

IMPLEMENTING CHANGE TO ARREST THE DECLINE IN MODERATE TO VIGOROUS PHYSICAL ACTIVITY (MVPA) FOR ADOLESCENT GIRLS IN TWO RURAL AND REGIONAL HIGH SCHOOLS: A CASE STUDY APPROACH

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ABSTRACT

Inactivity has been linked to a range of lifestyle conditions such as hypertension, type II diabetes and cardiovascular disease (World Health Organisation, 2009). Engagement in physical activity and in sport has been consistently reported to decline as the general population ages (Telama et al., 2005). In particular, the age of adolescence has been identified as a time of decreasing physical activity most often at a greater rate than adjacent age groups (Booth et al., 1997; Trost et al., 2002; Webber et al., 2008). However, for adolescent girls, the decline in moderate to vigorous physical activity (MVPA) has been greater than their male peers specifically in New South Wales (NSW), Australia (Hardy, Okely & Booth, 2008). Physical activity and participation rates are lower in outer regional and remote areas of Australia when compared to participants living in metropolitan settings, and females in rural settings are the most inactive of all groups (AIHW, 2012: 206). Adolescent girls residing in rural contexts are emerging as being at a disadvantage when it comes to practicing healthy lifestyle choices (McKenzie et al., 2004). A lack of physical activity is one of the most modifiable risk factors related to the morbidity and mortality health outcomes of individuals (Brown et al., 2007; Warburton et al., 2006). In addition, physical and mental health is enhanced through regular physical activity, and general emotional well-being is reported to be heightened for all active age groups (Steptoe & Butler, 1996).

INTRODUCTION

It has been recommended that individuals accumulate 60 minutes of MVPA per day to ensure optimal health. The primary aim of this two-year study was to measure the effectiveness of an 18-month school-based intervention approach to arrest the decline in MVPA for adolescent girls. For this project, interventions targeted school sport, lunchtime activities and engagement with the community. Most schools applied various intervention strategies to Physical Education (PE) structure and curriculum. The project also considered the influence of the school ethos, links with the local community, and whether the intervention could result in a smaller decline in objectively measured physical activity when girls' performances were compared to that of similar students from matched control schools.

Prior studies addressing the same problem of adolescent girls' disengagement from physical activity have proposed solutions in the areas of modifying the school curriculum (Flintoff & Scratton, 2008), enhancing PE by removing unfavourable features such as fitness testing, elimination games and uniform compliance (Weber et al., 2008), and looking beyond the school setting for engagement in community-based sport and physical activity opportunities (Eime et al., 2010; Sneider & Cooper, 2011).

Introducing educational change has been described by Fullan (1993) as one of managing moral purpose and change agency. Such terms as moral purpose and agency underpin the policy documents outlining curriculum goals set by the relevant educational authorities. For example, one role of many health and physical educators is to provide students with the skills and knowledge to enact informed decisions about their health practices and to adopt a healthy lifestyle (NSW Board of Studies; 7-10 Personal Development, Health and Physical Education 2004). Change agency is an aspect of professionalism which particularly new-scheme teachers are charged with as they move from university to formal school settings (Tinning 1992).

Time allocations have been provided by the NSW Board of Studies to guide each school in developing student knowledge, skills, values and attitudes to lead a healthy and active lifestyle through the Key Learning Area (KLA) of Personal Development, Health and Physical Education (PDHPE). In addition to the PDHPE learning time, recommendations for active engagement with the curriculum have been advised for 'sport' time in both primary and secondary schools. This manifests as a socially-based approach to physical activity within a sporting context which is provided to all students. Government secondary schools in NSW are required to provide students with a minimum of two hours per week of physical activity allocated to sport and/or PE. According to decisions made at each school and resources available within the school and the community, sport time can be structured as traditional, integrated, or scattered.

When sport is delivered in the 'traditional' format - it is offered to a range of age groups, based on a particular sport or physical activity. Traditional sport is often

'supervised' by both PDHPE specialists and non-PDHPE teachers and can therefore result in diverse levels of expertise delivered to the students. Traditional sport structure usually incorporates a vertical streaming of students by sport choice with the older students (Year 10) given priority for sport choices. Then, as sport groups fill, younger students having less choice to participate in what may be the most 'popular' sport options. Traditional sport format includes at least an 80 minute session on one day of the week.

Integrated sport usually involves discrete year groups engaging in similarly structured sporting activities as in PE classes and involves PDHPE trained teachers assigned to these sport choices. The staffing arrangement provides a consistent level of teaching quality for the students. At least 80 minutes of sport is delivered.

Scattered sport occurs when different year groups are allocated a sport 'period' of 80-120 minutes. Teachers from different faculties are usually required to deliver the sport program.

