



ADVANCEMENT IN SPORT COACHING AND OFFICIATING ACCREDITATION

A project undertaken in partnership between

The University of New England

and

The Australian Sports Commission

September 2001



ADVANCEMENT IN SPORT COACHING AND OFFICIATING ACCREDITATION

ISBN: 1 74013 0545

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Introduction and Executive Summary

The Sport Education Section (SES) of the Australian Sports Commission (ASC) undertakes the role of providing specific educational and training services for coaches and officials as part of its role in the Active Australia program. As such, the SES seeks to monitor the effectiveness of its products and services. With a view to this aim, the SES has commissioned research, in partnership with the University of New England, to undertake the evaluation project detailed in this report.

Specifically, issues relating to factors that help or hinder coaches and officials obtain accreditation were seen as worthy of investigation. In particular, reasons were sought to explain why the vast majority of coaches and officials remain at the lowest rung of accreditation.

This issue is highlighted by statistics supplied by the SES. As of May 2001, 89% of accredited coaches were Level 1, 10% were Level 2, and 1% were Level 3. These figures indicate a 'log jam' of coaches at the lowest level of accreditation. Corresponding statistics for officials are not as readily attainable, however, a similar pattern emerges from the limited officiating data base developed by the ASC.

Reasons for the high percentages of coaches and officials at the lowest level of accreditation are not clear. Nevertheless, some reasons have been hypothesised, and include accreditation costs, course structure, and access to courses.

With these issues in mind, the aim of this project was to determine systematically what factors were hindering or helping coaches and officials obtain accreditation. Specifically, the project addressed the following research questions:

1. What factors affect the accreditation process for coaches and officials?
2. How are accreditation factors perceived by coaches [officials]?
3. Do the perceptions of rural and city coaches [officials] differ significantly?

4. Do the perceptions of male and female coaches [officials] differ significantly?
5. Do the perceptions of coaches [officials] vary significantly between NCAS accreditation Levels 1, 2 and 3 [equivalent officiating levels]?
6. Do coaches of major and minor sports, perceive accreditation factors differently?

To address these questions, three broad procedures were followed. The first of these was to identify the factors that affect the accreditation process. This was achieved through a series of group interviews which were conducted in city and rural venues. Through this process, 39 factors were identified.

Secondly, the 39 factors were formulated into a survey questionnaire, and sent to a stratified sample of coaches and officials throughout Australia. This procedure was designed to determine the attitude of coaches and officials to each factor.

Thirdly, responses from the survey were analysed using a range of non-parametric and parametric techniques. These techniques were able to differentiate the strength of opinion related to each factor, and explore the possibility of differences between sub-groups with the research sample.

Notable findings with respect to **accreditation barriers** were:

- costs associated with accreditation courses
- specified criteria for attending accreditation courses
- the geographical location of respondents
- personal commitments (such as family and occupational responsibilities)
- the perceived difficulty gap between accreditation levels.

Notable findings with respect to **accreditation aids** were:

- face-to-face course instruction
- support from mentors
- the quality of assessors.

Given these and other findings, **recommendations** are made under two categories: recommendations for accrediting organisations, and recommendations for future research.

Recommendations for Accrediting Organisations

This report recommends that:

1. national sporting organisations examine ways of defraying the costs of accreditation courses
2. accreditation courses maintain face-to-face instruction as the preferred mode of course delivery
3. national sporting organisations incorporate information literacy into accreditation courses
4. the Australian Sports Commission consider restructuring the three tier accreditation system
5. all update courses and professional development/information sessions related to coaching and officiating be conducted within an accreditation framework
6. accreditation courses be conducted in a variety of rural regions
7. the scheduling of accreditation courses take into account the potential time pressures on accreditation candidates
8. national sporting organisations explore the possibility of formalising mentor programs for coaches and officials
9. assessment procedures be reviewed by national sporting organisations so assessment is focused toward candidate learning
10. the Australian Sports Commission and state-based departments of sport and recreation undertake to promote more fully the work of sports officials.

Recommendations for Future Research

It is recommended that:

11. in relation to accreditation factors, the perceptions of coaches and officials, who desire to progress to higher levels of accreditation, be investigated more fully
12. the Australian Sports Commission adopt a substantive theoretical learning model to underpin the NCAS and NOAS accreditation framework
13. the Australian Sports Commission conduct additional research into the perceptions of minor sports concerning accreditation factors
14. individual sports investigate the specific accreditation needs of their coaches and officials.

Chapter One

Literature Review and Background

Introduction

This chapter provides an overview of issues that affect the quality of coach and officiating accreditation. To facilitate discussion, the chapter is divided into two sections. The first section is devoted to issues relating to coach accreditation, and the second section to officiating issues. It needs to be noted here that literature focusing specifically on the accreditation of coaches and officials is not plentiful (particularly in the research literature), however, enough information is available to identify some general trends and infer conclusions.

COACHES

This section examines a range of issues which have an impact on the quality of coach accreditation courses, and how courses are delivered. These are: the perceptions of coaching and the status of accreditation; the role of structured support; gender issues; course structure; and the impact of technology.

Perception of coaching and the status of coach accreditation

For coaches to undertake accreditation, it would seem to be a fundamental first step for the accreditation system to have purpose and status. Without purpose and status, the question remains: why would coaches become accredited? With respect to the purpose of accreditation, Woodman (1994) offered a range of plausible suggestions. In general, these included: increased enjoyment for coaches and athletes through the benefits of good coaching; awareness of legal responsibilities and a decreased risk of litigation; an understanding of sports science and its role in good coaching; and increased confidence and competence as a coach. In addition, it was maintained that accreditation provides a benchmark for minimum coaching qualifications (Schembri, 1995).

It's this latter point that leads to the question of status; that is, does a coach gain recognition and respect by being accredited? According to Schembri (1995) and Woodman (1994), accreditation serves this requirement. Specifically, Schembri (1995, p. 52) stated, '... the Scheme [NCAS] has a sought after status ... and is increasingly seen as providing community standards for the credentialing of coaches'. Moreover, Woodman (1994, p. 7) maintained:

Accreditation will improve the status and recognition of coaches. On accreditation, coaches become members of a formally trained group that is recognised Australia wide ... Coaches gain greater recognition as professionals.

However, recent research tends to cast doubt on these claims. A report by MARS (1998) quoted accredited coaches who made a series of claims. These included that they were dissatisfied with the level of recognition, the NCAS is not well known, and the benefits of being an accredited coach were not tangible. As one coach stated (MARS, 1998, p. 35):

... the problem is that the NSAC is not well known. I mean many parents do not know that coaches of their children are accredited. In fact the parents do not even ask. This problem is an important issue, as public awareness of the NCAS has to be gained before respect for NCAS coaches can be gained.

Similarly, in a survey of coaches in the Australian Capital Territory, White and Harmer (2000) reported that 80% of coaches surveyed were unsatisfied with the level of recognition they received in their coaching role. While the authors make no claim concerning the implications of this finding, it can be hypothesised that a lack of performance recognition may lead to possible withdrawal from the coaching role. Currently, the Australian Sports Commission is making attempts to promote coaches and the role of accreditation through the 'Thanks Coach' campaign. It is anticipated that initiatives such as this will go some way to addressing issues related to coach recognition and status (SES consultant, 2001, pers. comm., 15 March).

