Margins for error: A discussion of barriers preventing the connection of mainstream and margins when conducting in-school research

Introduction

In 1988, Australian songwriter Judy Small wrote *You Don't Speak for Me*, standing up for those who disagree with politicians, newscasters and graffiti artists who claim to speak for all. With her permission but not necessarily endorsement, I offer these additional verses as a prelude to this chapter.

You who only research in big cities and towns

And in just the mainstream your studies are bound

You don't hear the voices of people outback

Well you don't speak for me.

For I live in a tiny town way up the track,
With a pub and a store, that sells stuff by the sack
My kids attend school with just one teacher there
So you don't speak for me.

And you who conduct research in just one state
Ignoring five others that make this land great
And rarely engage with the territories too
So you don't speak for me.

But you who make efforts to criss-cross this land
And against all the barriers you're taking a stand
Because you recognise all the marginalised
You speak for me, yes, you speak for me, you speak for me.



Figure 15.1 Original photo by J. Donovan 19/09/2010 of store and pub in Queensland modified in Be Funky on 13/09/2013

Australia is a big country, the sixth biggest in the world with an area exceeding seven million square kilometres, or 5% of the world's land mass (Geoscience Australia, 2010). Politically, Australia is one nation of six states and two territories. All but one are co-located on the main land mass, connected by roads of varying quality, as well as rail, coach, and air services. The sixth state is readily accessible by air and sea. Yet characteristic practices result in in-school educational research being restricted to participants from just one state, or even from just one city. Convenience sampling (e.g. the "school down the road" or "the school with which our University has a relationship") rarely includes schools from other states or even from rural and remote regions within the one state. Despite that, findings from a limited sample of the mainstream are often generalised to the entire Australian population without consideration of their applicability to other parts of the mainstream, let alone to people in the margins.

What implications arise from this limitation? Are there margins for error? What barriers exist and how might researchers overcome these? This chapter aims to challenge the existing paradigm of educational research in terms of sampling, and to offer some innovative yet marginal solutions that could be gainfully brought into the mainstream. A recent doctoral study, in which school students from four rural locations in three Australian states participated, provides a contextual example for the elucidation of these ideas.

The problem

The introduction indicates two related problems, a margin within a margin. A broader margin is at the national level, the divisions between states. Within each state is another margin, the city-rural divide. Both of these problems share similar barriers and so are jointly considered in this chapter.

It is difficult to obtain hard data showing how many in-school research studies utilise samples from multiple states of Australia. Searching for collated information proved futile, so to obtain preliminary data to ascertain if a problem exists, articles from 2011-2013 in two general Australian educational research journals (*Australian Journal of Education* and *The Australian Educational Researcher*) were surveyed. This sample comprised 107 papers, as shown in Figure 15.2.

Immediately excluded were 21 reporting overseas research and 34 reporting document analysis. Of the remaining 52 papers, only 22 reported in-school studies involving school students. The highlighting on Figure 15.2 shows that very few studies are conducted across multiple states, even when large numbers of schools are recruited. Similarly, relatively few

research projects encompass all of urban, regional, and rural areas for comparison purposes. Urban sampling predominates, predicating the voice of the mainstream over the voices of the margins. Multiple researchers in different regions facilitated those four studies that sampled more than one state. The only study conducted across all states and all areas utilised online surveys. No study indicated a single researcher had collected face-to-face data from more than one state. The limitations of this sample are acknowledged, but it affords support that a problem may exist.

The issue of barriers to interstate research was not raised in any paper, and only one pointed out that remote Indigenous schools are rarely the subjects of research (Brasche & Harrington, 2012). Literature searches yielded a sole Australian paper on the development of a national curriculum for mining studies across four universities (Andrews, 2010). This paper identified the main barriers (to interstate teaching) as being institutional security, a narrow focus on their own students, and affordable and reliable access to videoconferencing technology.