There are provisions for a variety of sport models to be delivered to different age groups within the same school and the size of the school, resources and facility availability and profile of the staff often determine the type of sport structure adopted.

Addressing issues of gender and PE, Flintoff and Scraton (2001) have suggested a 'politics of equality', which accounts for the difference in students' involvement based on gender, as flowing from a politics of teachers working under the assumption that the current practice of PE is equally as acceptable for girls as it is for boys. This leads to an assumption that all that needs to be done to improve participation rates is to make the provision of sport choices a bit more 'girl-friendly'. Walby (2000, cited in Flintoff, 2008, p. 395) argues that rather than a "politics of equality or difference, we should adopt a politics of transformation". This approach poses the following kinds of questions: What kind of PE and school sport do we want for all young people, girls as well as boys? How should gender equity permeate and impact on all our practice in PE, so that all girls and boys have a quality experience? In relation to this paper, Walby's (2000) position also prompts consideration of what is the most appropriate way to view the gendered and culturated issues that surround the Girls in Sport project?

The final question is central to this paper which presents the critical friends' reflections of how the two rural schools involved in the Girls in Sport project grappled with improving the opportunities provided for adolescent girls to increase their level of physical activity. As Fullan (1993, p. 12) notes, "we need a dual approach working simultaneously on individual and institutional development".

This paper, then, describes the process of enacting change in two schools located in rural and regional NSW, Australia. To reiterate, these two schools were involved in a large-scale state-wide government school action research project designed to arrest

the decline in MVPA for girls initially in Year 8 and, then as they progressed to Year 10. As such, the regional and rural focus of this paper provides a specific lens for the examination of factors relevant to enacting 'gender-related change' in secondary schools.

CONTEXT OF INTERVENTION

The process of implementing change in two schools located in rural and regional locations in NSW was studied as part of a larger scale government school action research project involving 12 volunteer schools. The rationale for showcasing schools in rural contexts was in order to diversify the sample in terms of school culture, location, size, and sport structures. In addition, Casey et al., (2009) and Eime et al., (2010) reported that schools in rural settings shared similar challenges in developing strategies for adolescent girls to be more active. Both studies reported the high visibility of the students in highly connected rural communities presented a specific barrier which may not be evident in metropolitan contexts. Rural contexts have also been linked to disadvantage for the cardiovascular health of the general population (AIHW, 2012, p. 206) and skill and activity levels are aligned with socio-economic status and rural environments (AIHW, 2012; Booth et al., 1997).

In this paper, the analysis of processes associated with implementing change in terms of the Cawsey Framework (Anderson & Cawsey, 2009) is focused on two rural schools. These schools shared a common set of social and cultural features and concomitant challenges to the implementation of gender based change (Casey et al., 2009; Kenway & Willis, 1997). The rurality of the locations provides a context for both schools where the social demographics and cultural profiles are more aligned than divergent.

OVERVIEW OF PROJECT

In terms of the overall Girls in Sport project, there were 24 schools involved (Okely et al., 2011). Twelve were intervention and twelve were matched control schools. Matching was based on school size, sport structure and other related socio-economic and demographic factors. Funding was available from the NSW Department of Education and Communities (DEC) for each intervention school to resource the processes and equipment needed to enact a school-specific intervention and action plan. Each intervention school was assigned a 'critical friend', usually an academic from a local university, who was also named as a chief investigator on the project. Their role was to support and provide guidance to the school-based teachers who led the project. This support included: regular discussions on the progress and process of the school-based changes; providing professional development for staff in the intervention schools if requested; and, leading the data collection processes (Okely et al., 2011).

The critical friends came to the project with research expertise as pre-service teacher education academics specialising in PE. Critical friends were sensitive to the milieu

of each school and in the process of supporting schools, opportunities arose for new professional relationships to be established with the teachers. The critical friends for the schools profiled here had comparable involvement. Within the Girls in Sport project, there were multiple levels of accountability for the schools to the NSW DEC regarding progress, planning and financial expenditure.

The individual school-based intervention plans were developed to promote physical activity among adolescent girls. Teachers at the schools who took on the role of 'project champion' worked with both the critical friends and the NSW DEC project leader to formulate an action plan based on the data from the school that would provide a way for the school to individually address the challenge of arresting the decline in MVPA by the target group. Specifically, the schools were provided with pre-intervention opportunities to understand the bigger issues inherent in the project; brainstorm ideas for possible changes in their school to address concerns; and gain feedback from critical friends and health and gender intervention experts. Overall, school staff members were advised to consider their intervention strategies as part of an iterative process and 'to expect that their first ideas may not get it right' and to remain data driven and evaluative in their action research cycles and processes.