The Role of Structured Support

One mechanism that is cited regularly to aid the development of coaches is that of mentoring. In its most simple form, mentoring involves a 'novice' coach working with an experienced coach for a period of time. The structure of mentoring schemes ordinarily take two forms. The first is where the novice coach is assigned to a mentor, and the novice attends coaching sessions conducted by the expert coach. The second involves the novice coach working in

his/her own environment, and the mentor coach attending sessions to offer guidance and support.

The mentoring approach to coach development began to gain momentum during the 1990s, when authors such as Jones, Housner and Kornspan (1995) argued that the most effective method for developing a good coach is by assigning him/her to an 'apprenticeship' with an experienced coach. The authors claimed that the inexperienced coach will get first hand knowledge of how the expert coach reacts in different types of planning, practice and game situations.

The notion of some form of apprenticeship training was similarly advocated by Launder (1994). He argued that an apprenticeship is important for coaches at all levels, because no matter how effective an accreditation course may be, they cannot alone provide a real understanding of the nature of coaching. This latter point supported earlier research from the USA by Gould, Giannini, Krane and Hodge (1990, p. 341), who found:

... the coaches indicated that their coaching styles were most influenced by experience and by observing successful coaches, and least influenced by reading coaching books and journals and taking courses.

While this statement may say more about the quality of coach education courses in the USA than it does about the benefits of mentoring, the perceived benefits of mentoring cannot be dismissed.

The need for mentoring is further highlighted by the claim from Launder (1994, p. 91) that, 'it seems likely that many novice coaches in Australia have never been coached themselves or even participated in the sport they wish to coach'. Clearly, if this statement is correct, support structures need to be implemented to aid the coach in the field. This form of support was also advocated by Goldsmith (1998), who argued that it is essential for effective coach education programs to be coordinated between course instructors and field personnel (such as development officers, regional directors of coaching). Goldsmith noted that it is the field personnel who have the opportunity to follow up coach education programs and 'assist the coach in implementing change by influencing the culture of the coaching environment' (p. 5).

Although discussion thus far has referred to 'novice' coaches, and the inference that these coaches are beginning coaches, the term 'novice' can also be applied to practising coaches who are taking the next step to higher levels of coaching. For example, a coach may be very

experienced at coaching elite children in talent development squads. However, such a coach may be a 'novice' at working with older elite athletes where success is defined by winning (ie professional athletes). Clearly, the coach is a 'novice' in this latter environment, and would benefit from working with experienced and successful coaches of professional athletes.

The final point that needs to be made here relates to the selection of mentor coaches – an important prerequisite to the success of any mentor program. Sporting organisations that implement mentor programs should be cognisant of the fact that coaching *experience* does not necessarily equate to coaching *quality*. Rutt Leas and Chi (1993) pointed out that it is a commonly observed fact that people can coach for many years, but never appear to learn much from their experience. With this salient point in mind, a first step for the introduction of mentor programs should be the careful selection of mentors who have the coaching qualities from which a novice can benefit.

Gender Issues

For many years, coaching has been viewed predominantly as a male-dominated activity. This has occurred across many sports, and even in sports where male/female athlete ratios are relatively equal. Substantive reasons for the over representation of male coaches are not clear. However, the literature has provided some direction with reference to specific factors that impinge on female participation in coaching. From within an Australian context, two recent studies are cited which deal explicitly with issues confronting female coaches.

The first of these studies was by Fox (1999), who examined 'the problem of the lack of women coaches in sport' (p. 25). In this investigation, Fox interviewed 10 female coaches from five different sports. As a result of these interviews, numerous barriers were cited, and were grouped under four main domains. These were: social and cultural, economic, institutional, and organisational.

According to Fox (1999), the most notable barrier that existed was from within the social and cultural domain, and centred around family commitments and priorities. In addition, time pressures (from the social domain) and perceptions of a strong 'old boys club' (organisational domain) were also cited as common barriers. Other notable findings included:

- a lack of female role models

- homophobic harassment against women coaches
- the financial costs of coaching
- a lack of career pathways.

The second study that dealt with the issues facing female coaches was a report by Roffey (2000). Roffey surveyed, and provided open forums for, female coaches in five sports (hockey, netball, rowing, soccer and volleyball). Data were collected to determine, among other things, what barriers were perceived to exist that may impede the progress of females through the coaching ranks¹. Although the final findings were not dissimilar to those cited previously by Fox (1999), the standout finding cited by Roffey (2000) was the issue of time. Roffey stated:

By far the most commonly perceived barrier, mentioned by almost every individual surveyed was time. For many, coaching commitments had to take place of precedence behind work, family and playing commitments. With so many strains on time already there was relatively little that could be given to a voluntary coaching position.

Other barriers cited by Roffey (2000) included family commitments, confidence in ability, lack of remuneration, lack of role models, and the ‘old boys network’ (Roffey, 2000). Roffey concluded that when the benefits of coaching are weighed against the perceived negatives, coaching ‘is often viewed as a job that offered little reward for a lot of personal expenditure’ (p. 84).

The findings provided by Fox (1999) and Roffey (2000) begin to reveal some of the issues confronting female participation in coaching. Clearly, common barriers emerged which require attention if female participation is to improve. However, these studies did not explore the perceptions of male coaches in a similar manner. Further research needs to be conducted to determine if a notable distinction exists between genders.

Course structure

Fundamentally, the success of any accreditation structure is encompassed by issues relating to what is in the course (content), how the course is delivered (instructional processes), and how

¹ The term ‘ranks’ is not defined. It is unclear if the term refers to NCAS accreditation levels, or competitive standards (ie regional representative teams, state representative teams etc.).

learning is assessed. These three pedagogical issues are explored in the following discussion, with a particular emphasis on course content.

What is in the Course

Discussions concerning what content to include in accreditation courses are complex. The myriad diversity of content, which exists across sports, makes a definitive model difficult to agree upon. Moreover, some sports are well developed globally, resulting in a mass of information for inclusion in courses. Nevertheless, the literature has provided some ideas that inform the content domain.

The prevalence of sports science content has caused much debate. Generally, a perception exists that content related to exercise physiology, biomechanics, and other related areas has consumed too much course content (especially at the expense of the ‘art’ of coaching; for example, see Schembri, 1995). This is despite the recognition that development of the ‘art’ of coaching is of prime importance to good coaching (Freeman, 1995; Goldsmith, 1998; Launder, 1994). However, Goldsmith (1998) pointed out that if science-based material needs to be included in courses, this component should be taught by scientists. This latter point, while making sense superficially, is tempered by comments from Freeman (1995). He inferred that science-based curriculum needs to be contextually taught, otherwise specialist information will lack relevance, particularly if taught by ‘application idiots’ (p. 5)

To explore more fully the notion of coaching ‘art’ and sport-specific understanding, it is necessary to examine research into the cognitive development of coaches. Abraham and Collins (1998) maintained that coach education courses, especially at the beginning level, are too focused on giving coaches procedural knowledge at the expense of declarative knowledge. For example, during a Level 1 course, the basketball instructor may provide a plethora of dribbling drills for the candidates to use with their athletes. However, it may not be clear to candidates *why* the drills are good for developing dribbling skills.