Searches of international literature yielded sparse results, despite other countries also having states, provinces, counties, and urban, regional, and remote areas. A US paper on cross-state partnerships in childcare suggested the main barrier was achieving commonality of databases (Weber & Wolfe, 2002). A paper lamenting the dwindling status of social studies in the USA (Passe & Patterson, 2011), suggested that various state research groups should adopt a new collaborative model in which common objectives would be investigated using common survey instruments in order to share research findings interstate. Neither paper directly addresses in-school research.

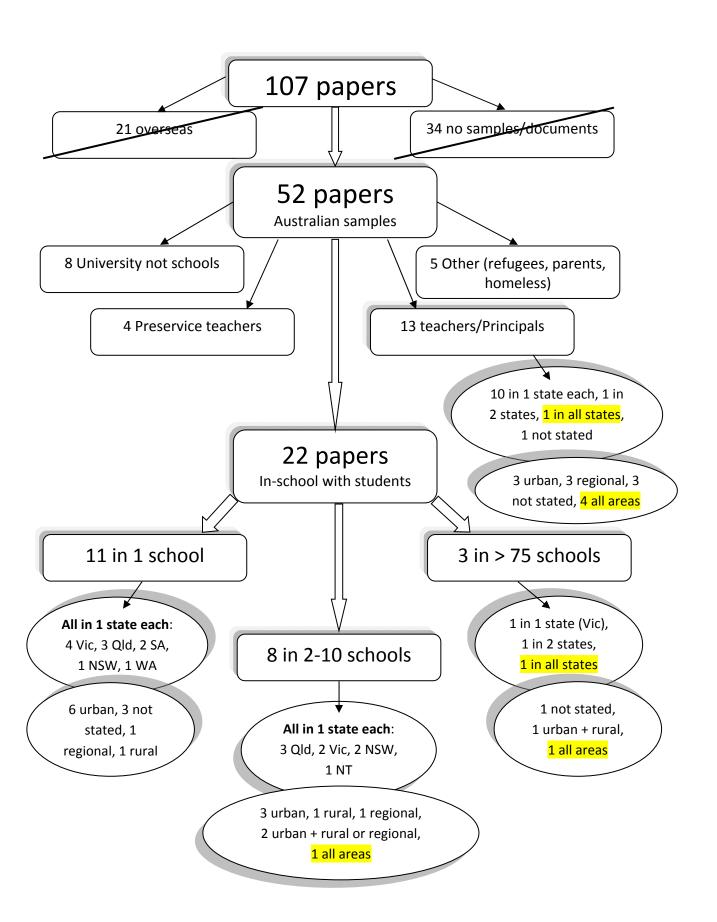


Figure 15.2: Breakdown of papers in two Australian education research journals for nature of sample and location of sampled participants.

The only document located that discussed barriers to research in rural and remote areas concerned the Inuit peoples (Inuit Tapiriit Kanatami and Nunavut Research Institute, 2007, pp. 2-8). This practical guide for researchers identified the following issues:

- Lack of consultation in study design
- Lack of involvement in research process
- Token or cursory inclusion of local expertise
- Lack of recognition or compensation
- Generalisation of knowledge which is actually unique to a specific Inuit group
- Appropriation of local expertise and knowledge when research is presented
- Inappropriate research methodologies
- Researcher presence only in short summer season does not yield full picture
- No tangible benefits from research to local or nearby communities
- Lack of funding for locally initiated projects
- Lack of local data ownership
- Inadequate reporting by researchers back to the local community

The guide suggests that the Inuit peoples are not anti-research, but want researchers to negotiate appropriate research partnerships with them. This process requires honesty, humility, information sharing, open communication, patience, a willingness to learn, mutual respect, supporting the local community educationally and financially by buying locally, openness to try new things and to use the local language where possible. It is my intuition that similar issues may concern Indigenous Australians, and Australian researchers may benefit from a similar guide.