Procedures

The NSW DEC announced a tender for tertiary institutions to provide expressions of interest in involvement in an action research project focused on increasing the MVPA of adolescent girls. In addition, expressions of interest were also called for schools to be involved in the project. Of the 27 interested schools, 24 were accepted into the project. These 24 government schools were spread across four regions in NSW, Australia and included schools with diverse profiles of socio-economic status, from urban and rural settings and with differing PE and sport structures. Selection of schools was based on the matching of 12 control to 12 intervention schools on variables of school enrolment, school structure (i.e., central and secondary), socio-economic status, and existing sport/PDHPE organisation structures.

Data collection

The data included in the case study results were gleaned from a range of sources, including semi-structured interviews with PDHPE staff, non-PDHPE staff, school executives, Year 8 girls and Year 8 boys during the initial stages of the project and half way through the project. In addition, the critical friends were in regular contact with the project champions in each school and school changes and processes were documented regularly in order to be presented at monthly meetings of the Girls in Sport team. Teachers were also expected to present on their progress to the other intervention schools during a two-day seminar. Data were mostly collected and recorded by the project research assistant. Important contextual data were also collected by the critical friends for later integration into the diverse intervention strategies suggested for each school.

CONCEPTUAL FRAMEWORK

The conceptual framework used to analyse data in this paper is based on the hybrid model posed by Anderson and Cawsey (2009, pp. 119-120). This framework was used to gauge the success of change in schools in terms of the degree to which the schools adopted and embraced gender-based change in their schools. As such, the schools are profiled across six criteria based on the degree to which they moved from their initial position to one of sustained change. The six criteria applied to each school's intervention program focus on the extent to which:

- issues management moved to ideas management;
- activity and structure moved to strategy and processes to values;
- making change in practice moved to making change with people;
- initiating (outside - in), to sustaining (inside - out);
- imposed (regulated) to embedded (educated); and,
- the project outcomes were transcended to become valued student learning outcomes.

(Adapted from Anderson & Cawsey, 2009, pp. 119-120)

This model was presented at the Girls in Sport Colloquium, towards the end of the project. There is no one place where all of these factors of the model have been published (to the knowledge of the authors) however, this model does provide a cogent approach to the issues surrounding intervention-based change and the multiple processes and issues relevant to sustainable change.

The Cawsey framework was developed from various sources of school-based leadership and professional practice (Anderson & Cawsey, 2009, pp. 66-69). As such, the model is designed to frame the introduction of new leadership and assist in specifying the impact that the project (in this case, gender change for girls) would have on a culture of inclusive leadership development. As Cawsey (2009, p. 68) notes, this model is not static but emphasises the concept of an interaction between the levels of practice, strategy and ideas or values which can be applied to almost any setting. As this is a hybrid model from some elements listed from the original schema and other items added at a later time, an original model is not available in other forms from prior publication. As such, elements are applied in this research at the discretion of the authors.

The appeal of this model is that it may be capable of detecting more fine-grained elements of the change criteria. However, the struggle with the model is its hybrid nature which adds to the complexity but runs the danger of being misrepresented.

The authors of this paper remain in full grappling mode with the intended definitions of each of the components of the model and even more challenged with describing, defining and then applying the model to the Girls in Sport project. It is

noteworthy that within the phases of the Girls in Sport project, these criteria were available closer to the near completion end of the action research cycle, and as such it provides a *ex-post facto* lens for the researchers to frame the degree to which the changes suggested and trialled in the schools became accepted and integrated and embedded into the practices and culture of the school community. Although the decision to employ the model has stated drawbacks, the nature of the components provided an authentic real-world framework within which to compare and contrast the change process for the schools involved. For these reasons, the decision was made to employ it for this paper.

The term 'issues management' is used to refer to how the innovation (what was changed in the school) moved from what could be seen as 'problematizing' an area of education to being identified as the 'idea' that was implemented in order to address the challenge. In this paper, the *issue* of importance was girls' decline in engagement with physical activity and the degree to which that occurred both in terms of movement intensity and social engagement.

For the purpose of documenting the process of change in this paper, intervention schools located in rural and regional settings were selected. Schools were also selected for this paper based on their size, the sport structure of the schools and the dominant 'sport culture' in the rural contexts. Presenting two cases (Yin, 2009) allows for the factors of change to be applied to the intervention schools located in rural settings. The major sections that organise the presentation of the content for each case are: demographics; key players; and the degree to which initial to sustained change was evidenced across the six criteria of Cawsey's model (Anderson & Cawsey 2009). The secondary schools were allocated the pseudonyms: Gingham and Green and all individuals' identities are protected by allocating pseudonyms.