Taking this issue of procedural and declarative knowledge further into the coaching context, coaches who observe game situations at a superficial level are displaying only procedural knowledge. This was illustrated by Abraham and Collins (1998) using an example from soccer. In this example, a midfielder misses a tackle, and the opposition go on and score. The coach may blame the tackler, and consequently prescribe tackling practice for training (the use of procedural knowledge only). Conversely, the expert coach may look more deeply

at the game situation (at the time the missed tackle occurred) and consider how possession was conceded in the first place, the role of other defensive players, and the quality of the attempted tackle (the use of and procedural and declarative knowledge).

Yet the use of declarative knowledge requires a coach to possess a good understanding of the game. As such, two questions arise. Firstly, is it fair to expect beginning coaches to have a deep understanding of the game they are intending to coach? Secondly, how do coaches obtain such understanding in the current vertical structure of coach accreditation courses? The second question is answered more easily: the current structure does not facilitate the development of deep game understanding. As such Abraham and Collins (1998) have advocated a 'breadth first' approach to accreditation (commonly referred to as a horizontal structure) where coaches are given a 'scaffolding' from which more in-depth information can be hung. This approach would necessitate coaches spending more time at the lower levels of accreditation, but the advantages to the coach, and athlete, would be far in excess of the current situation.

The first question is open to debate, although there is a perspective within the literature that such a proposition is not unreasonable (Freeman, 1995; Launder, 1994). Research by Rutt Leas and Chi (1993) illustrated how a deep understanding of a sport can be of significant benefit to the athlete. From research into the diagnostic expertise of expert and novice swimming coaches, they concluded that expert coaches clearly demonstrated a superior knowledge base as determined by three main indices: amount of knowledge; connectedness of knowledge; and, the depth of representation of knowledge. This level of knowledge was reflected in experts making more stroke findings, with the findings embedded in more reasoning chains, more clusters, and larger clusters.

In a related point, Rutt Leas and Chi (1993) cited research which showed that elite national level sport contained a significant proportion of coaches who have competed in the sports they coach. Moreover, 48% of the coaches had competed in an international team. Rutt Leas and Chi concluded that personal experience in a sport 'seems to be some way associated with achieving coaching expertise and with providing the coaching with additional insight into technical elements of performance' (p. 77). The implication of this conclusion is that playing experience adds to the coach's body of sport-specific knowledge, and provides an advantage to the development of a coach's declarative knowledge.

In summary, the research cited here would indicate that the cognitive development of coaches forms an integral part of the a successful coach's repertoire, and should not be ignored in the context of coach development. By analysing the cognitive processes of successful coaches, a clear picture emerges for national sporting organisations (NSOs) and other accreditation agencies as to the types of information to include in accreditation courses.

How the Course is Delivered

Traditionally, coach accreditation courses have been delivered in a face-to-face format, with an instructor providing all the relevant content (both theoretical and practical). More often than not, this has occurred from a centralised location. However, Goldsmith (1998) noted that the days of presenting courses in this manner are limited. This conclusion can be drawn for two main reasons. Firstly, the geographical location of Australia's population, coupled with the geographical size of Australia, make centralised courses limited. This point was reinforced by MARS (1998) who, in reference to NCAS accreditation updates, noted the "tyranny of distance" for coaches (p. 35), and the associated expense of travelling to attend such courses. MARS concluded that this aspect of coach accreditation required attention.

Secondly, emerging technologies (such as the internet) will mean many content areas normally covered in face-to face instruction can now be taught via technological mediums. While this approach to teaching is still in its relative infancy, it has wide potential to aid coaches in isolated locations (a deeper discussion on the impact of technology is provided later in this chapter).

More generally, it is argued that the presentation of courses need to be practically based. Launder (1994) maintained that courses should use practical settings to improve both the coaches' personal skill, but also the ability to analyse the demands of the sport. He continued to note that courses should make use of varied presentation methods (eg video and workshops) to facilitate interactive and individualised learning for the candidate.

Overall, it can be concluded that there is not a single 'correct' way to present courses. A plethora of techniques are at the disposal of course designers and presenters. However, an important criteria for the selection of any technique is the 'learning benefit' that is derived from the technique. For participant learning to be maximised, it is important that the pedagogical benefits of techniques are assessed, and only those modes of delivery that facilitate appropriate learning outcomes be selected.

The Role of Assessment

The issue of assessment has engaged much debate over the previous 10-15 years. This debate is not surprising, given differing philosophical perspectives on how assessment should be conducted, which skills and attributes require assessment, and how the results of assessment should be used.

In recent years, the assessment 'pendulum' has swung towards competency-based assessment. In coach accreditation, this assessment paradigm focuses on what is expected of a coach, rather than the process of learning. The paradigm has strong behavioural foundations, where assessment is based on what is observed. With specific reference to coach accreditation, Layton (1994) described the process of coach assessment based on competence as one of collecting evidence on coaching performance, and then interpreting this evidence to make a decision on the coach's ability.

A caveat to this form of assessment is ensuring the collection of adequate volumes of evidence to make substantive judgements. In an inferred way, Schembri (1995) warned against potential problems by noting that, in many instances, the practical experience requirements of courses were 'unstructured, unsupervised, and tacked onto the end of a course' (p. 55). If this is still the *modus operandi* of accreditation courses, the move to competency-based assessment may be questionable due to concerns related to the adequate collection of evidence.

Nevertheless, the competency-based approach does enable assessment to occur outside the formal course structure. According to Layton (1994), competency assessment allows candidates to gather evidence as they progress through a training program, and present the evidence for assessment when they are ready. The advantages to candidates afforded by this flexibility are difficult to quantify, but it can be concluded that any flexibility within assessment procedures will be a significant facilitator for the accreditation process.

A secondary related point worthy of discussion is the quality of assessors. Implicitly, the expertise of assessors is pivotal to legitimate performance appraisal. With this concern in mind, a number of implications arise for the selection and training of people who assess the coaching performance evidence. These are based on suggestions offered by Preston and Kennedy (1995), and include:

- assessors being expert in the field they are assessing
- assessors undertaking training in the techniques of observational assessment
- assessors gaining extensive experience in assessment, so they become expert in this function
- assessors coming together to share their standards, discuss cases, and converge on some consensus about the standards of each set of performance criteria.

Given the benefits that can be derived from effective assessment, the importance of the training and development of quality assessors should not be ignored. Fundamentally, the responsibility for improving standards lies with NSOs. They need to ensure that assessment procedures become a quality aspect of their accreditation courses, and that procedures are designed in such a way that they not only assess ability, but also act as a learning mechanism for the candidate.

In conclusion to this subsection, the financial and logistical resources of sports will play a major role in determining the content, delivery and assessment of courses. Nevertheless, consideration of the numerous factors discussed in this sub-section is essential if courses are to be designed and delivered in a manner that promotes participant engagement in meaningful learning experiences.

