. Decision-making in this environment is fraught with tension and frustration even for the best of teachers. Teachers need to know that some ambiguities, such as those involving political and economic constraints, are beyond their control. In cases such as these the school principal will act as ‘gatekeeper’ to deflect much of the potential ambiguity from the teaching and learning arena.

Implications for Leadership

This research project on principals’ concepts of ‘good’ schools should make a timorous starting point for a wide and robust debate on the topic; What is a ‘good’ school ... and good for whom? Debates on these topics are not being held amongst practitioners, perhaps because the questions are politically sensitive, but more likely because the topic is too anomalous. The irony of the ‘good’ school question is that though there is no definitive understanding or description of what a ‘good’ school is, and although such a school may only fleetingly exist, debating the conditions of its existence will make it more likely to appear. This thesis is testimony to the important things that educators have to say. If they say them more loudly and more often the reality of the ‘good’ school will be more assured.

Principals can not only talk about ‘good’ schools, they occupy the key position in developing them. This thesis, and its diagrammatic ‘good’ schools puzzle

will assist them with that task. Defined under the central theme of “Weaving the Fabric’ a ‘good’ school is seen as a texture of interlocking pieces or threads. It is this sense of an intricate, dense and multi-layered configuration that the principal must come to understand. A school is not an aggregation of random fragments each independent of the other, but a crafted tapestry. It has as its initial warps and wefts in its values and beliefs. The school principal must see this ethos as the beginning, with all else built on that.

This is a construction which must be led not managed. The principal must nurture the ethos and then enable the vision. These core threads are the principal’s responsibility though other contributors will play their part. To create a ‘good’ school the principal must be involved, plunging into an environment which provides the “mobile, complex, ad hoc, messy and fleeting qualities of lived experience” (Ball, 1995, p.259). The ‘good’ school assumes all the characteristics of a complicated but caring community. It is the principal’s role to hold this fraternity together.

This research into ‘good’ schools demonstrates that the principal must be able to cope with ambiguity. This ambiguity comes in many forms. The art of leadership includes operating in areas where there are no easy answers. The principal is custodian of the school culture in which ambiguity abounds. There are tension and uncertainty in the relationships between the parents, staff and children. There are the conflicting demands of policy and practice which require the principal to adopt a host of symbolic roles. A principal must become the gatekeeper to protect the staff and the arbitrator to decide what is most important. To align the school to its purpose, the principal must become

the visionary. As circumstances change, the principal becomes a change agent. This 'good' schools' research is telling the school principal that mechanistic management is nowhere near enough. Flexible, empathetic and imaginative leadership is the minimum required. 'Good' schools are places of innovation and action, demanding, as Davis suggests, the creativity and talents of an executive producer:

Principals who possess a strong grasp of their symbolic power also understand that the activities of the school are much like a theatre, complete with actors, a stage, a script and scenery (Davis, 1998, p.37).

Ultimately, the principal of a 'good' school must be accountable. If schools are to be authentic and transparent the responsibility for the school performance will be the principal's. There is a need for the principal to be well acquainted with the business of teaching and learning. It is essential that administrators know what is going on in classrooms.

Implications for Teacher Education

From the study into primary principals' conceptions of what constitutes a 'good' school issues arise that could benefit both trainee teachers and those teachers already practising in schools. Implications for pre-service and in-service training will be treated separately, though in practice the delivery of professional development in these two areas may overlap.

As ethos and vision appear to be central elements in the development of 'good' schools, trainee teachers should be exposed to examples of these. Practitioners could present this material during school practicums and university courses could include opportunities for personal ethos and goal setting activities. Trainee teachers need to appreciate that personal ethos and

school ethos are not necessarily the same, and tension between them can be quite destructive (Donnelly, 2000, p.137).

Importance should be placed on skills in interpersonal relationships which are critical for integration of the whole school community. The areas of adult interaction are integral parts of collaborative and supportive relationships in a school. Specific training is needed to cope with difficult parents. This is all part of creating a symbiotic partnership with the wider school community.

Trainee teachers would benefit from an introduction to pastoral care activities for children. 'Good' schools are perceived to be strong in this area and there is a wide range of courses available for all ages of children. Beginning teachers need to understand that no 'real' teaching can begin until the children feel a sense of 'belonging'.

Finally, for teachers about to go into their first school, there needs to be training in applying for positions through the merit-selection process. 'Good' schools select staff who can contribute to, or support the school ethos, and who can collaborate with and support one another. There is a suggestion, strongly endorsed by this study, that many more schools be given authority to choose their own staff. Trainee teachers need the skills to recognise their own strengths, evaluate the needs of schools of their choice, and prepare applications that will win them the opportunity for interview.

The implications of the 'good' schools' research for the education of teachers currently in schools, are also significant. There are good reasons for this.

Current teachers have often become set in their ways, tending to be inflexible.

In addition, serving teachers are facing difficulties converting from the traditional input curriculum to the modern outcomes approach. Some teachers indeed, have become 'blockers' to change.