Gingham High School: Case Study One

Gingham¹ High School is located in a rural context with access to major capital centres within 1-4 hours' drive. The population is approximately 28,000 and has an aquatic centre, skate park, playing fields and fishing opportunities. The school has a population of 568 students (285 females and 283 males) with 3% of students from Indigenous backgrounds. Many of the children attending Gingham High School are from low income families and therefore find it difficult to participate in forms of organised physical activity provided and located outside of the school which often incur financial costs. The whole school staff consists of predominantly long-term stable staff complemented by a more recent addition of younger teachers taking up permanent positions with the school. Female to male teacher ratio across the school is 60:40, however, the PDHPE staff comprises two females and five males.

¹ Pseudonym

Sport at Gingham High School is structured as an 'integrated' format for Years 7 and 8 and is taught by the PDHPE teachers at the school. Years 9 and 10 have traditional sport with competitions organised with other local schools within a short distance from this school. School sport is optional for Year 11 and if students choose to participate they are grouped with Year 10 students. All teachers in the school are expected to take sport and teachers for Year 9, 10 and 11 sports are timetabled by the sports coordinator.

Year 7 has one 'high ability' sport class and Year 9 sport classes were changed to separate-sex grouping as one initiative to the project. Year 9 girls do sport together regardless of 'ability', however, boys are grouped into 'competent' and 'reluctant' participants' classes. Time allocation for the integrated Year 8 sport program was at the beginning of the project two double periods (2 x 100 minutes) and one single period (1 x 50 minutes) per fortnight (2 weeks), in co-education classes. The key themes from the formative research interviews with the Year 8 girls were: the influence of the boys on their enjoyment of sport; the dislike of changing uniforms especially for the one hour periods; and the dominance of the curriculum by traditional male sanctioned competitive games such as touch football, soccer or hockey. The girls described a number of other physical activity interests (beyond the netball offered in the program) which were not taken into account in their sports program.

The Year 8 girls participate in co-education classes and find the boys very rough, dominating and intolerant of the diversity of the girls' abilities. Girls reported feeling that the single periods are not enough time, considering they have to change into their sports uniform and back to their school uniform in the time allocation. Year 8 students predominantly play traditional competitive games such as touch football, soccer or hockey which are often male-dominated. The only girls-orientated sport is netball and a number of the girls have other interests, which were not reflected in the sport program.

The main instigator of the Girls in Sport program at Gingham was the PDHPE teacher, Sharon, who had been at the school for 8 years. Sharon was motivated to become involved in the project due to what she saw as the girls' disengagement, evidenced by the large number of girls who regularly sat out in PE and the poor grades achieved by many of the girls. Sharon saw a huge drop off in participation in sport and physical activity as the girls progressed through high school. She also stated that, at the school, there was the perception that sport was 'not feminine' and to maintain femininity and appeal to boys, girls felt they should not be participating in sport. These concerns were shared by the executive, and the teaching staff interviewed for the project. They also referred to concerns of increased levels of obesity amongst the student population.

At the beginning of the project, poor equipment and run-down facilities were counter to the interests of the girls, further reinforcing non-engagement by the girls.

Generally, there was a lack of attractive equipment specifically for traditionally or female sanctioned sporting type of activities – netballs for example.

As the Girls in Sport co-ordinator and project champion, Sharon was supported by an all-female committee, three maths teachers, an English teacher and one PDHPE teacher. Within the first year of the project, Sharon went on maternity leave and Kate, a maths teacher, alongside Jane, a new PDHPE teacher took over the role of project champions. Jane had been the co-ordinator of the Girls in Sport project in another high school nearby which assisted a smooth transition in terms of the foundational knowledge and project consistency. Although Jane was hesitant at first, she took over the co-ordination of the project at Gingham High School.

One executive has also been involved in the project from the beginning. Kelly who is Deputy Principal and has been Acting Principal provided vital support for the project and associated changes. Kelly attended the introductory conference for the entire project and has been an ally of the Girls in Sport project at Gingham. She attends the project meetings when possible and while Kelly does not play a large role in making changes, she provides endorsement and official support.

The other committee members suggested that structural changes needed to take place in the school in order to have a greater impact on the participation and engagement of girls in physical activity. The project champion indicated that if the executive would support PE being timetabled as a block this would assist in responding to requests of the Year 8 girls and ultimately shift the girls' attitudes towards physical activity.

Profile of the Process of Change

The six criteria of the Cawsey Model are now applied to the rural school of Gingham High School. These criteria are applied from the perspective of the critical friend assigned to support the school.

Issues Management - how much has this moved to Ideas management?

Gingham High School's key players' management was focused on the 'issues as they transform or develop towards ideas'. These issues are: school ethos; status of PE and sport; and self concept.