Why is this geographical limitation an issue worthy of concern? The answer lies in Australia's diversity. Often seen as a land where the population is highly concentrated in the coastal capitals, in fact, 66% of the population lives in the greater capital cities, with 34% of the population living in the rest of Australia (Australian Bureau of Statistics [ABS], 2012). Thus, research conducted only in the mainstream environment of a capital city is not speaking for one third of Australia's population. Statistically, the margin *of* error refers only to error resulting from sample size, rather than other factors such as non-randomness due to location (Math, Eloquently, 2008). However, omitting one third of the population from a sample represents a large margin (or room) *for* error.

ABS data (2012) indicate that populations in the capital cities differ from the overall population. Capital cities contain a higher proportion of females, and of younger adults aged 20-44 years; specifically, 72% of Australians aged 20-25 live in capital cities. This is attributed to cities offering greater educational and employment opportunities (ABS, 2012). Thus, trends observed in research conducted only in capital cities may not reflect trends within the overall population to the same degree and yet may determine policy for everyone. State capitals themselves differ in population size, growth rates, area, services, employment rates, economies, and cultural backgrounds of residents (ABS, 2012). Trends seen in one city may not be reflective of others.

Schools and school-aged children (under 15 years) vary considerably. The Northern Territory has the highest percentage of school-aged children (particularly in Outback areas), and South Australia the lowest (ABS, 2012). Within a city, proportions can vary widely, for example, Sydney-Blacktown has one of the highest percentages of children (23%) whilst inner city Sydney has one of the lowest at 10% (ABS, 2012). The proportion of Indigenous children varies between states, cities, and school systems. All these variables indicate that researching small areas of the mainstream is likely to be a poor strategy for generating findings generalisable to the entire Australian population.

Not all research is intended to be generalised. Some qualitative research examines a few cases in depth, presenting the findings for scrutiny and the reader's own internal comparisons to their situation. This chapter does not criticise such research or its goals. However, quantitative or mixed mode research often seeks some level of generalisability for its findings, requiring a level of external validity (Trochim, 2006). External validity requires conducting research upon a fair and representative sample from the population to which generalisation is sought, but Trochim (2006) points out this is not always feasible. For example, voluntary informed consent is mandated, so if consenting volunteers are not a fair and representative sample, it is unethical to coerce people who would complete a fair sample to participate. Four common threats to external validity are differences in time, places, settings, and people. Therefore, Trochim (2006, External Validity) suggests that the best way to increase external validity is to "do your study in a variety of places, with different people and at different times" i.e. to replicate the study as much as possible. Yet there are barriers to following this seemingly simple and commonsense advice.

Specific barriers to interstate research

What barriers exist? With the limitations of the literature already described, what follows is an account of the barriers I encountered in wanting to conduct my doctoral study in different states to research a broad spread of the Australian population. Researchers in different situations may encounter other barriers not foreseen or stated here.

At the broader level are systemic barriers, largely created by states having individual control over their education systems. Table 15.1 elucidates these systemic barriers.

Table 15.1. Systemic barriers to interstate in-school research

Specific barrier	Description	Comment
Working with children checks (WWC)	Security clearances legislated and mandated in most states and territories. However, Tasmania currently lacks this legislation and ACT is working towards introducing a Working with Vulnerable People check.	Each state has different legislation and therefore its own paperwork, costs, portability, time duration for which the check is valid, and procedures for renewal. For example, costs vary between \$52 (NT for 2 years) and \$100.20 (Vic for 5 years).
State education department permissions to conduct research	Each state education department has its own extensive paperwork required to gain permission to conduct research in government schools in that state. Approval usually only granted to research that meets that state's research priorities.	Often required: Detailed research proposal, final ethics approval, certified proofs of identification for each researcher, insurance details, several forms to be completed, referee reports, personal information for each researcher for WWC check, University Research Office approval and submission.
Time	It may take 2-3 months for applications to conduct research in government schools to be processed in each state.	Schools may not be approached during this time, and yet may deny access when approached after approval is received.
Reporting requirements	Extensive reports and executive summaries are typically required to be sent to education departments and schools.	Approval may be given for limited periods such as 1 year yet it may take longer for data to be fully analysed and research to be completed.

