

‘Not just another face in the crowd’

Report from SiMERR New South Wales

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INTRODUCTION

More than 6.7 million people, or one third of all Australians, live in New South Wales. Of these, about 75% live in the 2.5% of the state referred to as the Greater Metropolitan Region (GMR), comprising Sydney, the Illawarra and Lower Hunter regions (Department of the Environment and Conservation, 2003). The rest of the population live on the coastal strips outside the GMR (10%), and in the regional and rural areas of inland NSW (15%).

The SiMERR NSW team visited four schools located in these regional and rural areas, interviewing teachers, parents and students about their perceptions of science, ICT and mathematics education. This chapter presents and discusses the results of these interviews, providing detailed and contextualised insights into what these groups identified as key issues affecting educational outcomes in the three subject areas.

The chapter begins with a description of the schools, their communities and contexts. The three subsequent sections present and discuss the responses of teachers, students and parents to the interview questions. The final section presents a summary of the findings, along with the SiMERR NSW team’s reflections on those findings.

THE SCHOOLS

The four schools present a cross-section of those in rural and regional NSW. While not necessarily representative of all schools in these areas, each was nevertheless typical of one common type of school. Willow Central¹¹, St. Peter’s Primary and Rainforest High are among the 77% of non-metropolitan schools located in Provincial Areas of NSW. St. Theresa’s College was chosen both as an example of the 18% of non-metropolitan schools located in Provincial Cities, and also to contribute the perspective of students, teachers and parents associated with a single-sex rural school. A Remote Area school was also approached and agreed to participate, but unfortunately the SiMERR team was unable to take up this

¹¹ All names are pseudonyms

opportunity due to difficulties with timing and logistics. Remote Area schools make up 5% of all non-metropolitan schools in NSW.

Two of the schools, Willow Central and Rainforest High, are located in the northern hinterland of NSW. St. Theresa's College and St. Peter's are in central and central western NSW respectively. Table 10 outlines the relevant characteristics of the four school schools.

Table 10. Schools and focus group participants

School	Type	Students	System	MSGLC Category
Willow Central	Central (K-12)	Coed.	Government	2.2.1 Inner Provincial Area
St. Peter's Primary	Primary (K-6)	Coed.	Catholic systemic	2.2.1 Inner Provincial Area
Rainforest High	Secondary (7-12)	Coed.	Government	2.2.2 Outer Provincial Area
St. Theresa's College	Secondary (7-12)	Girls only	Catholic systemic	2.1.1 Provincial City

Willow Central School

Willow is a small, isolated rural town about 110 kilometres on winding roads from the nearest large centre, a regional city with a population of 23000. The town is surrounded by picturesque farmland, extensive tracts of forest and towering rainforest and spectacular mountains. The population of the Willow locality is about 1000. The town was once a centre for dairy, beef and timber industries. Since de-regulation of those industries, however, many dairy farms have been abandoned and there remains only a small-scale timber operation in town. Consequently, the socio-economic profile of the town is relatively low. The school is a modern, mainly brick construction, with an enrolment of 233 students from Kindergarten to Year 12.

St. Peter's Primary School

St. Peter's Primary School is located in Plains, an historic rural town with a population of approximately 2000 people about 50 kilometres from the nearest large centre, a regional city with a population of 36000. It is located in a rich agricultural shire which produces fine wool, wheat, grapes and fruit, beef cattle and fat lambs. St. Peter's Primary School is a Catholic systemic school for students from Kindergarten to Year 6 with an enrolment of 76. The school is located on a hill overlooking the town. In addition to St. Peter's Plains also has a government central school catering for students from Kindergarten to Year 12.

Rainforest High School

Rainforest is a rural town with a population of approximately 3000 nearly 45 kilometres from the nearest large centre. It is close to World Heritage listed national parks and its economy is based on primary industries including beef, dairy and timber. Like Willow, de-regulation of those industries has had a serious effect on the town and the recent loss of the major industry, a timber mill, means that unemployment rates for the town are very high. Rainforest has government primary and high schools and a Catholic primary school. Rainforest High School has an enrolment of 499. It is centrally located beside a river on the main street in the town.

Students from Years 7 to 12 attend the school, consisting of several two-storey brick buildings.

St. Theresa's College

St. Theresa's College is located in Barton, a regional city with a population of approximately 30000. Barton has a wealth of education facilities, including a university campus, an institute of Technical and Further Education (TAFE), a Conservatorium of Music, government and non-government primary and secondary schools including several secondary boarding colleges. Educational facilities are the largest employer in the city but, in addition to being a service centre for primary industries, there are also several large manufacturing industries located in the city. St. Theresa's College is a Catholic systemic girls high school with an enrolment of 620. It is located a few kilometres from the central business district and is surrounded by extensive playing fields.

TEACHER PERSPECTIVES

Most of the teachers interviewed have lived in the local areas for an extended period of time, typically eight to 20 years. Some were born or had grown up in the area, others had moved there from metropolitan centres. Even though the majority live within their school's district, many of them live in larger centres, smaller villages and on rural properties some distance from the town or village where their school is situated. Nevertheless, 'I still feel a part of the community,' reported a teacher from Willow Central School. It is not uncommon for teachers to drive 20 to 50 kilometres to school, taking from 15 to 45 minutes depending on road conditions.

Reasons for teaching in a rural/regional school

The main reason for initially working in the region was availability of employment. Margaret, a teacher at St. Peter's Primary School 'came up here on a maternity leave position for a year' while Philip, at St. Theresa's College, 'came for a promotion'.

Others, such as Bridget at St. Peter's Primary School, followed their hearts: 'My husband secured a job here so we moved for his work.' A number of the female teachers married local farmers. Incentives to stay in the area then followed through buying a property or going into a business with their partners.

Commitment to staying in the area was strengthened through family ties, either because of parents or in-laws or because the teachers had started families of their own. A teacher from Willow Central School explained: 'I've got two little kids and I want to bring them up in this school environment – a small country school.' For those who moved to the region from cities, the advantages of country living quickly became apparent and the short stay became permanent. According to many, country living provides a 'back-to-roots' lifestyle where one can 'enjoy the best of both worlds' and, most importantly, develop a sense of community. A teacher from St. Theresa's College commented:

There is certainly a community out in the country that you just don't get (in the city). We've been happy with what we have been doing out here and we've started to raise a family.

This process of evolving motivations for moving to and settling in a rural community was well illustrated by Roberta, a teacher at St. Theresa's College:

My husband was the romantic attraction. We won't be going anywhere because we run a property, we like the lifestyle and it's a good place to bring up our children. It's the community: it's very friendly and doesn't have the pace of life down in the big smoke.

