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**Identifying and analysing processes in NSW public schooling
producing outstanding educational outcomes to assist national
renewal in junior secondary school education**

Introducing *ÆSOP*: An Overview of the Project

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This paper reports on the background, aims, structure and expected outcomes of an ARC –SPIRT grant referred to as *ÆSOP* (An Exceptional Schooling Outcomes Project). This project is a joint initiative of the University of New England, the University of Western Sydney, and the Strategic Research Directorate of the NSW Department of Education and Training. Funding for the project is from the NSW Department of Education and Training and the Australian Research Council's Strategic Partnerships with Industry – Research and Training Scheme (SPIRT). The organisational base for the project is the Centre for Cognition Research in Learning and Teaching (CRiLT), at the University of New England. The project has the potential to make a seminal contribution to the national renewal of Years 7 – 10 schooling.

Background

How to improve educational outcomes in schools is an enduring concern in most national and international education systems. Reasons for school inspection systems (e.g., as carried out by OFSTED in England), adoption of common curriculum and examination routines, and various quality assurance mechanisms all have as their basis attempts to quantify or qualify significant aspects of schooling. Nevertheless, obtaining information that is fair, unambiguous and which can be easily understood has not always proved feasible. Measures, such as school-average performance or the use of 'league tables' which rank schools, have drawn extensive criticisms in the media, and from academics and parents. The results are not only seen as potentially destructive as measures of school performance, but they often provide no mechanism for schools to improve their performance. Recent

advances that do not carry the necessary negativity associated with some past practices, while recognising the sensitivities of such research, do offer some important ways forward.

At the heart of these new approaches is the clarification of what is meant by achieving outstanding learning outcomes while taking into account social, cultural and other sociological issues. The work in this area and in seeking out the differences between schools remains, however, a sensitive and often controversial area of education research and policy. If done without understanding of the implications of the measures being employed, the results can be highly misleading and harmful conclusions can be drawn. If undertaken within an environment that is, or is perceived to be, punitive, inquisitorial (as, for example, is often asserted by British teachers and researchers about the OFSTED processes) or 'inspectorial', attempts to identify outstanding learning outcomes can, ironically, be counterproductive. Alternatively, when handled with care and within a context of identifying and celebrating educational excellence, the information provided can be educationally defensible and provide the catalyst for positive changes in the learning environment for students. This latter approach is designed to be the basis of this project.

In addition, there is growing concern across Australia that the public school system is increasingly facing major challenges: indeed, in some contexts it faces the risk of becoming 'residualised.' State Governments around Australia are responding to these challenges in a number of ways. One major contemporary challenge for governments is the revision and renewal of public schooling. In particular, the needs and capacities of *junior* secondary education in Australia have for too long lingered in the queue of school reform.

It is often alleged that junior secondary schooling is the 'black hole' of school education in Australia. In most State and Territory systems there have been significant developments in *post-compulsory* schooling – in both curricular and structural change. Great attention has been placed on *primary* schooling – especially concerning literacy and numeracy in the 'early childhood' years. Some interesting innovation has been undertaken linking the late primary/early secondary 'divide' in '*middleschooling*' initiatives: but the 'black hole' between primary school and Years 11-12 has been only sporadically the subject of any close scrutiny.

While student achievement across the wide range of educational objectives is related to all sorts of teaching, learning, psychological, social and economic variables, it is not unreasonable to hypothesise that outstanding schools, subject departments or groupings of teachers focusing on targetted programs are probably deploying outstanding educational processes. No doubt, these are occurring in a number of different ways within a wide range of varying contexts. There are clear advantages in identifying and understanding the knowledge, skills, understandings and professional values or attitudes being exercised within the school, with the aim of finding authentic ways in which they may be transferable to other Years 7-10 schooling contexts. It would then be possible to devise professional development principles, processes and programs that would assist all schools to achieve better educational outcomes for students.