School Ethos: Sporting success of males is highly valued as a culture of the school so those less engaged (females) are seen as not contributing to this school ethos and as such are devalued. The majority of the PE staff members are males, who spend a lot of their teaching focus on building the skills and talents of boys in order to continue to build the (male) sporting profile of the school. Male-orientated sports are the focus in PE and sport lessons, including soccer, baseball, touch football and basketball. Boys are often given a choice around activities, however, girls are rarely consulted, that is, until the school started the Girls in Sport project. While the new female PE

teacher and Girls in Sport coordinator, Jane, is aiming to change girls' attitudes towards physical activity through the introduction of girls-sanctioned activities, the school and community culture is one that is most difficult to shift. In responding to this 'issue' an 'idea' is to accommodate the difference in culture for the girls and make teachers aware of the perceptions of the girls.

Status of PE and Sport: Other teachers from different Key Learning Areas are required to 'supervise' sport. As such, these teachers are asked to work outside their area of expertise and may contribute to the view that PE and sport are a waste of time since it is not an 'intellectual' subject. Embedded in this view is the idea that teachers are accountable for learning in their KLA and they lack skills and strategies in supervising sport within the 'traditional structure'.

Self Concept: Many of the girls are concerned about what they look like when they are physically active, particularly when the boys often tease and embarrass them. Being physically active is not viewed by these girls as being feminine or attractive and therefore many avoid getting hot, sweaty, and 'ruining their hair and make-up'. With the introduction of sex segregated sport, this issue of high visibility of the girls is addressed as the boys are not participating with the girls. With the idea of minimising the exposure of girls to boys, this idea is enculturated.

Activity and Structure - how has this moved to Strategy and Processes then values?

The main change that has occurred at Gingham is the introduction of a curriculum identity termed Girls Leisure And Movement Activities (GLAMA). GLAMA is exclusively for Year 8 girls and is held during lunchtimes. This was previously run by Sharon and is now overseen by Jane. GLAMA has its own pink logo and includes female sanctioned activities such as power walking, boxing, Pilates, skipping and cheerleading, which were suggested by the Year 8 girls as their preference for sport activities. These activities were designated by staff an activity space that is segregated from the watchful eyes of the boys.

Exclusive access for Year 8 girls was soon gaining attraction from Year 7 girls. In order to be inclusive, Sharon included the Year 7 girls, which had an unintended outcome of the Year 8 girls becoming disinterested in the lunchtime program. In order to accommodate both year groups, separate days were set up for each year group and this facilitated the Year 8 girls returning to the activity.

Seasonal factors in the uptake of the GLAMA relates to the summer months as it is too hot to participate and winter has snow conditions with a lack of a warm sports uniform or climate control environments. Issues of climate control and uniform are being addressed through ideas of new facilities and warmer uniform on the agenda.

Equipment was purchased in pink colours, ostensibly to identify it as equipment belonging to girls and given the highly gendered colour it was surmised that the boys would therefore be averse to using, taking, or dominating such play equipment. Such quarantining of equipment for girls has had a positive effect on participation for the Year 8 girls, however, there may have been a conflict introduced between the boys and the girls. This conflict was evidenced by negative comments from some boys that they wanted to 'have something special for them' so they could have favourable access to equipment and facilities.

Lack of value of PE/sport and focus on standardised test results such as English Language and Literacy Assessment (ELLA) and Secondary Numeracy Assessment Programs (SNAP) have prioritised Mathematics and English scores so therefore structural changes have not been made to the PE/sport timetable to reflect the needs or views of the girls. Structural changes include a perceived need for PE to be timetabled as a 'block', which would allow more time for students to participate in sport or PE. However, due to the barriers to changing the timetable, this remains an obstacle to implementing change. In order to make sustainable changes and instill different values in these girls, whole-school approaches need to be introduced and changes in staff and community attitudes are imperative.

Making change in practice - has this moved to making change with people?

Resistance to change of practice is evident from the profile of the older male teachers resistant to the PE/sport model which has been previously unchanged for 15 years. The Girls in Sport project team has had no success in bringing any of these 'old guard' teachers into the Girls in Sport committee. Structural changes have been difficult to make without an involved executive staff member on board. While the Deputy Principal is supportive of the project, she does not play an active role in initiating changes. Most of Gingham's school staff members are older and more resistant to change. A large number of them are physically inactive themselves and are not interested in making changes in the school when it comes to PE or school sport. Male PDHPE teachers have not been engaged in this project at the rate of the female PDHPE teachers evidencing a gendered reaction regardless of KLA background.