The school is a focal point of many rural areas and this same sense of community is reflected in the school dynamics. Close relationships are formed with professional colleagues, creating a good atmosphere at school and with parents. Brian described Willow Central as:

A nice small school, where you can know all the kids and you get to know their parents and their families. It's a good place. People say 'G'day' to you in the street, you're not just another face in the crowd.

The teachers also felt that they developed closer ties with students through involvement outside school time. Job satisfaction was clearly linked to 'the culture of the school'. Frances, from Willow Central School, also remarked on the links between job satisfaction and student attitude:

I like teaching kids from rural areas, they just seem happier, They get lots of fresh air or something. It's a family atmosphere I think.

Not all teachers, however, fitted this pattern. A minority saw their present situation as temporary. For example, David saw his current school, St. Peter's, as one step in the promotion ladder:

I was teaching (overseas) and my contract finished. I was looking for a position that was starting in Term 4 back in Australia. I'm open to opportunities.

Others felt that they were stuck in their present situation, a situation over which they had little control. Having moved to the bush under a transfer system that subsequently changed, they felt that they had no hope of ever getting back to a city. Betty, at St. Theresa's College admitted that 'had I known that, I wouldn't have come in the first place'.

It is important to emphasise that while a minority of teachers were quick to point out the disadvantages, most were enthusiastic about the advantages of living 'in the bush' and appreciated the 'strong community (and) strong ties to the place'. In addition to this strong sense of *identity* there were striking comments relating to the idea of comfort. As Genevieve put it, 'Coming back into Willow, you just feel comfortable.'

Staffing issues

Although generally positive about rural lifestyle and communities, some teachers believed that limited community facilities contribute to a sense of isolation, especially among young teachers from larger centres. Barbara from Rainforest High explained that 'there's nothing here really for (young teachers), unless you're married and wanting to settle down'. Teachers also recognised that rural areas do not provide the lifestyle that most young teachers desire. Established teachers are positive about their rural communities being good places to live and to work, but recognise that the issue of isolation is exacerbated by lack of facilities such as medical and banking, and by limited social opportunities. The smaller towns, such as Willow,

even lacked ‘a decent cup of coffee’ and the price of fuel ‘is five or ten cents [per litre] dearer’ than in the metropolitan areas, so there is a feeling of financial disadvantage.

Nevertheless, another teacher at Willow Central observed that the isolation was ‘to our advantage in a lot of ways’ because students are insulated from some of the less desirable city influences, and there is strong family and community support for the school, though not always for the academic side of education.

According to the teachers, the lack of community facilities and school resources, the high workload expectations and limited professional development opportunities exacerbate the problem of attracting young teachers to country towns, and also make it difficult to retain them.

It’s a problem attracting new teachers into the profession because they come into a school situation with so many demands that they find it quite stressful, and there is not a great deal of support. (Barbara, Rainforest High School)

Barbara went on to explain that an early career teacher or trainee teacher from a city would experience ‘a huge culture shock’ in Rainforest. Nevertheless, teachers were positive about the quality of pre-service training and the energy that young teachers could bring to the schools. Barbara felt that school students:

Need role models (and) innovative ideas. Young teachers are learning these as they’re coming through their training and implementing them. What they bring to the school is a vibrancy.

Sadly, the teachers recognised that the attrition rate of early career teachers was quite high. According to Bill at St. Theresa’s College:

The retention rate is very poor. Thirty percent are leaving within the first two years of teaching. If we’re going to lose that many young teachers, we’re not going to be able to staff these schools in the future.

Consequently, a predominance of older teachers is seen to have negative consequences for the school and for the students. A comment by Jane from Rainforest High reinforced this issue:

The profession is ageing. (The students) don’t see the younger maths teachers and the younger science teachers around enough to relate to them.

A related issue was the shortage of specialist teachers trained to teach some Year 12 courses, especially Extension 1 or 2 mathematics. At St. Theresa’s College, Bill explained that the lack of specialist mathematics teachers had resulted in a situation where the subject was being taught by ‘teachers who have not been trained to teach maths, but have come from other teaching areas and become maths teachers by default’.

Teachers’ suggestions for attracting and retaining staff in rural and regional communities

It was thought that raising the profile of the teaching profession would assist in attracting young teachers to the profession and then to country areas. Bill from Rainforest High explained:

Making it more of a profession is a big issue. Saying it's a desirable profession to be involved in, as opposed to a dumbing down of the profession. Seeing it as a job that is actually worthwhile.

Another suggestion for attracting teachers in rural/regional areas was to compensate for the isolated country service by providing extra leave, as is the practice in more remote western locations. Financial support could also be provided, as suggested by Anne from Willow, in the form of 'a fairly attractive locality allowance' which would compensate for the additional cost of travel associated with taking leave and with gaining access to basic facilities such as medical or banking.

A third suggestion was the creation of pre-service opportunities in rural schools and in-school support to encourage early career teachers into rural areas. Barbara from Rainforest High suggested that rural education could be a focus in pre-service courses 'to give more of an understanding of what rural areas actually do have to offer'. This training, she felt, could include 'the opportunity to do a practical in a rural area, in a nurturing environment with a family or somewhere that cares'. While some schools do have mentoring programs, these could be developed to become more proactive in retaining young teachers. Barbara went on to explain:

The support system within the school for new teachers coming in – that's crucial. So within the school we have to recognize that and build up a support team.

Given the concerns about workload mentioned above, the teachers recognised that a support scheme such as this would need to include centrally designed modules for successful local implementation.

As a balance to the perceived isolation of country areas, benefits such as cheaper housing and strong community support for growing families could be used to promote teaching in rural areas. Such measures would demonstrate the financial benefits for teachers in terms of the lower cost-of-living in general, and housing in particular.

Advantages for student learning in science, ICT and mathematics

The teachers were proud of the strengths of their schools. They felt that close school and community ties, small school size and, in most cases, small class sizes resulted in good rapport and close working relationships between teachers and students. Other benefits of the smaller schools (St. Peter's and Willow) included good communication between staff, easier transitions for learners from primary to secondary programs and the development of innovative programs and activities in schools.

The closeness of the school community facilitated the development of good rapport between teachers and students. This had a positive effect on school harmony and meant that students were more comfortable approaching teachers for assistance.

I think there's a great rapport between the students and the staff – they get on very well. They're very close, to the extent that staff give up a lot of spare time to work with them. And kids give up things to come in and work with teachers. (Bill, Rainforest High School)

Such an environment has clear benefits for learning:

The strength of little schools is the supportive, caring, secure learning environment, and I think that's evident in every classroom. I think the children feel safe here, happy to learn, happy to take risks, happy to give things a go. (Mary, St. Peter's Primary School)

Local resources were also valued. These provided a context for student learning which thus supported theoretical concepts. Barry, at Willow Central, described how 'we take the kids up to [a] National Park. Once they go there and come back you keep using those experiences [that] the kids can relate to.' At St. Peter's Primary School, Bridget described a local fossil museum, noting the importance of taking 'the time to look at what is in our own backyard and utilize our own environment'. Nevertheless, teachers also recognised the limitations of local resources and experiences and commented on the difficulties and expense of transporting students further afield.