Aims of the Project

The renewal of junior secondary schooling is a significant goal of Australian and international education systems. This project adopts this aim by using the wealth of quantitative and qualitative data in one of the world's largest school systems. In particular, this project seeks to identify and analyse those junior secondary 'schooling' processes that generate outstanding educational outcomes in metropolitan, rural, and isolated NSW public schools, including 'central' schools (which are common in rural and regional NSW). Having identified these 'special' sites and, allowing for contextual differences and variations, the processes leading to these outcomes will be analysed to develop means whereby the research findings

can be applied more broadly to Years 7-10 schooling not merely within NSW but nationally and even internationally.

The Collaborative Partnership undertaking this Project

The project involves the Strategic Research Directorate of the NSW Department of Education and Training (the Department) as well as significant contributions from other Directorates within the Department, the University of New England (UNE) and the University of Western Sydney (UWS). The Department is responsible for the public education provision in NSW. It is the largest systemic provider of secondary education in Australia: indeed, it is one of the largest in the English-speaking world. It provides, therefore, a richly diverse and comprehensive field of research to identify outstanding manifestations of quality schooling in the junior secondary arena. The Department has access to two rich and comprehensive sources of data. Its quantitative databases, which include student outcomes data in primary Basic Skills Tests in numeracy and literacy and Year 10 reference tests in English-literacy, Mathematics and Science. Its qualitative base involves: the 'local knowledge' of what is happening in schools held by District Superintendents and Chief Education Officers (CEOs) servicing the Department's 40 districts; the annual reports submitted by school Principals summarising the achievements of their schools; and the 'grassroots' information provided by individual Principals, school executive leaders, heads of subject departments and other within-school staff groupings, and classroom teachers. The Strategic Research Directorate is a small but highly experienced team of researchers (the Director and all senior staff have doctorates).

UNE and UWS are two Australian universities that have a special commitment to rural, regional and remote Australia. They have impressive records of research related to practical classroom concerns at a 'grass roots' level: collaboratively, their partnership enables this research project to concentrate on metropolitan, rural, and remote junior secondary schooling contexts. Perhaps, even more importantly, significant researchers from both institutions have built up over the years an enviable credibility with Principals, executive leaders, heads of department, and classroom teachers. This credibility will ensure that 'real' educational outcomes will be identified in the research.

Literature Review

In framing the research program, the findings from the research literature helped guide the focus and design. For example, there is a strong body of research that highlights the importance of the roles played by the school Principal at one end of the spectrum and the individual classroom teacher at the other, in advancing the quality of students' educational outcomes as they proceed through school. However, there is comparatively little research on the significance of the roles played by *subject departments and other groupings of teachers*. Given the particularly significant role played by these middle managers in NSW public education, this influential group of teachers enjoy a particular focus in this project.

The principal focus of this research is on those processes operating within schools in general, but particularly within subject-departments, that appear influential in the achievement of outstanding educational outcomes. Previous research has mainly addressed school effectiveness and teacher effectiveness – that is, the *school* and the *teacher*, respectively, as agents of effectiveness. Such research is not ignored or overlooked in this project.

Subject-Departments as a Focus for Inquiry

As Goodson and Marsh (1996, p.54) observed: "The subject department provides the most common organizational vehicle for school subject knowledge, certainly in secondary schools, but unlike 'the curriculum' it has not been widely researched or much noted in our studies of schools." Life and learning in secondary schools are commonly organised in terms of subject matter; the school-subject remains the preferred focus of teaching and learning and the preferred form of curriculum realisation (Siskin, 1994; Siskin & Little [eds], 1995). Important research was initiated in this regard by Stodolsky and Grossman (1995, 2000), and Grossman and Stodolsky (1995). They argued for the importance of a "comparative approach toward understanding subject-matter *differences* among secondary school teachers" (Grossman & Stodolsky, 1995, p.5). They wrote that due attention needs to be addressed to "... school subjects as specific contexts within which secondary teachers teach" (Grossman & Stodolsky, 1995, p.5). Bennett (1999, p.289) pointed to the increasing recognition in "school effectiveness and school improvement research" of the need to take into account different levels of schools organisation and practice, and "a resurgence of interest in sub-units of schools", including subject-departments and their forms of organisation and leadership. This is supported by Busher and Harris (1999), in their review of subject-areas, school leadership and educational change.