These barriers do not all apply to intrastate research addressing the city-rural divide, although the time factor could be an issue precluding research in government schools.

Barriers applicable to both interstate margins and the city-rural divide fall under the broad brush of accessibility, of which specific examples are summarised in Table 15.2.

Table 15.2. Specific accessibility barriers to interstate and intrastate in-school research

Specific barrier	Description	Comment
Distance	The shortest road distance connecting state capital cities is between Adelaide and Melbourne at 728 kilometres. Brisbane to Perth is longest at 4,384 kilometres.	Air travel times between capital cities vary from 1-5 hours, which influences associated travel costs such as food and accommodation.
	Within most states, it is possible to travel over 1000 km to reach remote locations, for example, Perth to Wyndham is over 3000 km.	Air travel to remote locations may be less frequent and reliable than commercial jet flights between capitals.
Cost	Driving between cities has associated issues of fuel and other costs such as accommodation and meals.	Reduced with the speed of air travel, but this advantage is offset by possible need to hire a vehicle for transport to research sites.
Time	It may take 1 or more days of travel to cover the distances between locations.	As far as the research process is concerned, travel time is 'dead time'.
Accommodation	Road trips require accommodation en route whereas air travel only requires accommodation at the destination.	In rural and remote areas, accommodation may be non-existent, limited, and/or relatively expensive for services available.
Safety	Road travel brings the risk of fatigue. Medical facilities vary between locations and may be scarce or absent in remote locations.	Air travel to remote locations is usually in smaller planes, which may yield safety concerns. Accommodation in such areas is not always safe.
Lack of network	Personal networks generally do not extend over thousands of kilometres; therefore, researchers may not know anyone in remote schools.	Finding schools willing to participate in research may require cold canvassing, which can be confronting and problematic.
Cultural factors	Lack of prior participation in research may mean that schools are reluctant to become involved, not knowing what is expected. Individuals may be concerned about giving informed consent. There may be a lack of trust in someone coming from a very different context.	There may be the need for more detailed explanation of the research process. It may take time, effort, and mutual respect to gain the trust of a remote community in order to work together in the research process.

Possible solutions

These barriers are undoubtedly substantial. It is hard enough to secure research funding without adding travel costs unless the researcher can prove this is essential to the project. However, there may be some innovative solutions, presented here in a series of vignettes and discussion, addressing the barriers in Table 15.1 first and then those in Table 15.2.

Vignette 1: Working with children checkmate

When I began my doctoral research, the laws concerning WWCs were fluid, with no mandate that researchers had to hold one for each state, as is the case now. I raised the issue in my introductory email to schools, stating that I hold a Queensland Blue Card. The Principals approached were pragmatic about accepting a WWC check from another state for a short-term research project involving staff oversight of my interactions with children. More than one Principal said it was ridiculous that Australia did not have one universal WWC check to allow for interstate research and relocation of staff.

In this case, pragmatism won out but this would no longer be legal. A national WWC system would streamline the process for researchers and teaching staff, and enhance the safety and protection of children. This issue is under the consideration of a Royal Commission to which I made a submission (http://www.childabuseroyalcommission.gov.au/our-work/issues-papers/closed August 12, 2013).

As a PhD student, I lacked time and funds to apply to do research in government schools in three states. Principals of private schools were able to say yes or no quickly, consulting relevant classroom teachers to see if they were willing then responding to my request. Some had to gain permission from their system (e.g. Diocese) but that proved to be a reasonably speedy and efficient process, especially if the school clearly indicated their enthusiasm for the project. The schools assisted in promptly despatching information and consent forms to the relevant families.

Private school Principals also understood that PhDs take years, and were happy to receive an immediate impression of the data supplied by their children, with complete information to arrive years later when the project was finished. To avoid possible bias of private schools being more privileged than government schools, the MySchool website (http://www.myschool.edu.au/) enabled selection of private schools comparable to their local government schools.

Table 15.2 described barriers to both interstate and intrastate research. Some vignettes continue to refer to my own experience, whereas others postulate hypothetical potential solutions.