In addition, teachers felt that smaller schools and smaller classes allowed them better to cater for individual differences. Such environments gave students confidence to participate in a wide range of experiences, rather than specialising in one area of endeavour they favoured or were good at. According to Jim at Willow Central, another advantage for students at smaller schools was the enhanced communication and cohesiveness between staff and a willingness to assist each other:

Everyone's in the one [staff] room and you find out a lot more of what's going on in other people's classes and other people's faculties and subjects.

Especially applicable to central schools was a sense of continuity, with an almost seamless transition from primary to secondary department. Jim elaborated:

In a central school, primary students get to know the staff and students from the secondary section of the school so transitions from Year 6 to Year 7 are not difficult.

The teachers identified a number of initiatives, programs and practices that they believed made a positive contribution to student achievement, including hands-on and challenge-based learning experiences, the production of teaching materials specifically designed to meet the students' needs, across KLA and integrated approaches to teaching, team teaching, external competitions that stimulated student enthusiasm for learning, and a peer support program.

Competitions, particularly those external to the school, were seen as great motivators for the students, and also helped them to adopt or recognise statewide standards of achievement. Nevertheless, the cost of participation in a competition, or travel to an event, was seen as a factor limiting participation in competitions and other worthwhile educational experiences, especially for students from low socio-economic communities.

Obstacles to student learning in science, ICT and mathematics

Despite the many strengths of rural schools, teachers identified a number of issues which created obstacles to student achievement. These related to curriculum, professional learning, ICT, student diversity and socio-economic status, access to extra-curricular activities, family aspirations, and competition from larger centres.

Obstacles related to curriculum

Students in rural, regional and isolated areas have life experiences that are, to a significant extent, different from those of their metropolitan peers. This is not always appreciated by curriculum and examination designers who sometimes assume that all students have certain educational experiences and express themselves in certain ways. Teachers raised this 'hidden curriculum' in several contexts, including assumptions implicit in Higher School Certificate (HSC) examination papers. There was a perception that HSC examiners from the metropolitan area sometimes have certain presuppositions about the experiences, the forms of expression, and the discourse that students bring to the examination. As John from Rainforest High stated bluntly: 'The questions are biased towards the experience or lifestyles of city kids.'

Teachers felt that senior students were particularly disadvantaged due to restrictions on the variety of subjects available at HSC level. The staffing formula used in larger metropolitan schools does not work for small rural secondary schools. For example, Barry at Willow Central explained:

In the smaller schools, you need to have another look at the staffing formula. What works in a big school shouldn't necessarily be the formula in a school like this. It has to be staffed according to the needs of the school.

He also stated that the limitations caused by an inflexible staffing formula are then manifested in restricted curriculum opportunities for the students with 'kids not being able to choose, especially in the senior years, the full range of subjects that they might get in a bigger school'.

Obstacles related to ICT

Teachers also identified aspects of ICT that created obstacles to student achievement. The lack of computing resources was seen to be a substantial problem in rural schools. Computers are often not readily available or accessible for teachers. At Rainforest High, John conceded 'this is the worst resourced school as far as technology for staff'. He noted a similar situation in the classrooms. 'The standard of the equipment in the classroom [is very poor]. We should have computers in the classroom.' There were also problems with the standard of technology for accessing the Internet. Bridget, from St. Peter's reported that 'The Internet connection here is really, really slow. Anytime that we've done any research on the Internet here it takes too long to do.'

Concern about ICT resources, however, was not just about the lack of appropriate equipment but also reflected the lack of suitable computing personnel. There were several serious concerns about the workload of maintaining the school's computers and network, which was often in addition to a teaching load. This was a huge task, and demanding in terms of time, energy and stress.

We need a technician in every school to maintain computer networks. A teacher who has been trained to teach shouldn't be expected to turn into an electronic whiz. We're really fortunate here. We've got a very interested parent who looks after and administers our network and totally has autonomy. But without him we would be totally stuffed up. But the scary thing is we're not going to be fortunate for that much longer. This interested parent's children are ready to leave Year 12. Every other business employs network technicians. The Department of Education doesn't and it's madness. (Barry, Willow Central School)

While the Internet is increasingly being valued as an information resource by city students and teachers, teachers such as John at Rainforest High noted that there were severe limitations on its use by rural students due to the low number of families with Internet-enabled computers: ‘A large proportion of kids don’t have computers at home here.’ The ‘low socio economic background’ of many students was cited as one reason for the limited availability of computers. Teachers at Willow Central estimated that up to ‘50% of the kids don’t have a computer’ at home. There was also concern about the ‘painfully slow’ download speeds at Rainforest, a problem that teachers believed also helped explain the low home computer use. They claimed that the local infrastructure allowed only a single phone line in most houses. In homes with computers and Internet access, competition from siblings and parents for online time and from ‘more than one member of the family wanting to use the telephone’, students’ opportunities to use the Internet for home research were severely restricted. It should also be noted that Rainforest had no local public library and therefore no library Internet access. Very few rural towns the size of Rainforest have Internet access available from libraries or Internet cafés. The public library at Willow has only three computers with Internet access, while Plains Library, which is only opened three school days a week, has two.

The slow download speeds and lack of broadband access also affected teachers. Barry noted regretfully that Willow does not have broadband and is unlikely to have it anytime soon.

Obstacles facing Indigenous students

While recognising that rural schools generally have smaller class sizes, some teachers maintained that even smaller groups were needed in order to encourage and foster academic achievement by Indigenous students, enabling them to complete Year 12. The belief was that smaller class or group sizes would facilitate the practical activities that students respond to:

When you’ve got Aboriginal kids working in small groups you can get them working. ... They’re lost in a large group. A fair few of those low ability kids are Koori kids. If they get lost then you lose them next year and you won’t get them back. If you keep them going through 9 and 10 you’ve got that bigger opportunity of keeping them going through 11 and 12. (Barry, Willow Central School)

The benefits of hands-on and challenge-based learning activities were expounded by Robyn at Willow Central who observed that Indigenous students in particular ‘perform well at practical tasks but not at non-practical or more theoretical tasks’. In Robyn’s experience, students need and respond well to concrete approaches to learning, to hands-on and discovery approaches, to integrated or across KLA approaches, and to problem or challenge-based learning. In effect, she added, teachers respond to student need ‘so you present things in a way that they understand’. This was illustrated by links of the Aboriginal children’s families with a local trucking company which served as an example of putting theoretical concepts into a concrete framework with which children identify.