Technology

As the role of the coach has evolved, the requirement for coaches to stay abreast of technology has also changed. Over the years, coaches have adopted many different forms of technology and used them for varying purposes. Currently, it is common for coaches to utilise technology through performance recording devices, electronic journals, and game analysis systems (Clarke, 1999). However, even before these forms of technology became available, coaches were using technological devices (such as digital stop watches with split timing mechanisms and video) to monitor and improve athletic performance.

Yet in the last seven to ten years, there has been a major shift in the application of technology (ie the development of the internet). This medium has become the fastest growing information delivery system the world has experienced. As pointed out by Taylor (2000), it is estimated that the internet reached 50 million users in five years. This is compared with

radio, which took 38 years to reach a similar number of users, and television which took 13 years (Hayes, cited Taylor, 2000).

The rapid growth of the internet is reinforced further by its projected uptake rate. Clarke (1999) noted that Australia has a high penetration rate of PCs and households with internet access, which will increase dramatically with free internet providers entering the market. Moreover, internet access to educational institutions, government agencies, business and industry is increasing, thus providing the individual with additional access sites.

Conversely, these uptake predictions are tempered by figures supplied by MARS (1998). In a survey of NCAS coaches, MARS concluded 76% of coaches have access to a computer. Unfortunately, this conclusion was spurious, as the 76% figure was based on the addition of percentage responses from two independent questions. In reality, only 41% of coaches reported that they ‘... use a computer at the workplace or at home’ (p. 69). However, it should be noted that the MARS report was written in 1998, and based on the uptake figures provided by Taylor (2000) and Clarke (1999), the penetration rate of computer access in 2001 is probably higher than 41%.

While uptake figures can be open to question, advocates of the internet affirm the educational benefits of the medium. Wulff, Hanor and Bulik (2000) claimed that the internet provides individuals with a unique potential for rapid, immediate, synchronous or asynchronous connections to information banks, displays and deliveries of various text-based and multimedia learning materials, and links to meeting places in cyberspace.

More specifically, the internet can be utilised by coaches for a range of purposes (Clarke, 1999). These include:

- information searches on trends and new topics
- communication with colleagues and athletes
- background on competitors (teams, players, coaches)
- background on competition venues and locations, weather, transport, and accommodation
- information on products and equipment

- rules and legislative updates
- recruiting and scouting
- professional organisation membership
- distance education.

This list provided by Clarke illustrates the diversity of general internet uses for coaches. However, the use that has the most relevance to this investigation is that of coach education. With respect to this focus, Rushall (1999) mused that traditional coach education methodologies have yet to be validated as effective behaviour/knowledge change vehicles. He argued that, ‘... while education seems to be done, the retention and application of new knowledge by coaches is not obvious’. Rushall hypothesised that one reason for this ineffectiveness may be the delivery mode of the educational experience.

To improve modes of delivery, Rushall (1999) offered a variety of examples of how internet-related technologies can be utilised to facilitate learning. These included straight on-line tutorial courses, forms of structured knowledge packages, and accessing research abstracts. Rushall maintained that the application of technology, in the ways he suggested, means users can be accommodated irrespective of geographical distance. Additionally, coaches can avoid unproductive time such as travel to lecture sites, while still maintaining a ‘learning environment’. Although the veracity of this latter claim is open to debate, the broader context of the ideas forwarded by Rushall are worthy of further consideration.

To counter the persuasive arguments for on-line delivery, strong opinions have also been mounted which caution against the complete acceptance of the internet as a learning medium. Critics of the internet see the learning process being depersonalised, and maintain that on-line learning emphasises memorisation rather than synthesis and analysis (Navarro, 2000). Also, issues of access, pedagogical effectiveness, and technology compatibility need to be resolved before firm conclusions concerning the effectiveness and equity of on-line learning can be assessed.

Despite these ‘pros and cons’ of on-line learning, if the internet is to become a significant learning tool for coaches (and by implication, an aid to accreditation), it is argued that coaches need to overcome their entrenched conservatism. As pointed out by Freeman (1995),

most coaches tend to be technophobic. Freeman (1995) maintained that the ability to learn as a coach, and to improve athletic performance, depends on the ability of the coach to access, evaluate and assimilate new information on a constant basis. Freeman (1995) concluded that proper use of technology makes this possible, and allows coaches to improve more rapidly than in the past.

Given the arguments presented here by Freeman (1995), Rushall (1999) and Wulff et al (2000), coupled with the conclusion by Clarke (1999) that the internet is not a fad and is here to stay, coaches and agencies responsible for coach accreditation need to be aware of new learning technologies. The complexities of modern coaching, plus the ever increasing volume of information coaches are required to assimilate, tend to indicate that technology skills are an emerging and important prerequisite for effective coaching and coach education.

Summary

A number of issues have been raised in this section which bring into focus the accreditation process of coaches. Many of these issues are within the control of accrediting agencies such as NSOs and the Australian Sports Commission. However, it is apparent that others are a function of individual circumstance. In combination, these issues will have an impact on the accreditation process in different ways, thus providing a context for individual perceptions of the process to vary.

OFFICIALS

Although literature relating to officiating accreditation is not as extensive as for coaching, it can be assumed with some certainty that many of the issues discussed previously are also applicable to officials (ie course delivery, assessment, the application of technology, and the use of mentors). Nevertheless, three broad officiating-specific issues can be considered in tandem to the coaching discussion. These are: the effect of litigation; the relationship of officials with players and coaches, and levels of remuneration.

Officials and the Law

It has been noted that civil actions in respect to sport-related injuries are the most common type of cases in sports law (Patterson, 1995). As such, it is not inconceivable that in fulfilling their responsibilities, individual officials may expose themselves to legal action. Specifically,

sporting officials are legally, morally and ethically responsible for 'exercising reasonable care to eliminate foreseeable risks in the conduct of a game and to ensure that the game is conducted in a fair environment' (Fullger, 1994, p.13). It is not surprising therefore, that perhaps one of the most concerning issues facing officiating in the modern age is the threat of legal action.

Specifically, the surface on which athletes compete has been cited as a common cause of litigation. Examples of unsafe playing surfaces have been identified in courts of law where successful action by plaintiffs have been brought against officials for leaving broken glass on playing surfaces (Flygare, 1985), allowing athletes to use unsafe take-off boards (Weinberg & Richardson, 1990), and playing basketball on a wet floors (Murphy, 1995). Potholes, exposed wire, metal manhole covers, aluminium cans, wheel ruts and protruding pipes have also been discovered on playing surfaces. Given such circumstances, it is not improbable that serious player injury could result (Baer, 1992).

In addition, officials can be liable for failure to: remove a participant who persistently breaches the rules or uses excessive violence; enforce strictly the safety rules designed to prevent injuries; stop an event when the safety of participants is threatened by spectator violence; and enforce safety guidelines (including policies involving blood and infectious diseases). Although many of these situations may be deemed minor, irregular, or not under the jurisdiction of officials, officials should be aware of potential litigious actions, and be prudent in the administration of their responsibilities. Only recently, an English court found a rugby referee liable for injuries sustained to a player when a scrum collapsed (Stoner, 1998). The judge found there were approximately 25 scrum collapses during the match, a figure the court accepted as excessively high (evidence suggested six collapses per game more usual). As a consequence, the referee was deemed to have breached his duty of care to players in failing to maintain acceptable standards of scrummaging.