Vignette 2: Early retirement with a difference

Dr A is an experienced education researcher close to retirement who owns a motor home and longs to travel to Australia's remote and scenic regions. Several faculty projects would benefit from broader sampling in rural areas, so Dr A floats the idea of a travelling research position. The University is intrigued and agrees to trial it, with accommodation and food costs funded by regular salary, and extra costs comparable with those for city-based research. Dr A begins travelling and sends data back to other researchers. Time between school visits is spent analysing and publishing data collected for Dr A's own research.

In Vignette 2, the "win-win" nature of the solution is obvious: Dr A enjoys the travel, the scenery, visiting new schools and establishing partnerships. Rural schools appreciate someone taking an interest in them, and the University gains fresh data for several projects at minimum cost. In this vignette, Dr A was travelling full time, but staff taking sabbatical could be offered encouragement and incentives to consider visiting remote regions.

Vignette 3: Living the dream and still making a difference

Dr B is a retired University academic and her husband a retired school Principal. They are now 'living the dream' as 'grey nomads' and travelling full time exploring Australia in their converted bus, towing a small car for local travel at each stop. They want to keep their brains active, and Dr B is still in touch with many colleagues, one of whom expresses the need for data from rural schools for her upcoming project. Dr B and her husband jump at the chance to be involved, and negotiate visits to areas appropriate to both the research and their travel plans. They are happy to do this for minimal funding for the time spent at schools and travel in their car between their bus and the school.

During my own travels, I encountered many 'grey nomads' like Dr B and her husband who expressed great interest in my research. Many 'grey nomads' like to do some work, be it paid or voluntary, as they travel, and there are websites devoted to advertising such work (for example, http://www.greynomadsemployment.com/). It would be feasible to access an

experienced pool of people as research assistants, who would be willing to stop and administer surveys or interview students for modest financial reward.

It seems today that everything is 'online'. With the rollout of the National Broadband Network (the NBN) in Australia, including satellite and fixed wireless Internet for the most remote locations, it may be possible in the future to use digital technologies to communicate with schools. However, this may be difficult to accomplish without initial face-to-face meetings to establish contact and create partnerships. Through trialling, other education providers have found that not all schools presently have appropriate infrastructure to support online curriculum units (Science By Doing, www.science.org.au/sciencebydoing/ 1st July, 2013). This is partly because Australia as a country is not yet fully ready to embrace digital technologies in all areas. This gap will not be substantially closed before 2020 (NBN, 2013) so this is a long-term solution.

Vignette 4: A PhD on the road

My partner and I wanted to travel Australia while we were healthy enough to enjoy it, having heard many sad tales of plans cancelled due to ill health. Time and cost of this travel did not factor into my PhD research, as we wanted to get 'off the beaten track' well away from cities. My doctoral research required areas with differential access to the mass media, particularly TV channels, so during the rollout of digital TV, this meant sampling regional and rural areas. I found travelling a wonderful counterfoil to my doctoral studies – an exhilarating day exploring a museum or Uluru was followed by productive days at the computer. Being on the move often, there were only a handful of days in three years with no Internet access.

It would seem possible that other PhD students with appropriate desire, self-discipline and equipment, could emulate my travelling doctoral journey.

The mobility provided by vignettes 2-4 affords solutions to many of the barriers listed in Table 15.2: distance, cost, time, accommodation, and safety as far as possible. However, lack of networking can be a problem in terms of accessing schools in remote areas. I found no references in the literature to methods for cold canvassing schools for research. It is a technique most associated with direct selling or politics. Eager to gain ethics permission and start collecting data, I devised the technique in Vignette 5 myself, based on my years of experience in schools. However, it has much in common with techniques expounded for

sales, such as those listed on http://www.businessballs.com/cold_calling.htm (last retrieved 1st July, 2013).