Some teachers explained that they had created their own resources and support materials for teaching Indigenous students. Jim at Willow Central described how:

We’ve gone away from using a textbook [in maths]. We try to do our own booklets that are sort of specific to what they’re doing, and get information from a number of different sources.

In addition to tailoring the booklet content to the students’ needs, Jim commented that the students had ‘ownership of their booklet’, and for ‘a lot of the Koori kids and other kids it’s

theirs. They've got ownership of it and they've got ownership of the work in it.' The notion of ownership of work and learning has sound theoretical support but clearly the creation of the booklets was time-consuming and increased teacher workload.

Obstacles related to professional development

Teachers in rural schools recognised the need to maintain their expertise through professional learning. However, they considered that there were several ways that they were disadvantaged in this regard, creating in turn obstacles to student success. Jane at Rainforest High was emphatic that 'teachers need professional development in rural areas . . . I need it so that I can help improve the outcomes for my students.' David at St. Peter's Primary School noted that, while there seemed to be professional development opportunities in literacy, 'not one on maths and science has ever been offered'. There was also a concern that many small rural schools had only one maths, science or ICT teacher, making it difficult for professional dialogue.

Teachers also highlighted the lack of access by rural schools to a pool of casual or relief teachers, placing a huge imposition on teachers:

I have nobody within a 200 mile radius that I can call on as a casual teacher who can teach physics if I want to have a block of time or long service leave. I'm sitting on long service leave that I don't morally feel I can take because every year I have Year 11 physics and I have Year 12 physics. (Martin, St. Theresa's College)

Teachers were therefore disadvantaged when seeking to engage in professional learning activities, either in school or at other centres. The lack of casual relief teachers also meant that access to leave was difficult for teachers committed to student achievement.

These difficulties with professional learning adversely affected the integration of ICT in schools. The lack of professional learning in ICT, explained David from St. Peter's, resulted in a 'lack of confidence' with teachers often only 'one step in front' of the students. Bruce at St. Theresa's College complained that 'we are given great computers but I have never had professional development on how to use a computer'. Because of the lack of professional development, he felt that older staff members 'don't feel comfortable with ICT, so they're not willing to implement things because they're scared of it'. This is compounded by the demand for limited ICT facilities, typified by the situation at Willow Central School:

We've only got one computer lab. You're wanting all classes to use the lab so it's impossible. Teachers book in to use the room and it's pretty hard to get in there. It can be very frustrating. (Robyn, Willow Central School)

Furthermore, teachers such as Bruce at St. Theresa's College commented on the need for full-time support personnel to maintain ICT, since 'having a part time ICT person just doesn't work'. ICT support was often an 'extra' duty for a teacher and some schools relied on volunteer work by parents.

Obstacles related to providing extra-curricular activities

Teachers reported that students attending rural schools often missed out on educational experiences that those in larger centres took for granted. The tyranny of distance was exacerbated by the high cost, or lack of, transport, especially in economically disadvantaged communities. The result was a paucity of school excursions and loss of opportunity for the alternative, hands-on activities that the teachers saw as valuable in creating context in

learning experiences. Concerns about distance and cost of transport were far reaching and included access to learning opportunities and resources, students travelling to sporting or extra curricular activities, and teacher professional learning.

Teachers at isolated schools, such as Jim from Willow Central, would like access to a bus. 'Having our own bus, we could just say "right, we're going here today or we're going there".' Lack of transport 'cuts down on some of the activities that we could probably do'. He made further observations about issues related to travel and distance:

Providing transport and some funding when you're trying to take kids away on excursions would be really valued. We're getting more and more low socio-economic parents who don't have vehicles suitable to put on the road. The parents who have got the time to go, who are unemployed or otherwise unengaged, don't have the vehicles to do it, and the parents who can afford the cars haven't got the time because they are working. And it's a big thing trying to provide the kids with those experiences, even just getting out of [Willow], because there are kids who haven't ventured further than [the next town] and some kids who haven't ventured out of [Willow] before.

Obstacles related to family aspirations

Teachers felt that community attitudes, combined with a lack of experiences and role models at various levels, affected the goals and aspirations of students. Community attitudes at Rainforest were summed up by Barbara: 'They grew up here, they like it. There are not a lot of university type jobs in the town. Why aspire to things that you won't need [in order] to live in [Rainforest]?' According to Martin at St. Theresa's College, the lower parental aspirations were reflected in school priorities: 'There just doesn't seem to be as much time or commitment to rigorous subjects.' Teachers at Rainforest High reported that there are parents who say, 'I never got an education, what do you need one for? I still made it so why can't you?' and that this attitude rubs off on students who 'tend not to see that there is a world outside' and who 'pull the reins back on themselves. [It's] their confidence in what they think they can do. They're holding themselves back.'

For many families, academic studies are not afforded a high priority. Schoolwork and homework often lose out to competing family and student priorities. At Rainforest High Jane provided examples where the rural life took a higher priority. 'Students will tell me, "I've got to go and kill pigs every night this week"' and where sport also took a higher priority: '[a student can't do homework] because he's in a football team so he has to drive from here over to practise two nights worth of football for some comp. and stay with his uncle'.

Obstacles related to competition from larger centres

Teachers acknowledged that there was a perception among parents and students that private schools in larger centres offered better subject choices and enhanced HSC results, and that this led to a 'brain drain' from rural high schools. At Rainforest High Bill noted that the number of students involved in this shift could be large: 'We're losing three bus loads of kids out of town everyday' and these students tended to be 'the more academic kids'. In a similar situation, teachers at St. Theresa's College said that local students attending schools in the larger centres were 'the brighter kids who are wanting to do maths and sciences'. Robyn at Willow Central noted that this loss of students could in turn lead to a reduction in subjects available to the remaining students, 'especially in the senior years'.

Summary of obstacles to student achievement

Rural teachers identified many substantial obstacles to students achieving their potential. In particular, they drew attention to the ‘hidden’ curriculum, which they saw as being biased toward the implied understandings in HSC examinations and against rural students who bring different experiences, forms of expression and discourse to the examination. The limited opportunity for professional development, and the associated substantial costs in time and travel were other major concerns. These difficulties were exacerbated by a lack of specialist casual teachers to take over classes.

The inflexible staffing formula was seen to increase the obstacles for rural students by limiting the number of specialist teachers and therefore limiting the number of specialist subjects that could be offered by some of the smaller schools. Two issues that appear to be linked are the unsuitability of some subjects to meet student need and future employment preparation as well as student and family aspirations. Arising from and exacerbating many of the obstacles was the perceived benefit of larger schools that have the physical and human resources to offer a greater range of subjects and course pathways.