Research evidence concerned with school improvement emphasises the importance of focusing on efforts to change practices at different levels within an organization. The largest study of differential school effectiveness in the UK highlighted the importance of differences between departments in explaining differences in school performance (Busher & Harris, 1999; Sammons et al., 1997). As Hannay & Ross (1999, p.346) concluded, "we need far more research on the micro-processes involved in secondary schools."

The research proposed here will contribute in these various regards, both in being the first systematic work of this kind in Australia and, in terms of the scale at issue, in looking at junior secondary education across NSW.

Finally, it should also be noted that in there was a recent NSW study that focused on effective teachers at the HSC (Higher School Certificate) level. The representative teachers identified as particularly effective in their practice were chosen by "identifying a number of subject departments in which students had, over a period of time, demonstrated significant ... success in a particular HSC course" (Ayres, Dinham, & Sawyer, 1998). Accordingly, the 'subject faculty' was one among seven factors identified as "contributing to HSC teaching success" – and well worth further investigation. This same research argued that one of the most important aspects of effective teachers was their subject-orientation.

The teachers in that study, who were genuinely expert in their subject area, felt that subject expertise was extremely important and they enjoyed their teaching of, and association with, their subject. While this research revealed much commonality amongst the teachers across the curriculum, it also revealed some important differences in subject-based methodologies. This finding was particularly manifested through certain methodologies being more prominent in particular subject areas and through teachers in different subject areas attaching different meanings to certain strategies.

Other Significant Variables

As noted earlier, this focus on subject departments and other significant grouping within schools does not in any way deny the importance of individual teachers or executive leaders, especially school Principals. The concentration here, rather, is on the ways in which all such individual factors are harnessed or channelled through a school's explicit and/or

implicit infra-structural processes, to produce the outstanding educational outcomes identified in the first stage of the project.

Also of significance is the consideration of 'external' variables in influencing exceptional outcomes. These variables include factors that can play a role in maximising educational opportunities and outcomes for students. Examples of these include: socio-economic factors and issues related to particular groups of students such as students with low or high academic aptitude; gender differences; students from particular NESB backgrounds; students in isolated and rural areas, and students from outer metropolitan areas. The interaction of these issues is to be addressed using a variety of quantitative and qualitative methods.

Other Relevant Theoretical Perspectives

Effective Teaching

As indicated above, the Project builds directly on previous research on successful teaching in the NSW Higher School Certificate (Ayres, Dinham, & Sawyer, 1998). As that study indicated, there is now a substantial body of research literature on effective schools and effective teaching. Owens (1998, pp.92-96) and Sammons et al. (1995, pp.8-25) provided a useful overview of effective schools research which highlights such issues as the importance of strong leadership by the Principal (Beare, Caldwell, & Millikan, 1989; Caldwell & Spinks, 1988, 1991; Dimmock, 1993; Dinham, Cairney, Craigie, & Wilson, 1995); high expectations for student achievement from staff; an emphasis on basic skills; an orderly environment; frequent and systematic evaluation of students; increased time on teaching and learning tasks; shared vision and goals; purposeful teaching; positive reinforcement; pupil rights and responsibilities.

That study also pointed to significant limitations of some school effectiveness research. For example, in a major review of such research, Sammons, Hillman and Mortimore (1995) drew attention to "the limitations of existing school effectiveness research, particularly the weak theoretical basis ... and the fact that the number of empirical studies which focus directly on the characteristics of effective schools is exceeded by the number of reviews of the area" (p.1). The authors also noted the danger of interpreting findings of studies that have utilised small numbers of particular kinds of schools, e.g., large disadvantaged urban schools (p.1). They also noted (pp.2-3) the problem of the difficulty of uncritically applying what is known about 'good' schools more widely to all schools in general. It is one thing to note the characteristics of apparently effective schools: but it is difficult to discover precisely how such schools came to be in their current state. It is even more difficult to increase the effectiveness of other schools merely by uncritically extrapolating these understandings in a general way that takes insufficient account of specific contextual factors.