Vignette 5: Cold canvassing, the power of positive presentation

Having selected a school, I phoned to find out whom I needed to approach and their preferred method of contact. Most chose email to allow the recipient time to digest the information before responding. My friendly yet business-like email introduced myself, the research project, and stated why I particularly wanted to conduct the research in their school. I clarified what was required from the school in terms of time and a suitable location for interviews, and acknowledged the need to minimise disruption. I offered some benefit to the school such as offering to talk about genetics and research. I promised a follow up phone call in a week but encouraged prior contact with any questions or comments. Links to my earlier research available free on the Internet allowed them to check my *bona fides*. In most cases, the school contacted me before the week was over.

Approaching schools with a sensible proposition, in an open and professional manner, and with a positive attitude was successful. I approached eight schools and five accepted. Those who did saw benefits for their students of being involved in the process of research, and were amazed and excited to know that schools in rural areas would at last have a voice. For most, it was the first time that their school had been asked to participate in research. All found the project that examined the influence of mass media on the science understandings of children timely and interesting, and were keen to find out the results in due course. Non-acceptance was due to understandable reasons separate from my research – the sudden resignation of the Principal, impending closure, and having agreed to host a local research project.

My main experience of the last barrier in Table 15.2 was in the lowest socioeconomic area, the last bastion of civilisation before the desert. The Principal wanted her children to be involved, realising they would learn a lot about the process of research, about questionnaires and interviews, and, given that I am a mature age student, about lifelong learning. In the interests of informed consent, the Ethics Committee's requirement was for particular paragraphs to be included in the documentation sent to parents to gain permission for their children to participate in the research. The Principal pointed out that for the parents of her children such formal language hardly aided informed consent if they were unable to understand it. Unlike the issue of interstate barriers, this issue has been researched, but with

no firm resolution to the problem to date (e.g. Kelly & Halford, 2007, and Spriggs, 2010 consider this issue in an Australian context). In my study, the Principal took it upon herself to explain the research in much plainer English in the school newsletter. Vignette 6 takes up the story.

Vignette 6: Turning the tables

On my arrival in the area, the Principal was very disappointed to tell me that no permission slips had been returned. Not one to give in easily, she invited me to the school on Friday afternoon to meet the children in person, and, more importantly, to allow them to interview me. This was very successful, with the children asking very blunt and curious questions, which I answered candidly. They were especially interested in how much I would have to write. It being a Christian school I answered "More than half the New Testament" (ArtBible, 2005-2008), a response greeted with amazement ... and more interest in their voices being featured. On Monday, eight permission slips signed by both parent and student were returned and the research commenced. During the course of conversations with the Principal, my involvement in music and particularly folk songs in various languages arose, culminating in her exacting a promise from me to visit the school again on my return journey and sing for the students. The musical journey around the world turned out to be very popular and another benefit to the school for their involvement in the research.

Vignette 6 demonstrates the positive effect of 'turning the tables' and allowing the prospective participants to interview the interviewer. It also indicates that as well as obvious benefits from involvement in research, creative thinking in terms of ways to reward the school for their participation may be worthwhile. At this point, I had not located the guide to researchers produced by the Inuit peoples described earlier, but intuitively the Principal and I had put into practice some of its recommendations.

Advantages of interstate research

Having overcome the barriers, perceived advantages to my research of sampling interstate include:

More generalisable results by easily obtaining widely different socioeconomic status
(SES) samples in different states. The sample in the largest country city (pop. 70,000),
had above average SES and all the facilities of a capital city school, thus representing
the mainstream. Samples in a mid-sized town of 15,000 lacked access to one TV

channel and were of average SES, and samples from the smallest towns (pop. 2,500-3,000) had the lowest SES (3SD or more below the Australian average) and the fewest facilities. I also covered coastal and outback communities, thus, the research encompassed both margins and mainstream.

- Comparison of media access and use in small, equally remote communities in
 different states yielded unexpected significant differences between them. Listed as
 statistically similar on the MySchool website, I anticipated pooling the results, yet
 their media usage was quite different, with the sample from outback New South
 Wales reversing several trends established from the other samples.
- I also found differences in the media usage and sources of genetics knowledge between Indigenous and non-Indigenous students. I was unable to report this data within the context of my research questions, but this comprises another marginal difference that warrants further investigation.