STUDENT PERSPECTIVES

Living in a small town

Students were generally positive about living in a small town. They thought it was comforting to live in a place where they knew people, where people knew them and where they didn’t get lost in a crowd. ‘It’s open and, like, it’s easier to know everyone,’ said one Year 5 student from St. Peter’s Primary School. Another agreed: ‘It’s just fun to grow up in.’ On the other hand, some students also acknowledged that sometimes a limited range of entertainment in the town could be a disadvantage – ‘It does get boring.’

Attending a small school

The benefit of living in a small community flowed on to knowledge of staff and students at school. ‘Most of the teachers are friends with our parents and all that sort of stuff . . . and we’re friends with their sons,’ explained Tom from St. Peter’s , who also added that at his school ‘you know everyone’s name’.

The students generally appreciated being recognised by teachers and other students, and therefore had a deeper sense of personal identity within the school. Toby from St. Peter’s explained that ‘they’d know you as a person instead of just knowing your name’. This sense of identity had clear implications for instruction since, as this student explained, ‘the teachers . . . get more understanding of the work you’re doing. It’s a small school so you get more attention.’ Students at Willow Central School agreed that ‘the teachers have more time for us’, and students at Rainforest High described how teachers would help students out of school hours. ‘Our teacher, he’s so committed, he is coming into school tomorrow (Saturday) to teach us because we’re so behind and he will be doing workshops in the holidays, so that’s the best thing.’

The significance of good teachers at the schools visited by the SiMERR NSW team was expressed on several occasions and in relation to several subjects. Students at Rainforest High School spoke very positively of their mathematics teacher:

He can explain stuff really well. Other teachers they explain it to you and you don't get it . . . and you can't ask another student because they don't know either. If you don't get it when he explains it, he simplifies it even more.

While increased individual recognition was generally seen as an advantage, there were also disadvantages. Being at a smaller school meant that students could not avoid the teacher's attention. One Willow Central School student admitted that 'sometimes it's kind of a bad thing because you get asked more stuff' in class.

Intriguingly, the students felt that, because teachers knew them, they were 'less sort of stressed and [more] relaxed'. When asked to elaborate, Melanie from St. Peter's also noted that the teachers were 'a lot less stressed down here 'cause they only have to prepare like 16 sheets instead of 40 or 50'.

Students did identify some ways in which they felt disadvantaged in comparison to those in schools closer to large cities. One student at Rainforest High School commented that 'our library is not that great', while others referred to resources beyond the school. Rebecca from Willow complained that:

We don't have museums that we can go and look at . . . big libraries, and people that know stuff about it so we could go and ask them. You can't here, because everyone here knows about animals and that's about it.

Kate, a senior student from Rainforest High, noted that 'you can't really get to things like in the cities . . . like libraries and computer centres'. Kate went on to explain that access to resources such as museums and specialist instruction was a particular issue in Year 12, since:

You notice a lot of seminars going on in Sydney about the different topic-related things. I actually travelled to Sydney for one of them and there were a lot of people there from Sydney, I was the farthest away. But there are not that many run around here, you don't have those extra seminars.

Travel time

There was a range of travel times for students but, in most cases, these times were relatively short – between three and ten minutes. Students living on farms some distance from the school had the longest times but 40 minutes was the longest reported to the SiMERR NSW team by students at any of the schools.

Leaving town for different schooling

There was some evidence of a flow from rural schools to boarding schools in metropolitan or larger centres. At St. Theresa's College students agreed that living in a place like Barton, which has a university, influenced their educational pathway: 'because the Uni's here a lot of people just go straight from school to Uni . . . I guess it's just easier'.

Career and future opportunities

The students believed that many of their peers wished to stay in rural and related careers. The secondary students, however, described their interest in a range of different careers, many of them not directly related to rural industry such as human resource management, forensic science, vet science, photography, the media, law, mechanics, agriculture. Students said that

their choice of place to live in the future would be guided by their career (even if it were agricultural work). All agreed that they would not be happy about leaving their home towns for study or for employment.

Computers and Internet access

There was consensus that access to computers at schools was generally satisfactory. At Rainforest High School students described difficulties when other classes were booked into the computer rooms but also noted that, on request to the Principal, a laptop is made available to any student to assist with the completion of specific tasks:

That's the rule for everyone. You just have to ask, that's the thing, going out and asking . . . if you don't have a computer at home as well. They take that into huge consideration.

Students at all schools believed that Internet speeds were sometimes slow, particularly when there were a number of students trying to access the Internet at the same time. Ben from Rainforest High remarked: 'Room 13, don't even bother going there, if you've got a class booked in there you just sit there and talk because it's half an hour just to get logged in and get on the internet.' While this was seen as a problem, a more pervasive issue was the use of computers with older operating systems and limited memory. Even at Willow Central School, where the computers had been recently upgraded, the students noted that 'we've got all new ones now, (but) it would be better if we had a bigger common server'. At Rainforest High students described a frustrating incident in which 'right at the end [of the lesson] we got told save it and print it out. We couldn't save it, and the printer wasn't working.'

It seemed that the major use of computers was for gaining access to information in subjects such as geography and history and for word processing assignments.

Studying ICT

Students studying ICT subjects noted that programming was difficult and that students who did better at this subject were those who used computers extensively at home. They also noted that, for this subject, faster computers with more memory would make their study easier. When asked what would make ICT easier, students at Willow Central School responded 'stopping the computers from being so slow'. At Rainforest High School, Tanya described how she had been forced to pull out of an ICT elective because there was not a teacher available to teach this subject.

Studying mathematics

Students recognised the importance of mathematics. 'You need it if you go for a job or anything,' explained Robyn from Willow Central, who seemed to particularly appreciate the certainty of the subject. 'I like that in maths I can just give one answer, like it's just an answer, it's either right or wrong.' There seemed to be no particular pattern regarding students' attitudes to mathematics; some did not like it, while others enjoyed it. It was sometimes hard for students to explain why they enjoyed mathematics. 'I dunno, I just like it,' said a student from St. Peter's Primary School. Unsurprisingly, though, students who enjoyed the subject were also those who seemed to have success at the subject. Meg from Willow Central declared, 'Well I love all of maths. It's my favourite.' When asked why mathematics in particular appealed to her, she replied 'probably because I'm good at it!'

Studying science

Students appreciated the practical aspects of the subject and consistently mentioned how practical activities such as experiments made science a more enjoyable subject. This was expressed clearly by Tom from St. Peter's when discussing different aspects of the science curriculum: 'And like you can just see everything he's talking about in biology, instead of like radio waves. You've got to imagine them first.'

Willow Central School students commented on the outdoors activities provided at their school; lessons held at the creek to illustrate relationships in biology. Rainforest High School students also commented favourably on excursions to local national parks.

