



# Sample conclusions

## ENGINEERING EXAMPLE

### Example: conclusion of a thesis

The aims of this project were to develop a simple technique for microwave sintering of yttria zirconia, and to compare the resultant properties and microstructure with material sintered by conventional constant heating rate processes. As a result of this research, a simple technique which enables controlled microwave heating of yttria zirconia ceramics has been developed. Using this technique during constant rate heating it was found that there was an enhancement of densification during microwave sintering in comparison to conventional heating.

*reviews aim of research*

*reminds reader of main results*

A small but significant shift in the density - grain size relationship occurred during microwave sintering of 3 mol% yttria zirconia for densities below 96% TD, indicating that microwave sintering accelerates lattice diffusion more than surface and grain boundary diffusion during the initial and intermediate stages of sintering. However, the difference disappeared at higher densities once grain growth began to dominate. No shift was found in the density - grain size relationship during any stage of the sintering process when constant rate sintering of 8 mol% yttria zirconia in the microwave field was compared to conventional heating. Heating rate was not found to have a significant effect on the grain size / density relationship.

*reiterates secondary results*

*details results*

Whether there is a change in the grain size/ density relationship during microwave sintering when compared to conventional sintering is dependent on a number of other factors which affect the kinetics of diffusion and grain growth. A change in this relationship was identified for 3 mol% yttria zirconia, which has a relatively high activation energy and low driving force for grain growth, as compared to 8 mol% yttria zirconia, in which grain growth proceeds much more quickly due to low activation energy, high driving force and high grain boundary mobility. ...

*explains & interprets results*

Results of isothermal densification experiments at 1300°C also evidenced the enhancement of densification when microwave heating is used. Microwave heated samples had a significantly higher density after brief dwell times at this temperature than did conventionally heated samples subjected to the same thermal schedule. Grain size/ density relationships were similar to those found during constant rate heating. However, the low temperature enabled the microwave samples to retain a smaller grain size once densification had ceased, due to the slower rate of grain growth.

*further explains & interprets results*

Ageing experiments conducted at 1500°C showed that once densification was near completion, grain growth in 3 mol% yttria zirconia was accelerated in the microwave field, and exaggerated grain growth occurred. This resulted in a greater apparent transformability of the tetragonal phase. No significant differences in grain growth were observed

*further explains & interprets results*

## ACADEMIC LITERACY



### Example: conclusion of a thesis

between conventional and microwave heated 8 mol% yttria zirconia during ageing. The higher oxygen vacancy concentration of 8 mol% yttria zirconia does not appear to have increased the magnitude of the enhancement to densification by the microwave field.

It would appear that the effects of microwave sintering may not necessarily be the same for all ceramic materials. If the activation energy for grain growth is similar to or higher than the activation energy for densification, then it does appear to be possible for a change in the balance between densification and grain growth during sintering to occur which favours densification. Low grain boundary mobility is also advantageous in restricting grain growth during densification. However, dwell times need to be selected to avoid exaggerated grain growth.

The optimal way to take advantage of the benefits of microwave sintering for yttria zirconia ceramics would appear to be incorporation of dwell periods at temperatures in the 1200 - 1350°C range in the sintering program. This would allow high densities to be achieved, while restricting grain growth. Sintering at lower temperatures would also provide some energy savings.

*main conclusions and implications of research*

## EDUCATION EXAMPLE

### Example: conclusion of a thesis

#### **8 Main issues revisited: implications and concluding observations**

The major thrust of this thesis has been to examine the contribution that teaching practices and particular linguistic practices in physical education lessons make to the production and reproduction of cultural discourses of masculinity and femininity and how these intersect with other discourses associated with the practice of physical activity in Australian culture. Although the study was originally conceived within the parameters of ethnography, the development of a focus on the linguistic practices in the lessons necessitated a more focused approach drawing on theories that addressed the meaning-making function of language within a social and cultural context. More particularly, it required a theory or theories that linked language, consciousness and sexuality. It is with post-structuralism and particularly with feminist poststructuralist writers that these connections are most usefully made ....

The ideas of Michel Foucault have informed the structure and much of the analysis that constitutes the argument of this thesis. In particular, the notion of discourses as historically and culturally produced systems of knowledge and values has made it essential to examine the constitution of certain discourses in order to understand the meanings made possible in and through the genre of the physical education lesson. Similarly, to interpret the meaning-making behaviour of teachers and students, it has been necessary to identify those positions in discourse from which they are most likely to speak as male or female. An analysis of the media's contribution to the circulation of discourses of masculinity and femininity, of sport and physical activity, and of the intersection of the two has also been important in understanding students' and teachers' relation to the dominant discourses of the physical education lesson genre. ...

Substantial changes in what we understand as schooling are necessary to bring about radical social change. ...