Teacher attitudes to sport and PE are transmitted to students. Many girls have stated that they know a number of teachers who think this subject is not a priority or some are simply not confident teaching it themselves. The girls have picked up on these comments and attitudes from their teachers and many students are adopting the same ideas. Many of the male teachers are not supportive of the Girls in Sport project and feel that it is a problem with the girls themselves and therefore the school does not need to change anything. The boys at the school have also adopted a similar attitude and while they admit to bullying some of the girls, they believe that it is the girls that need to change their attitude towards school sport and PE.

Initiating (outside - in) to Sustaining (inside - out)

Initiating change has been facilitated through the structures in place with critical friends from the partner universities and the NSW DEC personnel with financial and professional influence. The critical friend working with Gingham is in regular contact with Jane (and Sharon previously) and has presented to the staff and provided professional development to some staff.

The male PE teachers, however, have remained resistant to becoming involved in the Girls in Sport project or modifying PE and sport to cater for the needs, interests and abilities of girls. Gingham has also been continuously working with another local high school in the Girls in Sport project. This has involved organising gala days and after-school activities together. However, given the barriers to implementing change of a structural level to the timetable for PE and sport, there are challenges to measure the effectiveness of change and moving to the sustaining long-term physical activity for Year 8 girls.

Imposed (regulated) to Embedded (educated)

Imposed change from the NSW DEC and the critical friends allows for support of the project champion and the Girls in Sport committee to make changes to the known barriers to participation for the Year 8 girls. The regulated reporting of the project champion and the school executive to be accountable for the funds for equipment and to resource the planning and enacting change in the school provided important leverage for the project. The extent to which these changes have been embedded in the school could be evidenced by the way the project champion was well supported in her attempts to garner support from the staff for the committee; strong take-up of the GLAMA initiative; increased number of girls taking PE as an elective subject; increase in girls participating in sport and PE; and, girls feeling that they are responded to and have taken more initiative in the committee functions.

Project outcomes to valued student learning outcomes

The Girls in Sport project is continuing to run in Gingham High School. While baseline results showed that the girls are in the 60th percentile of average MVPA, data from interviews with girls has shown that there has been a slight increase in the physical activity of previously disengaged girls. More initiatives need to be introduced as well as support from other staff members and senior executive to show sustainable change in student learning outcomes.

Overall, there is a resistance to the changes that have been formulated to assist the girls. Equipment introduced was pink in colour to enhance the high visibility of girls needs and to act as a way for the boys to be averse to dominating and purloining the equipment. Male teachers were not in the project and the older teachers saw this more as a 'girl's project' than as a school-wide intervention for all students. Challenges remain for the teachers to navigate change for the girls while

the boys and some teachers failed to support the program. Where there was high level of success this is due to the enthusiastic and transformational style of leadership shown by Jane who was highly successful in overcoming resistance to the gender-based change in Gingham High School.

Green High School: Case Study Two

Green School² is located within a diversified agricultural base, some 6-8 hours drive from major state capitals with a population of approximately 14,000 permanent residents. The town offers facilities such as an aquatic centre, skate park and 14 ovals and playing fields. The school has a population of 598 students with 16% of Indigenous background. Staff comprises 50 full time equivalent teachers with female to male ratio across the school of 60:40. Teaching staff profile includes predominantly long-term staff complemented by a more recent addition of early career teachers. PDHPE staff comprises two females and five males.

Sport has a traditional structure, that is, all of the students from Years 7 to 10 are involved in sport at the same time so a vertical streaming occurs. Students in Year 11 are provided with priority options. For sport, teachers are timetabled on by the sports coordinator and matching teacher expertise to sport offering is expected. One of the most cogent arguments about the ineffectiveness of this approach came from the staff who firstly self-reported a lack of choice, lack a skills in the conduct of their sport and the long time (weeks) of being with the same group of students.

Multiple groups in the school such as teachers, PDHPE staff and the sports organiser identified their frustration that the teachers who have the greatest depth of experience and skill in teaching sports were on the executive committee. The executive committee members did not participate in the 'taking of sport' as the weekly executive meeting is scheduled at the same time as sport. Professional development days for up-skilling staff were not attended by executive. This was noted by the PDHPE staff, sports organiser and the project champions as indicative of the level of importance they felt the executive gave to this area of learning in the school. Students' views were consistent with the teachers' comments on the desirability of sport. PE was scheduled and taught by the trained PDHPE teachers on staff.

The main instigators were two female PDHPE teachers, who were motivated to make changes that would engage the reluctant girls and change the culture of PE and sport in their school. The offer of financial resources for equipment was an important motivator to nominate their school. Funding was available for time release to work on the project and to resource the modifications. The two project champions have 20 years teaching experience cumulatively. The Girls in Sport committee took some time to be established. There was a non-PDHPE head teacher

and a non-specialised PE teacher appointed as sports organizer, both quite reluctant to enact any changes in the structure of sport. In addition, changes in staffing at the executive level of the school resulted in a lack of systematic support for the intervention.