Choice of elective subjects

Some students believed that subject choice, particularly for senior students, was limited and skewed towards agriculture-related courses. 'It's not that good; it's more agriculture, visual arts. I wanted to do Tech. Drawing, but you can only do a minor in it because there are not enough students that want to choose it,' said Michelle from Rainforest High School. Her friend added, 'I wanted to do oceanography and they don't choose anything for geography, they have all the rural (courses).' These students believed that this emphasis on rural electives was due to the number of students wanting careers in that industry:

Because we vote for what subjects we want, a lot of the people who live out here want to do agricultural things, but all the people who want to go and get a job in the city or something, they just have to work around what the other choices are. (Rachel, Rainforest High School)

While a few students were not happy that a particular elective choice was not available, in general, students were undertaking a range of electives and seemed reasonably satisfied with the choices offered by the school. When asked about the range of choices, Anna, a senior student from Rainforest High, commented that she 'thought it was pretty broad'. However she went on to explain that just because a subject was offered did not mean that it would necessarily be taught in the preferred mode:

I had to do a subject by correspondence because the school wouldn't run legal studies for five people, but it would run chemistry for four. I was a little annoyed about that. So I had to do it by correspondence but that didn't really work out. It was too hard, and my teacher didn't really care.

PARENT PERSPECTIVES

The parents interviewed had lived locally for periods varying from 12 months to 45 years. The most common reason for settling in the area was because one or both parents were locals. Wendy from Rainforest, for example, 'moved here from Brisbane ... and married a local'. Others came to the country because of their spouses' employment situations. Typically, these parents were originally from bigger towns or metropolitan cities. Another common reason was the attractiveness of the rural lifestyle. Dan, a parent with two children attending St. Peter's, moved from Sydney 'by choice [to] run a local business'. Others, such as Bob at Willow Central, moved locally 'because Sydney is a rat race ... it's a better life up here'. Similarly, other parents were looking for the advantages of raising a family in a small rural area where there was a sense of identity with the community and the advantages of a safe environment.

Educational aspirations for their children

Parents' aspirations were heavily influenced by their children's demonstrated abilities, career preferences and available options in rural areas. Parents expected academically able children to go to university. For example, Wendy from Rainforest commented that her daughter 'is doing exceptionally well in her classes ... she's going on to university'. Other career plans discussed by parents included a traineeship in accountancy, a Bachelor of Information Technology, a forensic science degree, and entry to a police academy.

Parents who considered university study to be beyond their children's present abilities still expected them to finish Year 12. Mark from Rainforest predicted his son Jim was 'not going to have further education, maybe a traineeship. I've got a daughter in Year 10 [who] is going to Year 12 (but) doesn't want to go further.' Maureen at Willow Central had similar expectations for her children; '[Helen] is in Year 11, she wants to do Year 12 in TAFE [and John] is sort of not the genius he's just tagging along but I think he'll go to Year 12 ... he might go onto TAFE.' Recognising the importance of post-secondary education, these parents encouraged their children to complete Year 12 before considering a TAFE option.

A third variety of educational aspiration was for children to complete Year 10 but switch to a TAFE education, a traineeship or farming before returning to Year 12. Parents saw working on the family farm was a common option for children who weren't going on the university.

Strengths of school in helping children achieve in science, mathematics and ICT

Parents perceived several strengths of education in rural schools. These strengths could be described within three broad categories – characteristics of the teachers, characteristics of the school itself, and characteristics of the community.

Characteristics of the teachers

Unanimously, parents agreed that the greatest strength of their schools were the experienced teaching staff who, according to Bert from Willow, 'know the students and know the parents'. Furthermore, the teachers were considered to excel in their teaching subjects. Bert went on to explain that teachers showed commitment and love for teaching and the school because 'they want to be here ... because they love the place, they're going to do their best at it'.

Consistent with the comments of teachers, parents such as Bert felt that rapport between students and teachers increased students' motivation to learn. He noted the benefits of teachers' involvement in community activities – 'the children get to be with them outside of school'. 'The teachers get to know the kids individually and can help them along,' commented Janet from Willow.

Parents further noted that the teachers' ways of teaching and having open discussions really encouraged students to learn. 'The kids don't even know that they're learning,' observed Maureen from Willow, who considered this approach to suit the Indigenous students in particular.

Overwhelmingly, parents believed that the greatest strength of a school was whether or not it had experienced, quality staff with effective teaching strategies, good rapport with students and established support systems to assist students.

Characteristics of the schools

Parents believed that a number of school characteristics advantaged their children. These included the small size of the schools (where applicable), their safe and nurturing atmospheres, and the teaching philosophies of staff. First, the smaller size of schools like Willow Central and St. Peter's was seen as benefiting learners. Overwhelmingly, parents perceived that teachers in small schools were more accessible and approachable by students both inside and outside school. Small class sizes enabled greater opportunity to address students' individual strengths and weaknesses, and encouraged development of supportive peer relationships thus developing learning and personal values. Janet from Willow, believed that 'smaller classes equal greater individual attention [and] a more nurturing environment', leading to academic improvement. Beth from Plains pointed out that 'students' strengths and weaknesses are picked up more quickly here because they get more attention than they would at a larger school.'

One consideration with smaller schools is the need to have composite classes, although no parent was critical of this arrangement. Beth, a parent at St. Peters, perceived composite classes to be beneficial in that 'they do not isolate gifted and disadvantaged students. Instead they are re-grouped with older and younger children ... it sort of evens out the level a bit in that respect.'

The second characteristic was the proximity of the school to homes or places of employment. At Willow, for example, Bob described how 'we picked the school ... [so] there'd be no bus rides. I've got a job here and the kids come to school here.' Having a school located conveniently close to homes or work was vitally important to these parents, not only for logistical reasons but also for economic reasons, as explained earlier by the teachers.

The third characteristic was the safe learning environment within the schools. Parents, such as Maureen from Willow, preferred a school in a location where 'there's no temptation like arcade galleries [as] in Sydney'. Because Willow is a Central school, parents also believed their children were less likely to 'get lost in the system'. They felt 'the transition from Year 6 to Year 7' was easier, since 'the kids move up together'.

Finally, parents considered the schools' teaching philosophies to be important characteristics. Crucial aspects of this philosophy for Dan, at St. Peter's Primary School, were the establishment of better provisions for special needs education and the emphasis on attracting quality staff. 'Our eldest daughter has special needs,' he explained, and 'the teachers were prepared to address those issues. Also the philosophy of the school allows it to attract a higher calibre of teaching staff.'

Another St. Peter's parent preferred a school with a more holistic approach to addressing both the strengths and weaknesses of a child's learning. In such a school, the staff were 'willing to try and develop [the strengths] and notify parents of the weaknesses compared to the other schools where on a larger scale they just can't do that.' Without doubt, the abilities of schools to provide special education, to nurture children's strengths and address their weaknesses were important factors, especially for parents of primary children.