Although the litigious nature of modern society, and more specifically, in sport, may make a barrier to officiating, it is argued that the prospect of litigation actually promotes safe practices (Patterson, 1995). However, it can be asserted here that it is the responsibility of NSOs to ensure the legal implications of officiating are thoroughly understood by all officials. If this fundamental step is taken, the 'back cloud' of litigation may not seem so dark.

The Relationship of Officials with Players and Coaches

An uneasy relationship tends to exist between game participants (players and coaches) and sports officials. Historically, game participants and officials have maintained an adversarial relationship (Martin, 1996), with manifest preconceived notions about each other's role and relevance. Typically, game participants view officials as a necessary evil in sport, while many officials hold negative stereotypes of coaches, and can be cynical of players' actions. This view, according to Burke (1991), is maintained because most interaction is of an aversive or unpleasant nature.

While there is substantial documentation which has noted players and coaches physically and verbally assaulting officials (Rainey, 1994; Rainey & Duggan, 1998; Rainey & Hardy, 1999), a worrying trend has been the expectation that players and coaches be hostile toward sports officials. In a survey of Major League Baseball supporters, 62% of male respondents thought that it was acceptable for players and coaches to 'argue heatedly' with umpires, while 18% thought it was acceptable to 'yell and swear' at the umpire (Rainey, Schweickert, Granito, & Pullella, 1990, p.125). Rainey et al concluded that in large crowds, thousands of supporters accept players and coaches who are verbally hostile to officials. The type of ambivalence towards antisocial behaviour, reported by Rainey et al, was referred to as 'sanctioned violence' by Phillips (1985, p. 6). It now appears to be more accepted and common-place in modern sport, and is reflected in comments by Smith (1982, p. 36) who stated:

In most everyday life situations, no matter how angry or upset you are with someone, the mores of social responsibility require that you show some sort of consideration for the feelings of the person with whom you are dealing and somehow attempt to negotiate your differences. No such rules seemed to apply to relationships with a referee.

The inference to be drawn from this information is that the status of officiating is not high. In fact, it can be argued that officials are seen to be at the bottom of the sporting food chain. While this low level of respect is perhaps undeserved, it is a reality of sporting life and will have a strong impact on the ambitions of officials. As concluded by Knox (1998, p. 50):

In time, who will want to be a referee or umpire? Who will take the abuse, when the abuse comes from all corners? Nobody in their right mind would volunteer to be a public scapegoat.

Remuneration

Remuneration has been cited as one of the prime reasons people enter officiating (Power, 1988; Purdy & Snyder, 1985; Spice & Thompson, 1994). To illustrate this point, 23% of hockey players, surveyed by Spice and Thompson (1994) indicated that they would not take up officiating when their playing careers had finished, but may change their mind if remuneration was increased. Additionally, hockey umpires surveyed in the same study claimed that they were dissatisfied with the current pay structure. The remuneration issue was crystallised by Parkin (1995). He detailed how elite Australian Rules Football umpires received only a fraction of player salaries (approximately 10%). Given the important role officials play in the sport – particularly elite sport – such discrepancies are difficult to explain.

However, the value of increasing remuneration is debated by a number of sources. It was argued by Rokosz (1989) that higher payments do not attract necessarily a higher percentage of quality officials (although this source drew no conclusion related to the possible improved *quantity* of officials). Moreover, Power (1997) maintained that cash rewards are only effective when the individual finds officiating enjoyable, and payments equal or exceed what could be earned elsewhere (eg casual work, overtime). Some perspective is placed on the debate by Spice and Thompson (1994) who concluded that extrinsic reasons may have some impact on players entering officiating, but intrinsic reasons are the major motivating forces for the continuation of officiating duties.

Nevertheless, if NSOs are wanting to improve the number of officials entering and progressing through the officiating ranks, improved levels of remuneration may be a solution. This is particularly so when the low status of officiating in sport is acknowledged.

Summary

The literature has provided some indication of the factors that encourage and discourage the accreditation of officials. Although the literature is not extensive, when the issues discussed are linked to those of coaches (and are also viewed from an officiating perspective) a sound investigative platform can be constructed from which to launch further investigation.

CONCLUSION AND RESEARCH QUESTIONS

Information presented in the chapter has provided background on a range of diverse issues that affect the accreditation of coaches and officials. As such, a series of research questions have emerged that are worthy of further investigation. Also, issues of intrinsic interest to the Sport Education Section of the ASC are incorporated into the formulation of research questions. Accordingly, the research questions that guided this investigation are as follows (questions are written with reference to coaches, with officiating wording for each question included in square brackets):

1. What factors affect the accreditation process for coaches and officials?
2. How are accreditation factors perceived by coaches [officials]?
3. Do the perceptions of rural and city coaches [officials] differ significantly?
4. Do the perceptions of male and female coaches [officials] differ significantly?
5. Do the perceptions of coaches [officials] vary significantly between NCAS accreditation Levels 1, 2 and 3 [equivalent officiating levels]?
6. Do coaches of major and minor sports perceive accreditation factors differently?

Chapter Two

Research Methods and Design

Introduction

This chapter provides detailed descriptions of the methodology implemented in this investigation. Initial discussion defines the participants used in the study, and also addresses issues and procedures related to the research design. The development of the research instrument is explored in depth, with particular focus on the technique used to identify factors that help and hinder the accreditation process. The final section discusses techniques used to analyse data.

PARTICIPANTS

This investigation focuses predominantly on obtaining the perceptions of coaches and officials concerning factors related to accreditation. Accordingly, discussion in this section outlines how these groups are defined in the context of this investigation.

Coaches

In general terms, the role of the modern sports coach is varied. At the most basic level, coaching encompasses athlete instruction and conditioning, motivation, game analysis, strategic development and team building. Over-riding these roles are skills related to communication, ongoing education, and group/individual diplomacy.

Inherently, coaches will possess some or all of these attributes in varying degrees. However, for this investigation, coaches were defined as those people who hold current accreditation with the National Coach Accreditation Scheme at Levels, 1, 2 and 3. Coaches at the High Performance level were not included in this investigation due to the relatively small number of coaches within this sub-group ($n=11$ at May, 2001). As a caveat to this definition, it is important to note that it cannot be assumed all coaches are active.

Officials

In its broadest sense, the term ‘official’ is an all inclusive designation applied across all sports. However, different sports tend to use specific titles for those people who perform officiating duties. For example, soccer, Touch (football) and basketball use the term *referee* to describe their officials, while sports such as netball, Australian Football, baseball, softball and cricket call their officials *umpires*. In addition, sports such as diving and gymnastics refer to their officials as *judges*. Within this mix, officials assume various responsibilities including rule adjudication and performance assessment.

To provide clarity for this investigation, the term official was defined as ‘any person who controls the actual play of competition by the application of the rules and laws of the sport to make judgments in rule infringement, performance, time, and score, ie referees, judges, umpires, marshals, and stewards’ (Australian Sports Commission, 1998, pamphlet). Additionally, officials were required to be registered with the NOAS, or national/state sporting organisations, to be deemed an official in the context of this study.