Profile of the Process of Change

The six criteria of the Cawsey Model are now applied to the rural school of Green High School. These criteria are applied from the perspective of the critical friend assigned to support the school.

Issues Management - how much has this moved to Ideas management?

Green High School has a culture privileging the male sports performances and the male sanctioned sports. This issue marginalised the notion that female sanctioned activities and sports needed to be considered as an intervention strategy. Sport organisation was an issue for the girls, the teachers and the Girls in Sport committee members. The school executive proved to be resistant to suggested/proposed changes of more frequent turnover in sport offerings for both students and staff. Issues remain that the dominant culture of a 'focus on the masculine' – through celebration of success in sport for elite performances dominating school news and assembly agendas, positions of power in executive roles, to sports organiser from student to teaching matters – have kept issues from being managed into ideas.

The few changes that have been made have been due to great personal effort of the two female project champions. Such changes they have enacted include: conducting 'girls-only' gym activities at lunchtime; a remedial skills session in sports afternoons; and enacting survey informed suggestions for sport choice and changes. The sustainable nature of the intervention strategies was dubious because they depended on two female teachers. The ideas embedded in the project were not taken up in any overt way by other members of the PDHPE staff and the committee had a strong female representation from head teachers, librarians, and community liaison officers.

Activity and Structure - how has this moved to Strategy and Processes then values?

The activities the Year 8 girls requested were for more female sanctioned activities in PE and Sport. They requested access to 'girls-only' spaces and activities. Specifically, in every second school term, the PDHPE teachers have provided a Year 8 girls-only sport offering. This has been a structure that has proven to assist the girls feel that their voice has been heard, that the girls-only context has given them more freedom to move without feeling self-conscious, without having the equipment, play, access to the play, dominated by the boys. Such activity (content) and structure (grouping by sex or ability) provides for an initial process that has sustainability as one measure of effective change.

Sport structure has been trialed to have more changes in the term so that the ten week sessions are replaced by two five week units of sport per term. Students and non-PDHPE staff supervising sport were very positive about this initiative and lobbied for it. However, the successful two different five week sports per term has been reversed to one ten week sport allocation as it was 'too time consuming and difficult to organise' according to the sports organiser. The Girls in Sport committee was unsuccessful in garnishing executive support to maintain this specific initiative.

Making change in practice - has this moved to making change with people?

Having girls in Year 8 have their own sport time has been overwhelmingly popular. This was a consistent request by the Year 8 girls. Having a project that funds the changes has given power to the Girls in Sport committee. However, there is a backlash to the girls as the boys are now complaining that they 'get nothing out of this'. The male teachers who have already provided new football uniforms to their boys' teams have continued to covet the extra funds in the school for the Girls in Sport program. The practice of introducing sport of less duration (from ten to five weeks) has been resisted by the sports organiser (and football coach) and deeply ingrained gendered practices are continuing. Making change *with* people is difficult when people are so resistant to change. The least powerful staff members are working without sustained tangible executive support - and often the only leverage comes from NSW DEC personnel involved in the project as they are called upon to exert pressure on the executive to gain time release and basic building equipment to 'unlock' the potential of a new facility.

Initiating (outside - in) to Sustaining (inside - out)

Initiating new ways of constructing female sports, changing the thinking and assumptions of the role of women - particularly in rural and regional spaces is highly resisted. The inclusion of NSW DEC and critical friends represent change moving from *outside-to-in* providing a way for the (all female) Girls in Sport committee to transform the experience for Year 8 girls in the sport and PE learning within Green High School. The sustainability of these changes - moving from *inside to out* - is yet to be realised.

Imposed (regulated) to Embedded (educated)

The response to the Girls in Sport project appears to be shell-backed. This term is aligned with posturing to resist and outlast the requirement for change. The varied shifts in staffing at the school executive level resulted in a lack of consistent support for the project champions and a perception of disinterest in change occurring systematically within the school. Lack of communication from the executive was seen as a barrier to any embedding of the changes. Barriers to the project have been evidenced through lack of support for release time for the PDHPE teachers to work on planning and implementation phases of the project. Resistance to finishing a new

facility, which would provide climate control, security of new equipment and a girls only space, has been a key barrier to implementing girls only activities during lunchtimes. Funding from the Girls in Sport project offered welcomed benefits and provided much needed relief from their overstretched finances. Although conjecture, there is a sense of once the project is over what will be embedded in the school to continue the change? More staffing changes, infighting over funding expenditures, endorsement from the head teacher without consultation with the PDHPE staff and resistance to change in sport structure and lack of systematic support for the project and hence for the Year 8 girls are all elements of frustration and barriers to sustainable embedded change in the culture of Green High School.