This research project aligns itself with the *Curriculum Framework* (1998) because the *Framework* appears to promote many of the elements that principals believe constitute a 'good' school. Teacher in-service education on the *Framework* must continue and should concentrate on the philosophy behind the document. New processes for the eight curriculum outcome areas can wait. The priority is for teaching and learning to become inclusive, developmental and child-centred. This should be part of the ethos and vision of all schools and all teachers.

Established teachers need to ensure that threads of the 'values' curriculum entwine all their classroom and school activities. The 'good' schools appear to be the ones that are prepared to establish their ethos and community before they concentrate on learning in other areas. Hamilton (2002, p.7) looks at the evidence of what predicts success in life, and discovers two capabilities:

The ability to manage yourself (to be self-disciplined, know your strengths and be able to manage your feelings), and how skilled you are with people (communicating well with others, being able to empathise with others, being able to influence others).

These values and social capabilities lead into the areas of care and self-esteem, both of which are perceived to be 'good' school characteristics. Teachers need to be knowledgeable and skilled in these domains.

Lastly, established teachers need to be encouraged to rediscover the rewards of innovative and productive teaching. They will benefit from courses that will

assist them to be positive and collaborative. It is their attitude that will define the quality of teaching and learning and influence the reputation of the school.

As Reynolds (1999, p.13) puts it:

Teaching is the central activity that teachers engage in. How teachers behave in their classrooms is the most important factor determining the educational standards of pupils.

Though this thesis has revealed great complexity in the fabric of the school, it remains a simple fact that ‘good’ schools restlessly pursue quality teaching and learning.

Implications of the Research Findings for Further Research

This research into ‘Western Australian Government primary school principals’ conceptions of what constitutes a ‘good’ school’ has been timely. It has reinstated the word ‘good’ into a debate that appears to have become dominated by terms such as ‘efficiency’, ‘effectiveness’, ‘outcomes’ and ‘value for money’ (Woods and Jeffrey, 1998). Using the word ‘good’ has hopefully dragged us way from the neat logic of ‘effectiveness’ and plunged us into the messy issues of what learning is, and for whom it is structured. The focus on ‘good’ may also have generated further questions that need to be pursued.

It would be valuable to compare the principal’s conceptions of a ‘good’ school with those of the teachers. There is a suggestion by some that staff may see things differently (Hoy *et al*, 1990, p.276), although this current study would contend that the views of the principal and the teachers should be the same.

Community conceptions of ‘good’ schools would also contribute valuable data especially at a time when the perceived involvement of parents in schools has never been stronger. On a local basis it would be important to compare the

parents' ideas with those of the relevant school. It would also be of interest to survey parents on a wider and more representative scale. Perhaps comparisons could be made in geographical or socio-economic regions, or between variously structured families.

Important, too, is research into leadership styles with respect to the development of 'good' schools. Of the fifteen principals interviewed in the current study, some categories of leadership have already been created by the researcher. The tentative labels were – innovators, active pragmatists, philosophers, quiet professionals, freshmen and elder statesmen. Though these categories were used for structural organisation of this thesis they may stimulate ideas for further research.

There may also be some scope for pursuing research along the lines of the challenging works of Ball (1997) and Rose (1995). Ball suggested that there are 'good' and 'bad' in all schools, a paradox/ambiguity issue that is a feature of this current study of 'good' schools. Rose found inspirational goodness amidst a school system reputedly in decline. The transitory and paradoxical nature of 'good' schools, and their tendency to wax and wane, provide fertile ground for more investigation.

Finally, there are many peripheral arguments and discussion points associated with 'good' schools, at least in the Western Australian context. These include the challenges of privatisation, marketization, accountability, parent choice, values education, school reputations and the extremely sensitive issue of equity.

Conclusion

The findings of this study provide an insight into the conceptions of ‘good’ schools held by fifteen government primary school principals in Western Australia. These conceptions, when analysed, created five propositions about perceived ‘good’ schools. The five propositions are centred on the themes of ‘Weaving the Fabric’ which stressed ethos and community; ‘Walking the Talk’ which dealt with leadership and relationships; ‘Producing the Goods’ which highlighted accountability; ‘Leading and Lagging’ which discussed responsibility for change; and ‘Seeing is Believing’ which introduced school reputation and its associated complexities. Though ‘Weaving the Fabric’ is posited as the nucleus in the creation of a ‘good’ school, all propositions are seen to intertwine, and each proposition is linked to the school’s core business of quality teaching and learning. While these propositions are generalisable only to those situations that gave rise to the specific circumstances which were the focus of this study, they have implications for the theoretical literature and practical applications to school effectiveness and school improvement research. There are implications also for the areas of policy, curriculum, leadership, teaching and teacher education.

In the course of this research, questions were raised about the impact of school restructuring and the accompanying philosophies of marketization, privatisation and accountability. Endeavours to create schools that would benefit national competitiveness posed the question – ‘good’ schools for whom? This research, which highlighted the importance of ethos, vision, community and care, perceives that schools are more about the intangible

values of human interaction than the palpable statistics of production and profit.