RESEARCH DESIGN

This section provides an overview of the research design. Specifically, it details aspects of the conceptual framework that guided this research, and explores issues associated with the qualitative and quantitative nature of the study. Additionally, discussion in this section will also specify the procedures that were followed to answer the research questions identified at the conclusion of Chapter 1.

Conceptual Framework

In the absence of any significant theoretical framework to underpin this research, a conceptual framework was designed to guide inquiry. Essentially, the framework provides a reference point to analyse coach and officiating accreditation. Primarily, the framework can be viewed from two perspectives, that is, *structural factors* and *mitigating factors*.

Structural Factors

The primary factor in this classification is the role of National Sporting Organisations (NSOs) and the Australian Sports Commission (ASC). Firstly, the commitment to coach accreditation by NSOs is reflected in a number of indicators. These include the provision of personnel to

develop curricula and conduct accreditation courses, the allocation of physical resources and monetary funds for courses, and the explicit (and perhaps subliminal) valuing of accredited coaches and officials. As can be deduced from these examples, the attitude of NSOs to accreditation is pivotal to the success of accreditation schemes.

Tied to the commitment of NSOs are financial considerations. These can be viewed from two perspectives. Firstly, funding for many NSOs is derived, among other sources, from government grants. For example, ASC grants are provided for coaching and officiating education and training (specific examples include: the recruitment, accreditation and retention of coaches, officials, and administrators, plus special initiatives such as CAD, online strategies, and mentoring, and updating).

The second perspective relates to the allocation of financial resources within the ASC. These resources are allocated to the diverse sporting services provided by the Commission, and coach education forms only one part of the Commission's priorities. Any variation in the financial resources allocated to coach and officiating education is likely to reflect the financial position and fiscal priorities of the Commission.

Decisions made by the ASC also have an impact on the level of structural support offered by the Sport Education Section (SES). The SES is a sub-section of the ASC, with a prime focus on providing educational support for coaches, officials and administrators. Within this focus, the SES works with NSOs in developing accreditation programs and related resources. Moreover, the SES is the peak body for registering alternative accreditation agencies, such as universities, TAFEs and schools, to provide coaching and officiating general principles accreditation. As such, a symbiotic relationship exists between the ASC, NSOs and other accreditation agencies in providing quality accreditation programs to coaches and officials.

Militating Factors

No matter how good accreditation programs are in terms of content and delivery, their effectiveness will be determined by a number of other militating factors beyond the control of accreditation agencies. Primarily, the militating factors encompass individual interests, motivation, and ability. Moreover, militating factors can also include the financial circumstances of the individual, family and occupational responsibilities (and the subsequent amounts of time that can be devoted to coaching or officiating), and their geographical

isolation. In combination, militating factors can have a notable impact on how accreditation factors are perceived.

Procedures and Design of the Study

The study comprised five stages, with each stage consequential to the next. These procedures are summarised diagrammatically in Table 2.1. In the discussion following, all stages are examined, with particular attention focused on the control of possible limitations and constraints.

Table 2.1 Research procedures and related time-frame

| Procedural Stage | Time | Activity |
|--|-------------|---|
| 1. Identification of research themes | 1 week | – Liaison with SES personnel and accredited coaches and officials |
| 2. Development of survey questionnaire | 2 months | – Conduct focus group interviews – item construction – survey pilot |
| 3. Data collection: | | |
| a. Surveys | 4 weeks | – Postal distribution and collection of surveys |
| b. Interviews | 3 weeks | – Identification of appropriate respondents – Conduct interviews |
| 4. Analysis of data | 1 month | – Quantitative analysis – Qualitative analysis |
| 5. Reporting | 1 month | – Generation of report – Discussions with SES personnel |

1. Identification of research themes

In this stage, the main issues pertinent to the project were identified. This was conducted in liaison with SES consultants and accredited coaches/officials. Issues that arose from these discussions helped to provide a framework for subsequent research procedures. Also at this time, ethics approval for the conduct of the research was sought and obtained from the University of New England's Human Research Ethics Committee (see Appendix 1).

2. Development of survey questionnaire

Following the identification of research issues and themes, a series of focus group discussions were conducted. These groups were convened to determine the specific factors that help and hinder the accreditation process. At the conclusion of this process, potential factors were

sorted and edited, then placed into a draft survey (details relating to this aspect of the study can be found in the *Instrument Design* section of this chapter).

3. Data collection

The data collection process can be divided into two phases: questionnaire survey data collection, and interview data collection. Questionnaire survey data were collected via posting. Although the problems associated with this form of data collection are well documented (ie low return rates, see Cohen & Manion, 1994; Drew, Hardman, & Weaver-Hart, 1996), the disparate locations in which participants resided (ie all states and territories in Australia) suggested that postal data collection was the most viable and appropriate data collection method.

Postal addresses for coaches were obtained from the NCAS data base, and postal details for officials were accessed via the NOAS data base and national sporting organisations. A copy of the survey instrument plus a letter of transmittal (explaining the purpose of the research and procedures for returning the data, see Appendix 2), was mailed to each participant. After a two-week period, follow-up letters were mailed to encourage the return of surveys from participants who had not already done so (see Appendix 3).

Additional qualitative data were collected via phone interviews, with participants selected following analysis of survey data. Specifically, the chief investigator and SES personnel identified issues arising from the survey that required additional qualitative clarification. On the basis of this process, individual participants were targeted to comprise the interview sub-sample.

4. Analysis of data

The forms of analyses used were designed to correspond with the types of data collected. For the survey data, a range of parametric and non-parametric methods were utilised (eg percentages, means, standard deviations, Rasch Scaling and MANOVA). Qualitative interview data were analysed for common themes and issues using the NUDiST software package. More detail relating to this aspect of the study can be found in the *Data Analysis* section of this chapter.

5. Reporting

Reporting the research techniques used in this study, and related findings, was a two phase process. The first phase involved the submission of a draft report. At this stage, SES personnel were asked to comment on a range of issues relating to the report, including the report's clarity, its usefulness for national sporting organisations, and the relevance of conclusions and recommendations. The second phase involved assimilation of feedback obtained from SES personnel, and its incorporation into a final report. Submission of the final report (ie this document) to the SES concluded the reporting process.

In summary, an important feature of the research was the relationship between qualitative and quantitative techniques. Stages 1 and 2, plus elements of Stages 3 and 4, assumed qualitative characteristics, primarily due to the need for exploration of issues that were previously under investigated. The qualitative techniques followed in these stages allows the 'big picture' of accreditation to be explored, while still promoting the identification of specific points and issues.

The quantitative aspects of this investigation, that is, where the researcher can engage a number of techniques to quantify results, are apparent in elements of Stages 3 and 4. Specifically, these stages assumed a descriptive predilection. With respect to this focus, descriptive research enables the researcher to systematically describe the facts and characteristics of a given population (or area of interest) factually and accurately. In reference to this study, quantitative results allow comparisons to be made between groups (for example, coaches and officials), genders, and levels of accreditation.

INSTRUMENT DEVELOPMENT

The development of the survey questionnaire (instrument) used in this study encompassed three phases. These were the generation of survey items through focus group discussions, survey design, and survey piloting. The details of these phases are specified in the following discussion.