Characteristics of the community

Parents believed that a significant positive characteristic of rural education was the strong sense of community. As evidence of this they described how the teachers offered after-school assistance free of charge and in their own free time. For example, Janet described how 'they have the Homework Centre' at Willow Central . 'That's just staff giving up their time for

anybody after school.’ It was a similar situation at Rainforest High. ‘The majority of our teaching staff are really good, really willing to get in there and push the kids.’

It was this same strong sense of identity with the community that drew the locals back to the area if a choice to leave was considered. Marj at Rainforest described what had happened when they moved their children from a small rural primary school to a large regional secondary school. ‘The first day [Carrie] just dropped, came home in tears, couldn’t decide what she was doing.’ In response to this unfortunate experience, the children were taken out of the large regional high school and enrolled in the smaller local high school. ‘We moved down here and they all blossomed.’ Marj went on to explain her belief that being connected, developing supportive peer relationships and feeling a part of the school, ‘is a really important part of why students can succeed at school ... [Mara] is connected with this community and this school ... its part of her personal values.’ She concluded that the positive effects on her children’s achievement at school can be attributed to a feeling of relationship with the community. ‘It’s the connection they have with the community ... both my kids have decided to stay in Rainforest.’

Parents from Willow discussed the harmonious relationship developing between the Indigenous and non-Indigenous communities. Maureen observed that ‘the whole attitude is just fantastic there [in the Aboriginal Mission] . . . I think it’s what helps the non-Indigenous and Indigenous together is that attitude . . . it’s a long road to go but you’ve got a fantastic starting point compared to other places.’

Programs and practices that help students achieve in science, ICT and mathematics

Parents were asked to suggest programs or practices they recognised as helping their children learn science, ICT or mathematics. They were able to identify a number of programs such as *Mathematics Enrichment* and *Count Me In Too*, and initiatives such as mathematics and science competitions. It appeared that the schools utilized a number of literacy and numeracy programs to supplement classroom teaching and, in particular, to meet the needs of disadvantaged students.

Beneficial school practices included school-organized sessions to inform parents of new curriculum development and to share information from teachers’ in-service days (e.g. *Six Hats Program*) ‘which is great because it lets us know that they’ve been to an in-service’. Open classroom sessions on literacy (e.g. *How to Teach Your Child to Read*) and numeracy (e.g. *Count Me In Too*) were seen as useful by Willow Central School parents, as were the weekly visits to TAFE by some children. A popular practice at Rainforest High School was the ‘Homework Book’ which parents liked ‘because it can pinpoint where the students are having problems’. Furthermore, parents felt that teaching strategies in the classroom demonstrated the accrued benefits of ongoing teacher professional development.

Parents further noted that these refreshing ways of teaching seemed to result in substantive learning as evidenced by their own children’s exciting descriptions of fun ways of learning in primary classrooms. ‘All this hands-on stuff (in science) is fantastic ... and maths is taught to them in a way that is fun,’ commented Sue. With the evident excitement in classroom learning, Sue and others perceived that it must be related to the ‘training the teachers do ... keeping (them) up to date and refreshing them helps’.

Obstacles to improving student outcomes in rural and regional schools

Obstacles to the achievement of student outcomes could be broadly organised into three categories relating to geographic location, community, and ICT.

Obstacles related to geographic location

Geographic obstacles were those where parents believed that achievement of student outcomes was made more difficult as a result of the isolation of those communities. Parents explained how excursions to museums and science fairs were expensive and involved long travel times. For example:

If you're in the city, you're closer and you've got more hands-on stuff. Because we're remote from a regional centre it costs us more to get our kids there, whereas regional and city school kids often walk over to various places for excursions. (Bob, Willow Central School)

Overall, the remoteness of the areas made it expensive for rural children to have more excursions on a regular basis. Nevertheless, excursions were seen as an important component of school education, and one which 'definitely enhances the understanding and the reality of the project, rather than sitting in the classroom'.

For some farming families, long travel times between home and school were another obstacle, particularly if children took the bus. '[The] children get up at the crack of dawn and get home exhausted,' observed Marj, whose children attended Rainforest High School. She described how parents simply drove their children to school, or 'carpooled with a neighbour so we actually have less travelling time, and in more comfort'. Leaving home early, travelling on a bus and arriving at school only minutes before classes began was a situation perceived by some parents to adversely affect learning and possibly contribute to disruptive behaviour in classrooms. 'By the time they get here, they're not really ready to start school,' Marj concluded.

Distance from an office of TAFE was perceived by Bert as another obstacle, especially for parents whose children aspire to go to TAFE 'because we've got to travel to get to someplace ... It means leaving home to do TAFE studies, which then becomes quite expensive.'

In summary, the majority of parents felt that isolation was an obstacle to excursions and other extra-curricular activities. Those living out of town also felt that distance from school adversely affects students' preparedness for a fruitful day of learning, particularly after a long and often bumpy bus ride.

Obstacles related to the community

Parents commented on the negative aspects of living in a relatively low-income community, a factor many felt affected the number of excursions a rural school could offer. Dan, from Plains considered that having so many low-to-medium income families in the district 'does impact the children'. Another community-related obstacle was the low participation rate in teacher-parent sessions by low income parents and Indigenous community members. '(More) Aboriginal parents should come . . . there's not enough Aboriginal parents participating . . . [but] we have a lot of non-Aboriginal parents who don't turn up either,' asserted Maureen from Willow. Parents from Plains viewed the poor attendance at St. Peter's parent-teacher sessions as a function of smaller communities where parents were struggling to balance work and home concerns, such as caring for sick children.

Another issue in rural communities, identified by Janet from Willow, was related to the diverse needs of students at the school. She described this as a tension between ‘having small groups where the kids get individual attention in the classroom’ and having ‘less social contact’. Diversity of student need was raised as a community-related obstacle by other Willow parents. With regard to Indigenous students, the consensus was that ‘[Aboriginal] kids are behind the eight ball from day one . . . We’ve got to encourage them to come to school.’ Parents believed that due to inequities both in school and the workplace, Aboriginal students appeared to have negative attitudes. Bert, an elder of the Rainforest Indigenous community, acknowledged this, noting that ‘you can’t blame them . . . you’ve got to think how they’re thinking . . . It’s a harder life for a black fella than it is for a white fella.’ The poor educational outlook for Indigenous students was exacerbated by the prevalence of single parent families. Like Bert, Maureen’s advice for teachers of Indigenous children was, ‘You’ve got to be mindful of where they are from.’ She elaborated on her belief that the absence of a father figure at home meant that young solo mothers were often ‘struggling with the kids (and) need all the help they can get’.