A review of the literature also makes one aware of the danger of not proceeding beyond the collection of merely 'thin' data regarding school processes (i.e., school size, pupil-teacher ratios, racial balance, qualifications of staff), when attempting to explain why some schools perform better than others. This research project is designed to go well beyond reliance on such necessary – but not sufficient – data in seeking what may well prove to be complex answers to the apparently simple three research questions posed initially by the project team.

Sammons et al. (1995, p.4) also noted that there have been too few studies that have looked at identifying and investigating the *social* outcomes of effective schooling (e.g., attendance, attitudes, behaviour), in addition to the more well-trodden research paths of identifying and investigating *cognitive* educational outcomes (e.g., student performance in basic skills). In

some recent Australian research on school effectiveness, which expressly took into account differing emphases in the North American and Australian work to date, it was also emphasised that a focus on 'intellectual' or 'academic' outcomes needed to be explicitly complemented by attention to 'social' outcomes (SLRS, 1999). Hence, a four-dimensional model of desirable classroom practice was generated, in terms of "intellectual quality," "relevance," "social support" and "recognition of difference" (Ailwood et al., 2000). This model is likely to prove useful for the research proposed here, especially given the strong emphasis in NSW education on school subjects and Key Learning Areas.

Students as a Focus of Inquiry

Educators and others are becoming increasingly aware of the issue of adolescence. Primarily there are concerns about a growing sense of adolescent 'alienation' from young people towards the broader society, as well as schooling. It is within the Years 7-10 schooling phase that much of the turbulence, alienation, search for personal identity, creative and dysfunctional tensions that can be associated with puberty, and realignment of personal goals within shifting contexts, find both a focus and a crucible.

Something to be further noted here, however, is that there would appear to be little attention given in research to date to *students'* perspectives and experience, in negotiating the demands of high schools and in particular their characteristic realisation in terms of school-subject structures and cultures. An important feature of the research is a deliberate focus on the student standpoint in addition to attending to more commonly understood issues and perspectives of curriculum and administration. How do students in Years 7-10 understand and experience high school in NSW, especially given its dominant focus on subject areas and KLAs? How does this focus intersect with cross-curricular school programs (e.g., literacy, IT, welfare, indigenous education, citizenship, etc) and extra-curricular activities, such as sport and the Rock Eisteddfod? Furthermore, and crucially, if curriculum is to be understood as involving both knowledge *and* identity: how does the school curriculum on offer to junior secondary students contribute to or constrain their lives and identity-projects, in their individual and collective efforts in "becoming somebody" (Wexler, 1992)?

Some recent research on school subjects and their characteristic cultures and structures directly addressed the interface between 'subject matter' and 'student diversity,' in ways that have an immediate bearing on the research proposed here (Stodolsky & Grossman, 2000). The challenge becomes one of accommodating a diverse and changing student population, specifically in the institutional context of the junior secondary school, and a continuing emphasis on subject-disciplinary forms of school knowledge, including their associated forms of organisation and management. As Stodolsky and Grossman (2000, p.167) observed: "preparing teachers to teach academic content to more diverse learners will require a broader vision that encompasses not only knowledge of diverse learners themselves, but beliefs and knowledge about [both] subject matter and students." Investigating how programs such as student welfare, indigenous education, literacy and citizenship articulate with the KLA structure in such contexts, *particularly from the point of view of diverse learners and students* becomes, accordingly, a matter of some imperative.