Focus Group Discussions

To identify the issues, factors, and concerns which surround the accreditation of officials and coaches, group interviews (commonly referred to a 'focus groups') were conducted. This

style of interview is a qualitative data-gathering technique (Fontana & Frey, 1994), and has been used over many years to explore the degree of variety, diversity, and consensus on a topic (St John, 1999). In doing so, the focus group is able to provide insight into the range and depth of opinions, ideas and beliefs about a research topic (St John, 1999).

The use of focus groups has three advantages applicable to this project. The first of these relates to a ‘cross referencing’ of opinion. Normally, each focus group will consist of individuals who possess certain characteristics in common that relate to the topic under investigation (Krueger, 1994). However, their perspectives on the topic are not always homogeneous, and diversity of responses is expected. The type of discussions that are inherent in focus groups may prompt participants to analyse notions they have not considered previously (St John, 1999). Therefore, participants can react to, and build upon, responses from other group members (Minichiello, Aroni, Timewell, & Alexander, 1995). This set of circumstances enables a ‘data rich’ environment and prevents one perspective from dominating discussion.

A second advantage of focus groups is that the researcher can probe pertinent issues with group members, particularly if a semi-structured format is used. When relevant issues are raised, the researcher can expand the discussion to others within the group to ‘flesh out’ ideas (Punch, 1998). This allows additional data to be collected that might normally not be available in one-on-one interviews.

Thirdly, and most importantly, the data collected from focus groups forms an exploratory phase that can provide specific items for subsequent survey work. As participants are selected on the basis of their familiarity with the research topic, they are able to detail valuable insights about a topic that is wide-ranging and complex. Moreover, the data is developed and expressed in a ‘real world’ context, thereby removing ambiguities and psychometric jargon (which may occur if survey development is undertaken in ‘academic’ isolation).

It is within the context of this last point that focus groups served the prime purpose for this study (ie gather information that informed the development of a detailed survey instrument¹). In accordance with recommendations provided by Carey (1995), three focus groups were conducted. Specifically, two groups were conducted in metropolitan regions (Melbourne and

¹ Aspects of survey design are explored later in this section.

Canberra) and one in a regional centre (Armidale). The composition of each focus group, with respect to sport-related characteristics, was varied. Primarily, groups consisted of participants from a range of sports, at varying accreditation levels, and from differing roles (coaches, officials, administrators). An overview of each group is provided in Table 2.2.

Table 2.2 Focus Group Composition by Venue and Sporting Role

| Venue | Sports/organisations represented | Sporting role |
|-----------|---|---|
| MELBOURNE | Basketball Soccer Netball Touch AFL Hockey Victorian Coaching & Officiating Centre | coaches (1) coaching directors (1) coaches (1), coaching directors (1) officials director (1) referee directors (1), officials (1) officials (1), umpiring directors (1) coaches (1) administrators (2) |
| CANBERRA | Cricket Gymnastics Handball/Squash/Touch Netball Basketball Rugby Union Soccer Volleyball Softball ACT Coaching and Officiating Centre Australian Sports Commission | coaches (1) coach and official(1) coaches (1) coaches (1) coaches (1) coaches (1) coaches (1) coaches (1) officials (2) coaches (2) administrators (1) administrators (1) |
| ARMIDALE | Cricket Rugby Union Swimming Soccer Netball Water Polo Rugby League | coaches (1) coaches (1) officials (1) coaches (1) coaches (1), coaching directors (1) officials (1) coaches (1), officials (1) coaches (1) coaches (1), coaching directors (1) |

This process provided the first insight into the accreditation process for this investigation. More importantly, it answered the research question: *What factors affect the accreditation process for coaches and officials?* These factors are outlined below.

1. the frequency with which accreditation courses are offered (eg once per year)
2. the time of the day or week courses are offered (eg evenings, weekends)
3. the geographical location of courses
4. specified criteria for attending courses (eg invitation only)
5. access to high standard athletes
6. support from state and regional directors of coaching/officiating

7. access to 'mentor' coaches/officials
8. access to coaching/officiating organisations
9. the need to meet specified, or unspecified, criteria (eg hourly/ seasonal requirements) before undertaking higher accreditation
10. the need to access, and use, technology (eg the internet, CD ROMS, specific technical equipment)
11. the standard of athlete you are expected to coach/officiate
12. course attendance requirements
13. length of course (ie time commitment)
14. pre-course requirements (eg readings)
15. post-course requirements (eg workbooks, hourly requirements)
16. the expense of accreditation courses (including instruction, specified texts and resource material)
17. costs for travelling to accreditation courses
18. the complexity of general principles content
19. the complexity of sport specific content
20. the difficulty 'gap' between each accreditation level
21. the presentation of course material using face-to-face instruction
22. the presentation of course material through distance education mode – text based
23. the presentation of course material through distance education mode – internet based
24. recognition of prior learning and experience
25. the quality of assessors
26. your personal rapport with assessors
27. theory assessment requirements
28. practical assessments conducted during course time
29. field assessments with athletes in your sporting environment
30. the clarity of assessment criteria (ie I know exactly what is expected to pass accreditation assessment tasks)
31. your occupational commitments (eg work hours)
32. your family commitments
33. your educational background
34. your previous playing or competitive experience
35. the level of recognition you gain, from local sporting organisations/clubs, for obtaining higher accreditation levels
36. potential financial rewards
37. the standard of your communication skills
38. the standard of your organisational skills
39. your geographical location

It can be noted from these factors that a wide range of issues emerged. These included course access, course costs, assessment, personal commitments, course content, and access to accreditation personnel and resources. Accordingly, the identification of these factors allowed instrument development to proceed, and the remaining research questions, outlined at the conclusion of Chapter 1, to be addressed.

Survey Design and Development

The data collected from the three focus groups provided a foundation for the construction of a survey questionnaire. Consequently, a draft instrument was developed, and contained four sections. The first section included background information about each respondent. As such,

this section contained forced-choice items which related to each respondent's age, demographic variables, and coaching/officiating history.

The second section of the survey was designed to assess the degree to which each item was seen to be a help or hindrance to the coaching and officiating accreditation process. All items in this section ($n=39$) were based on issues raised during focus group discussions. To aid clarity, the items were classified into four broad categories. These were *Organisational Issues*, *Course Accreditation Issues*, *Assessment Issues* and *Personal Factors*.

The degree of 'helpfulness' for each item was assessed through the implementation of a rating format that incorporated a Likert scale configuration. When measuring opinion or perception, the normal practice for Likert scales is to have a set number of response options per item. For this survey, five response options were incorporated. Additionally, all response options were allocated a numerical value from one-to-five. Each response option, accompanied by its respective numerical value, is detailed below:

| | | | | |
|------------------|---------------|-----------|----------------------|-------------------------|
| Significant Help | Moderate Help | No Effect | Moderate Obstruction | Significant Obstruction |
| ① | ② | ③ | ④ | ⑤ |

The third section was based on a series of statements ($n=18$) that have their derivation in specific issues raised by focus groups and consultants of the Australian Sports Commission. Respondents were asked to indicate their level of agreement with respect to each statement on a five point Likert scale. The five response options and respective numerical values are provided below:

| | | | | |
|----------------|------------------|-----------|---------------------|-------------------|
| Strongly Agree | Moderately Agree | Undecided | Moderately Disagree | Strongly Disagree |
| ① | ② | ③ | ④ | ⑤ |

The fourth and final section of the questionnaire contained one open-ended question. This provided an opportunity for respondents to add their own opinions and feelings about the issues under investigation. Specifically, respondents were encouraged to provide their impressions about the accreditation process. This allowed supplementary qualitative data to be collected that complemented the quantitative data from Sections 2 and 3 of the questionnaire.