*title clarifies the purpose of the conclusion – to review main ideas in previous chapters and synthesise them into a clear position*

*reviews aim of research*

*reviews key methods of data analysis and explanation*

*recommendation*



### 8.2 Physical education as a setting for the (re)production of complementarity

An analysis of the transcripts of lessons, and of open-ended interviews with teachers and students, together with observations of playground and lesson behaviour repeatedly demonstrated the ways in which the female students constructed themselves and were constructed as passive, lacking skill, strength, and enthusiasm - that is, as the antithesis of the male students who, in their behaviour and in their representations of themselves and in their representations by their teachers, were constructed as skilled, enthusiastic, tough, competitive and knowledgeable. In contrast, the female students and teachers demonstrated a greater competence and versatility in interpersonal discourses and practices. ...

Students may, and do, resist being positioned by the dominant discourses in physical education. Their resistance may take the form of avoiding participation by leaving their uniforms at home or less obviously through participating on the fringes of activities. They may also construct their own pleasure in the lesson by using the less restricted environment (compared to the classroom) to catch up on social chat with friends. ... Thus, the students' resistance does enable them to introduce a power/knowledge relation in which they have some power, but this is illusory both in terms of empowerment through the development of bodily confidence and skill and through their inevitable positioning as sexual object in the patriarchal discourses of heterosexuality on which they draw.

### 8.3 Challenging the hegemony of games

The curriculum areas of dance and gymnastics do provide opportunities for boys and girls to develop different orientations to their bodies and to each other. However, the forms of dance and games that are most likely to be taught in schools are those that lend themselves to the directed activity, skill acquisition approach. Moreover the teaching of ballroom dancing is constituted by practices and social relations which reinforce patriarchal masculinity and femininity. On the other hand, single-sex classes of jazz dance, creative dance and gymnastics can afford students the opportunities to use their bodies in ways that are not determined by comparisons with a standard, that do not rely, to the same extent, on predetermined skills and that can allow through less directed teaching methods opportunities for the development of body awareness, confidence and creativity. ... The sexuality defined in and through sports and games is far more restrictive for men than it is for women. For Australian men, according to Connell (1983), sport is "astonishingly important", in the embodiment of a patriarchal masculinity, a form of masculinity that is clearly defined and very prescriptive.

### 8.4 Women's meanings in movement?

An important motivation for the questions that have generated this thesis has been a concern to challenge the taken-for-granted practices of teachers in ways that provide a model for change. The thesis aims to provide the means by which teachers can begin to examine how their linguistic practices contribute to the production and reproduction of patriarchal masculinity. ...

The task, then, is to work towards the construction of experiences of physical activity which are pleasurable and which engage with girls' interests and needs, to explore new movement possibilities that contribute to redefinitions of individual female bodies as sites of personal power and control and which challenge patriarchal definitions of women as passive, dependent, fragile and physically incompetent.

*extends ideas in earlier section*

*Notice how the section titles are articulating the position being reiterated in this conclusion.*



## Example: conclusion of a thesis

### 8.5. Co-educational physical education

In any critique of girls' experiences in physical education, co-educational physical education must be high on the agenda. This study has demonstrated that the reproduction of patriarchal femininity and masculinity occurs in single-sex as well as mixed sex classes, however, that latter form of organisation was clearly the most overtly alienating environment for female students. ...

The evidence from this study suggests that co-educational physical education should be considered as deeply problematic. I am not arguing particularly for or against coeducational physical education, primarily, because I am not intending to propose specific practices and secondly, because I do not believe the answer lies in simply adopting one form of organisation at a school rather than the other. However, if girls experience of, and participation in, physical activity is to change the issue must be addressed at all sites of practice, including the syllabus committees, tertiary institutions, physical education faculties in schools and teachers in their interactions with students. ... The long term purpose of this study is to provide a model of analytical practice which may be developed to enable teachers more readily to reflect on their linguistic and non-linguistic practices and to take more responsibility for the ways in which their practices contributes to the positioning of students in relation to gender (but also by extension, race, class, ethnicity, physical competency and so on). However, I would also want to argue for a more reflective and critical practice on the part of lecturers in tertiary institutions and syllabus designers which takes account of their contribution to the production and reproduction of discourses which constitute embodied subjectivities in and through the practices of physical education.

*details the general recommendations, recapping one of the findings*

### 8.6 Conclusion

In addressing the issues relating to girls and physical education, physical educators must eschew an approach that regards the female students themselves as the problem and examine their own assumptions about the 'good' of physical education and sport. Physical education is an historical and cultural construction conceived primarily within a masculine discourses of sport and the human movement sciences. Such a conception fails to meet the needs of many girls and also many boys. Moreover it is likely to contribute to forms of masculinity and femininity that disadvantage girls and construct them as lacking and inadequate, uncomfortable with their bodies and turned off physical activity for life.

If we are serious about changing the experiences of girls in physical education, then the equity solution of equal access is not sufficient. Rather, what must be challenged is the model of physical education that has been developed by men, for the needs and interests of boys. As a starting point we must challenge the dominance of sports and games skills in the curriculum. The draft New South Wales Syllabus (1991) begins to do this through a conceptual approach. However, until teachers are committed to a radical rethinking of their own assumptions and ideologies and recognise the contribution their practices make to construction of gender relations, there will be little change.

*puts forward core recommendations/ position of thesis*