Middle schooling

This project is, moreover, entirely consistent with the literature on *middle schooling* – in itself, an important resource for the proposed research (Cormack, 1998; Cumming, 1994; Cumming & Cormack, 1996; Fitzclarence, Green, & Bigum, 1994; Hargreaves & Earle, 1990).). It needs to be noted, however, that within the Australian context, the term 'middle schooling' has usually been used to describe linkage between the final two years of primary schooling and the first two years of secondary schooling: e.g., in NSW, Years 5 – 8. Trevor

Wootten, Executive Director, Secondary Education in the NSW DET, has been at the forefront of developing policy on middle schooling. Among the findings of the ACSA study (Cumming & Cormack, 1996) were calls for a focus on 'team teaching' and an 'holistic approach' to schooling, as well as 'student participation' and 'pastoral care.' As research has consistently indicated, this is difficult to achieve in more conventional secondary school and curriculum structures, characterised as they are by strong 'classification' (Bernstein, 1971). As Ayres, Dinham, and Sawyer (1998) pointed out, "the majority of research into effective schools has been carried out in a primary or elementary school context (e.g., Doyle in Kyle (ed), 1985)." Moreover, there is a need to "consider the issue of whether high schools are more resistant to change than elementary schools," noting further that "research has tended to support this, although the apparent rigidities of high schools have not been adequately explained." It seems likely, therefore, that this literature on middle schooling has much to contribute in the analysis of junior high school structures and cultures, attempting as it does to bridge primary and secondary sectors of schooling.

Research Questions

This project asks three questions:

- How and where can we identify junior secondary schooling which is really 'humming', i.e., in which outstanding educational outcomes are being achieved?
- How can we identify the simple or complex reasons why this is occurring in these schools?
- What transferable value can be subsequently adopted by, or adapted to, junior secondary education generally, allowing for contextual variables, through professional development of school personnel?

The Hypothesis Being Tested

The members of the research team are firm in their determination not to pre-empt the outcomes of the research by the imposition of too rigidly constructed hypothesised grids or frameworks. But the team has based the project on a working hypothesis that the contribution made by particular structural units within a school, notably, for example, subject departments and groupings of teachers focusing on targeted programs, make a greater contribution to effective schooling than has hitherto been acknowledged in research.

Research Methodology

To consider the research questions and explore the hypothesis concerning the significance of subject departments and other significant structures within the school, the research is divided into three phases, representing each year of the project. The purpose of this three-pronged diagnosis is to identify those schools that appear to be achieving outstanding educational outcomes within Years 7-10, as the basis for selecting a sample of at least 30 schools and/or departments or sub-structural units within schools, for specific focus.

In overview, the first year is being spent on accumulating and analysing the quantitative and qualitative data on the 458 secondary and central schools in NSW, and the preparation, administration and analysis of a survey to all these schools. The second year will involve intensive research within the schools selected, focusing, as appropriate, on the whole school, the subject departments, the delivery of specific programs, or contributions made by significant individuals. As a result of these findings, the third year will focus on the development and trialling of professional development principles, processes, and programs designed to assist all schools to improve the quality of Years 7-10 schooling provision by enriching the teaching and learning environment for both students and teachers.

Phase 1 – Establishing examples of outstanding educational outcomes

The significant quantitative data bases held by the Department are being used to identify schools or groups within schools which can be considered to be achieving outstanding educational outcomes. A number of key staff personnel who have major responsibility for education provision in NSW will be interviewed. In particular, the 40 CEOs across the State are contributing to the qualitative data base thereby built up. The resulting data is being cross-tabulated to identify significant similarities and differences among the groups.

Also during this stage a survey was sent to all government schools and district offices in NSW. The survey forms were sent also to different stakeholder groups, including School Principals and Deputy Principals, head subject teachers, classroom teachers, and administrative district superintendents. The information from these is currently being analysed. Finally, four pilot studies have been undertaken to familiarise the project team with the procedures to be employed in the main study, and to refine the research instruments and data collection and analysis procedures.

Phase 1 will culminate with an interim report that records the decisions made about the conceptual framework and provides an overview of the survey data. Also identified will be additional specific questions that have emerged as being of interest and to be pursued during Phase 2.

Phase 2 – Case Studies

This phase will focus essentially upon building upon the achievements of Phase 1. It will comprise case-studies in a sample of at least 30 carefully chosen sites in an effort to answer specific research questions requiring sustained dialogue (involving school Principals, executive leaders, teachers and students) and observation of practices. The main software analytical tool in Phase 2 will be NUD*IST. Some interfacing of qualitative data with the statistical information obtained in Phase 1 but more directly applicable to the particular sites used will also be undertaken.