Overall, the medium-to-low socio-economic status, coupled with the remoteness of a community, created obstacles such as high travel costs and infrequent excursions, and limited access to some educational opportunities. Indigenous attendance and attitudes to school were also seen as complex and significant issues which the communities at Willow and Rainforest were trying to address.

Obstacles related to ICT

A lack of specialist ICT teachers and access to computers during off-class times were perceived by parents as significant obstacles to students achieving their potential in ICT. This was a particularly important issue for parents with children undertaking ICT courses for the HSC. Parents explained that, in general, technical and specialised services in rural communities were expensive and not easily accessible when the need arose. There was often very slow Internet access at rural schools, unlike other large regional schools. Ready access to computers during off-class times was seen as a problem in rural schools, but the scarcity of specialists to teach and support ICT was overwhelmingly seen as the greatest problem.

Parents’ suggestions for improving student outcomes in science, ICT and mathematics

Parents made several suggestions for being able to better meet the needs of students in rural schools.

Suggestions for addressing the needs of diverse groups of students

There was a range of views on how schools should address the diversity of student academic ability. One suggestion related to the establishment of graded classes. Some Rainforest parents suggested that slow learners and disruptive students should be put in ‘a special class for those that need all that help . . . because they’re slowing down the whole class’. However, other parents from Willow suggested that ‘the slow learners might benefit from having smarter kids in the class, but removing the disruptive ones more than the slow learners would help’.

Some parents observed that, while the needs of slow learners and advanced students seemed to be adequately met, the middle-ability students appeared to be ignored most of the time. ‘They’re plodding along, they’re passing . . . but they don’t get any attention, so we need to be able to spread (attention and resources) out a little bit more.’ Other parents, such as those from Plains and Barton, suggested that there should be suitable local secondary schools for

their gifted and talented (GAT) children in rural areas, otherwise ‘GAT students go to city schools.’

Parents also made suggestions regarding policies and resources in schools. One of these was that there should be equity between schools; that the same opportunities should be offered to each child across different schools.

Finally, parents believed that any learning difficulties experienced by children from single-parent homes and disadvantaged backgrounds needed to be addressed sensitively if they were to achieve their potential in school.

Suggestions for increasing curriculum access

Recognising a need for specific expertise in subject areas such as mathematics, science and ICT, parents suggested making available grants to primary schools such that they could have at each school a single teacher who has expertise in these areas. This would contrast with the current practice at primary schools where all teachers are subject generalists.

With regard to excursions, some parents suggested that the federal and state governments need to consider the effects of distance on students’ access to the opportunities their city counterparts have. This may include exhibitions and activities being sent out to regional areas. Dan, at St. Peter’s Primary School explained that ‘the Government needs to come up with a program of regionalizing Australia. They need to start to really address those issues.’ He recognised the importance of resources such as ‘Virtual Tours of Questacon’, but also of having other solutions not based on ICT.

Suggestions for improving student engagement

There was some concern about the poor behaviour of some students, and the effect of this behaviour on student learning. To minimize disciplinary problems in classrooms, parents at Rainforest High School proposed that ‘there need to be some consequences for lack of respect’. These parents felt that it was a basic societal and cultural problem of lack of respect. ‘It comes down to respect, it really is respect.’

SUMMARY AND REFLECTIONS

The teachers, students and parents in the focus group schools identified a variety of issues they believe affected the quality of science, ICT and mathematics education available in their local areas. All three groups felt the sense of community to be a strong element in providing a safe and nurturing environment for education. They acknowledged the significance of their schools, particularly the role they play as barometers of the health of their communities. Parents, teachers and students recognised the benefits of smaller classes, greater personal attention and sense of belonging characteristic of smaller rural schools. Regardless of the circumstances by which they first arrived at the schools, many of the teachers were enchanted by the locale (and in some cases the locals), the connections they were able to make in the communities, and the satisfaction of working with children who represent a big part of any small community.

The students also acknowledged the sense of belonging and security associated with living in a small town, and were aware of the networks linking themselves, their teachers, and parents. The parents considered these characteristics to benefit the education of their children. In particular, parents associated with the smaller schools believed that the teachers knew their

children well and were able to provide greater individual attention than would be the case at larger, more impersonal schools.

All groups identified obstacles to achieving student potential in science, ICT and mathematics. The teachers recognised that, especially in the smaller communities, it was difficult to attract and retain quality teachers due to the relative lack of services and the costs of travel. Secondary teachers were aware that this problem is exacerbated by the overall decline in the numbers of science and mathematics teachers. They suggested a number of financial and professionally supportive strategies that could be implemented to alleviate this problem. In terms of improving student outcomes, the teachers suggested that curricula and examinations be more sensitive to the experiential differences of rural and urban students, and that staffing formulas be reviewed in order to provide equity of educational opportunity to students, regardless of location. The parents did not raise staffing issues as an obstacle, a finding that suggests they were less aware than teachers of the problems outlined above. Students undertaking HSC courses appeared to be more concerned about staffing as it sometimes affected the range of courses offered at their schools.

Teachers identified a number of ICT-related difficulties they believed would be less common in metropolitan schools. These included slow Internet connections (especially with a number of students logging on at the same time), insufficient technical support personnel, and in some areas, low levels of student access to computers at home. The parents and students were familiar with these problems, especially the need for technical support, and the lack of specialised teachers to take senior ICT courses. Students generally seemed satisfied with school ICT resources, except in the context of classes accessing the Internet.

Teachers and parents felt that the costs and travel time associated with remoteness from large centres affected the quality of teaching and learning. The teachers believed that suitable professional development opportunities were rare and difficult to access, and acknowledged a significant need for such opportunities in order to improve their ICT skills. Both teachers and parents recognised the financial and logistic difficulties involved in providing students with extra-curricula learning opportunities, including excursions. These difficulties were more acute in areas of low socio-economic status.

Teachers and parents raised a number of issues concerning Indigenous students. The teachers suggested practical-based approaches with smaller groups would have greater success in improving educational outcomes. The parents at Willow and Rainforest believed that greater involvement in the school by the Indigenous community might change the attitudes of Indigenous students to school. Teachers and parents, including Indigenous parents, acknowledged the complexity of these issues, but were willing to try new approaches.

Overall, the views of the teachers, parents and students interviewed by the SiMERR NSW team were generally consistent with what has been reported in earlier studies (Human Rights and Equal Opportunity Commission, 2000; Vinson 2002; Yarrow, Herschell & Millwater, 1999), suggesting that many of the obstacles identified in these reports still remain. In particular, the difficulties associated with inadequate staffing and ICT support, and the relative disadvantage experienced by these students with regard to accessing learning opportunities and senior courses, need to be addressed if they are to have the same opportunities as their city peers to achieve their potential in science, ICT and mathematics education.

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