Implications

This research raises a number of implications for discussion. Firstly, the apparent lack of research into the issue of sampling in widely different locations is an issue itself. Why is this not being reported, discussed, and solutions sought? From an admittedly limited sample, there seems to be little impetus to research interstate and not a lot more to researching across urban, regional, and remote areas. It is possible that if the Royal Commission advocates a national working with children check the situation may improve, but only if researchers become aware of the benefits of broader sampling.

Similarly, could there be a national system for permission to research in any State's government schools? Would it be feasible to complete one lot of paperwork to be assessed in a reasonable timeframe? This would obviate the need to access only private schools, with the resultant risk of bias due to privilege.

Universities, particularly those with campuses outside metropolitan areas, could also offer active encouragement for more research of rural and remote communities, both intra- and interstate. There may be effective ways of funding such research, including but not exclusive to the ideas raised in this chapter.

As explicated in the introduction, weighting sampling almost exclusively in the mainstream may result in considerable margin for error in terms of conclusions and policies applied to all Australians. Such sampling ignores the diversity present in Australian schools. ABS data

(2003) clearly stated that the distribution of teachers mirrored that of the general population, in that 63% of teachers taught in the major cities and 34% taught outside the cities in regional, rural, and remote locations. The most recent release of schools data (ABS, 2011) did not make such a statement, but the data presented indicated little change in this regard. However, the 2011 data showed considerable differences in school types, gender of staff and student distributions, particularly in terms of Indigenous versus non-Iindigenous students, across the states and territories. Policies engineered from research in the mainstream may thus leave one third of teachers unsupported in their context. What works in one state may not work well in the next.

A case in point is the Australian curriculum. To put the scale of the problem into numerical values within just one state, a report on Queensland schools (Nayler, 2011) indicates that 25% of state primary schools (261 schools mostly in rural and remote locations) are one and two teacher schools. Such multi-age classrooms allow for rich, individualised curricula to operate, but are not supported by the national curriculum, written in the mainstream, which emphasises student attainment measured in year levels. It suits larger schools where each year level is in one or more classes separated from other year levels. Problems with the Australian curriculum are also raised with a similar conclusion by another author in this volume, Julie Hollitt. In her poignant discussion of Rita, a child encountered early in her teaching career. Hollitt makes the point that more than two decades of educational change has offered no improvement in terms of curriculum support for the marginalised Ritas in our classrooms.

This issue has international implications. Many other countries, for example, USA, UK, China, have states, provinces, or counties where education is not centralised. It is likely that similar barriers exist in those countries; perhaps international action to reduce or overcome these barriers would be effective once the problem is recognised and considered significant.

Conclusion

This chapter highlights an apparent gap in the research literature: the barriers to conducting in-school research interstate and in rural and remote regions. This seems to be an "elephant in the room" problem (unattributed British idiom) in that it exists, but to date it seems no one is acknowledging it as an issue in the literature. In the case of Australia, omitting the third of the population that lives outside capital cities from research samples represents a large margin *for* error. The problem must be widely acknowledged before definitive solutions can

be sought, but this chapter has offered some potential solutions as devised and tested during a doctoral research project.

Widespread implementation of these and other such strategies could eventually lead to hearing the voices of all Australians as equally important no matter where they live. However, this would rely on the capacity of mainstream researchers to build authentic and meaningful relationships with people living in the margins, as indicated in the guide written by the Inuit peoples (ITK and NRI, 2007). Likewise, international discussion of both the problem and putative solutions may enhance the capacity for research in other countries to apply to all parts of their populations, and even across international borders.

With the nationalisation of the Australian curriculum, it would seem timely to propose nationalisation of concomitant systems such as working with children checks and applications to conduct research in government schools. Such approaches would foster more research that better encompasses the whole of the Australian population, the mainstream, and the margins.

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