Phase 2 will conclude with a second Interim Report that combines the data analysis of Phase 1 with the case-study data to provide an enhanced set of answers to the research questions.

Phase 3 – Reporting and Development

Phase 3 will be devoted to further, more detailed analysis of the data, including hypothesising/theorising relationships among them and the compilation of the conclusions in a final report. In addition, this phase will go beyond the mere reporting of the research findings by exploring their implications for practice. This will include workshops/seminars with respondents and other selected practitioners and students aimed at deriving practical strategies for disseminating the new knowledge and facilitating curriculum change that will extend the achievement of 'outstanding outcomes' across more schools in the state. Video, digital and print materials will be developed and piloted, using DET resources, and used in professional development programs designed to facilitate adaptation and application of the research findings to the wider state, national, and potentially, international contexts.

Timetable

During Year 1

- Identify DET *quantitative* data-bases and prepare for data analysis (including Basic Skills Test data and, School Certificate data on English-literacy, Mathematics and Science)
- Identify DET *qualitative* data-bases and prepare for analysis (including advice from District Superintendents and CEOs, School reports, and School Principals, executive and classroom teachers)
- Identify socio-economic information and prepare for analysis
- Design, pilot and administer survey instrument, analyse data
- Combine data from above sources to identify target schools and subject departments for case-studies in Year 2, negotiate access and protocols for those studies.
- Undertake four pilot studies.
- Year 1 report prepared and distributed

During Year 2

- Year-long and short-period case-study sites confirmed
- Research teams established for the case studies and conceptual framework developed
- Fine-grained analysis of qualitative data-bases for case-study groups identified and analysed
- Video preparation of teachers working with their classes and in interview situations
- Year 2 report prepared and submitted

During Year 3

- A major synthesis of data-base and case-study data leading to specific findings about the development of outstanding educational outcomes
- The preparation of materials and programs of professional development, their piloting and refinement.
- The piloting and refining of aspects of the program of professional development
- Submission of final report, including the refined program of professional development activities.

During Years 1 to 3 there will be three two-day meetings with target groups of CEOs at the beginning of each year to inform them of the progress of the project and to elicit their support on particular activities. They will be an important element in the interface between schools in their district and the project team.

Industry Partner's Contribution

The Strategic Research Directorate of the NSW Department of Education and Training is making a substantial contribution to this project: it will provide \$210,000 in cash for the three-year project. In addition, \$384,990 of in-kind support will be provided by Directors and senior offices within seven of the Department's Directorates: bringing the Industry Partner's total contribution to \$594,990. The specific nature and details of the Industry Partner's contribution may be briefly summarised as follows: detailed analysis of sophisticated and

comprehensive student-outcomes data bases across a range of quantitative educational performance indicators; deployment of 40 Chief Education Officers across all NSW DET Districts to work with researchers and school Principals, executive leaders and classroom teachers in identifying and analysing qualitative data; professional development of 'grassroots' personnel engaged in the research as well as the construction, piloting, and dissemination of professional development programs and multi-media resources based on the 'best practice' outcomes of the research; and collaborative research and managerial oversight of the whole research project by the Director of Strategic Research, in partnership with the academic consortium.

Expected Outcomes of the Project

There are several anticipated outcomes corresponding to the different stages of the project. The first phase of the project will culminate in the identification of a sample of at least 30 schools across NSW, within which outstanding educational outcomes for Year 7-10 students are being achieved in a variety of fields and across a range of socio-economic and geographical contexts. The second stage will result in the identification of those processes that are occurring at the classroom, and/or subject department, and/or groupings of teachers focusing on targetted programs, and/or whole school levels which are contributing to these outcomes. The final stage will culminate in the development of a range of professional development principles, processes, programs and materials designed to promote the introduction and use of these processes amongst the wider educational community both inside and outside of NSW.

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