As such the most power to support the changes at the school level comes from what the two female PDHPE teachers can implement in their classes, what they can motivate students to lead and sustain. Their power base comes from what the outside regulators can influence in terms of accountability and the presence of a critical friend from the local regional university. The lack of facilities, the lack of will to fix the facilities to provide teaching space for students within an inhospitable physical environment (over 40 degrees C in some cases) remain one of the key barriers to implementing change. A gymnasium built, without access to PowerPoint meant that the air conditioning could not run, the music could not be played and the various equipment could not be secured as the facility was not able to be locked. Electricians and locksmiths were requested, but stalled at the school administration level. NSW DEC and critical friends rallied to support the PDHPE teachers in getting such a critical element achieved in order for other parts of the intervention program to be implemented but to no avail.

Project outcomes - to valued student learning outcomes

The project is still in progress and although the baseline data shows that the Year 8 girls are in the 75th percentile of average of MVPA – there is little other evidence at this point to show that the outcomes of change will be reflected in the girls' student learning outcomes.

Overall for Gingham High School the experience of enacting gender based change to sport is one of high levels of resistance from the staff in the sports organiser and subsequent teachers at the executive level. The lack of equipment, facilities and time release all build a picture of barriers created to maintain the status quo. The experience of the project champions created personal stress and professional challenges they were ill prepared for.

DISCUSSION

From the two case studies of change in rural and regional high schools, the issue of culture within the school community has presented an interactive matrix of factors affecting change. These can be seen as confirmatory of Fullan (1993, p. 46) when he states that problems are complex and intractable. Workable powerful solutions are

hard to conceive, even harder to put into practice. Huberman (cited in Fullan 1992, p. 6) indicates that 'too many moving parts problem means that there will be unanticipated events continuously using up the time set aside for managing the innovation. The more complex the change the greater number of parts of actors, of changes required in working arrangements, curriculum components, instructional practice, training and assistant devices the greater the chance of internal turbulence'.

Both schools profiled here show that the rurality of their location adds to the resistance to imposed change in schools, particularly one that is gender-based and also situated in a male-sanctioned sporting milieu. With considerable resistance from within the school - and varied evidence of executive support inside the two schools, this important aspect of the project was evident. Changes to sport choice, sport structure, and lunchtime activities have remained within the creation and voice of the teachers and students. General resistance and sabotage has been documented by Sikes (1992, p. 47) to be more likely to come from experienced teachers who are reluctant to abandon tired methods for new ones. This challenge is reflected by Fullan (1993, p. 48) when he states that "Teachers need greater flexibility in scheduling and grouping students in order to create positive environments and innovative curricula that promote achievement for at-risk students".

Committees have predominantly comprised female staff members which have gendered the feminist approach to the project. Executives in the schools are male and do not engage in the conduct of sport and select this time that executives meet each week. This situation has frustrated the project champions. Voice from the teachers, including the sports organiser, complained that the executives did not attend the in-service on sport conducted by the critical friends and colleagues and attended two of the three staff presentations also conducted by the critical friend in liaison with the two PDHPE staff (all female). For Gingham, the school was inconsistently supported by the Principal and the committee was largely comprised of female teachers.

The problem here as Fullan (1992, p. 7) explains well, is that it takes several cycles of trial and error, of collective reflection on the process, of honing the component parts of the process, of accumulated skill in managing both the technical and social-emotional aspects of change, of choosing the appropriate level of ambition and correct pace of change, for such a capacity to take root. Given this concept, the question remains "Is this any different for schools in rural settings?" The two critical friends could suggest that the difference may reside in the conservative nature of rural communities and the resistance to change is higher in these communities. This is, in addition to the high visibility the girls experience in communities, small enough to be highly transparent across multiple contexts: school to community-based sports and private gymnasiums. As such, the degree of change at the school culture level is minimal when anecdotally compared to the schools in urban settings that were involved in this project.

This case study approach has highlighted the barriers to participation of adolescent girls within communities of high visibility, privileged male sporting culture and the resistance to change by the school executive and some teaching staff. The contraction of facilities and economic strains in resourcing facilities outside the school pushes greater emphasis back into the school as the setting for engagement in physical activity and health related fitness for adolescent girls. Social justice principles of equal access to health related outcomes by modifying risk factors through increased physical activity is central to the implications of this study for schools in rural and regional Australia. Adolescent girls located in rural settings require contextually weighted considerations and positive discrimination to address the barriers (attitudinally, culturally and socially) found in change implementation in their schools. Teachers considering enacting change in rural schools may be better prepared knowing the barriers experienced by the project champions of Gingham and Green High Schools.

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