Instrument Pilot

Following the initial design and construction of a draft survey, the survey was piloted to assess a number of factors, including: the clarity of instructions, the clarity of items, and the time and effort required on the part of the respondents in completing the questionnaire. Implicit in this assessment is the use of participants who are similar in knowledge and experience to the proposed sample. Consequently, a pilot sample ($n=18$) was drawn from people with coaching and officiating experience across five sports, and at varying levels of accreditation.

Each member of the pilot group met with the principal investigator on a one-on-one basis. Participants were asked to provide feedback relating to their understanding of the following issues:

- the meaning of each item. If ambiguity in meaning arose, the item was reworded until the meaning of the item was clear. Care was taken not to alter the underlying meaning of any item
- the intent and meaning of survey instructions.

As a result of these meetings, a number of changes were suggested. These related primarily to the amalgamation of some items, the rewording of others, and the addition of examples to clarify previously ambiguous items. The format of the final instrument is provided in Appendix 4¹.

SAMPLING

The selection of participants for this investigation was drawn from two groups: coaches and officials. The procedures undertaken to select the sample are specified in the following discussion.

Coaches

In conjunction with consultants from the Australian Sports Commission, it was decided that approximately 2,500 coaches would comprise the sample for this project. Specifically, a

¹ The survey example is specific to coaches. In the officiating survey, the terms 'coach', 'coaching', etc are replaced with 'official', 'officiating', etc.

decision was taken to focus on the sports that had the most accredited coaches. Consideration was also given to including sports which were team and individual based, and had a significant female representation. With these issues considered, an initial sample was drawn from the following sports: basketball, bowls, cricket, netball, rugby league, rugby union, soccer, and swimming. These eight sports represent almost 54% of all accredited coaches in Australia as at April 2001¹.

The data bases for each sport were examined, and a proportional sample was drawn from each sport and at each level of accreditation with the sports. For example, 88% of coaches were Level 1, and soccer comprised 31.5% of these coaches. However, across the sample, minor variations were made to proportional representation to allow a viable sample to Level 3 coaches to be included. As a result of this measure, the original sample size proposed was increased to 2,522.

One final alteration was made to the sample. This related to the inclusion of one ‘minor’ sport, as it was felt perspectives gained from coaches of a minor sport would enrich the final findings. The criteria for inclusion in this category was less than 100 coaches, with coaches accredited at NCAS Levels 1, 2 and 3. Specifically, fencing was chosen as it was the sport that had the most coaches ($n=62$) within the specified criteria. The inclusion of fencing increased to sample size to 2,574. A complete breakdown of the sample by sport and accreditation level is provided in Table 2.3.

Table 2.3 Proposed coaching sample by sport and accreditation level

| | | Accreditation Level | | | Total |
|------------|--------------|---------------------|-------------|------------|-------------|
| | | 1 | 2 | 3 | |
| SPORT | Basketball | 211 | 26 | 9 | 246 |
| | Bowls | 188 | 15 | 3 | 206 |
| | Cricket | 321 | 45 | 51 | 417 |
| | Netball | 268 | 14 | 12 | 294 |
| | Rugby League | 177 | 21 | 10 | 208 |
| | Rugby Union | 119 | 64 | 23 | 206 |
| | Soccer | 667 | 51 | 25 | 743 |
| | Swimming | 156 | 33 | 13 | 202 |
| | sub-total | | 2107 | 269 | 146 |
| | Fencing | 42 | 14 | 6 | 62 |
| TOTAL | | 2149 | 283 | 152 | 2584 |
| % of TOTAL | | 83 | 11 | 6 | 100 |

¹ AFL was not included in this sample, despite having the third highest number of accredited coaches, due to issues raised concerning access to their coaching data base.

As can be noted from Table 2.3, all sports had coaches in all levels of accreditation. Although some sports had small numbers in the Level 3 category, the overall sample size of the level three cohort allowed meaningful analysis to proceed.

Officials

In determining the sample size for officials, two issues were considered. The first was the relative number of officials with respect to coaches. While specific figures are difficult to obtain, there was general agreement between the chief investigator and SES personnel that there are fewer officials than coaches in Australia. Therefore, the officiating sample would not be as large as the coaching cohort. The second consideration related to gaining access to officials. As the NOAS data base is not extensive, obtaining possible participants for this investigation would necessitate negotiation with individual officiating groups within specific national sporting organisations. It was envisaged that this could be a drawn-out process, and difficult to manage from a logistical perspective. Given these two considerations, it was determined that the sample size of the officiating cohort be 500 participants.

The sports to be represented within the officiating group were sports currently held by the NOAS data base (canoeing, hockey, polocrosse, rollersport and volleyball). In addition, rugby was included due to the ARU's facilitation in providing access to its officiating data base. Overall, the mix of sports within the officiating cohort provided a balance between team/individual sports, and mass participation/minor participation sports.

The breakdown of officials, with respect to sport and accreditation level, was less methodical than that used for the coaching sample. This was primarily due to the officiating cohort being accessed from different data bases and the need to prevent any one sport dominating the cohort. Consequently, representative sub-samples of each sport were identified which attempted to provide proportional samples of officials across sports and accreditation levels. A complete overview of the officiating sample is provided in Table 2.4.

Two important issues require clarification with respect to the figures supplied in Table 2.4. Firstly, not all sports listed in the table have a unified Level 1, 2, and 3 accreditation structure. For example, rollersport has five levels, hockey has four, and rugby has three. Differences such as this give rise to concerns related to analysis (eg comparison between officiating levels). In a bid to overcome such concerns, sports which had more than three levels

Table 2.4 Proposed officiating sample by sport and accreditation level

| | | Accreditation Level | | | Total |
|--------------|-------------|---------------------|-----|----|-------|
| | | 1 | 2 | 3 | |
| SPORT | Canoeing | 29 | 7 | 0 | 36 |
| | Hockey | 186 | 20 | 6 | 212 |
| | Polocrosse | 0 | 18 | 6 | 24 |
| | Rollersport | 32 | 54 | 46 | 132 |
| | Rugby | 52 | 11 | 12 | 75 |
| | Volleyball | 0 | 15 | 6 | 21 |
| Total | | 299 | 125 | 76 | 500 |
| % of Total | | 60 | 25 | 15 | 100 |

of accreditation had levels collapsed into a three tier structure. This process, conducted in consultation with SES consultants, may be open to some inconsistencies, but was seen as the most appropriate way of providing meaningful analysis.

The second issue relates to three sports (ie canoeing, polocrosse and volleyball) not having representation at all three levels of accreditation. This circumstance is predominantly a function of the sports moving to a three tier accreditation structure, but not, as yet, accrediting officials at all three levels. While this lack of balance may appear to present concerns, sample sizes *across* each tier are acceptable.

DATA ANALYSIS

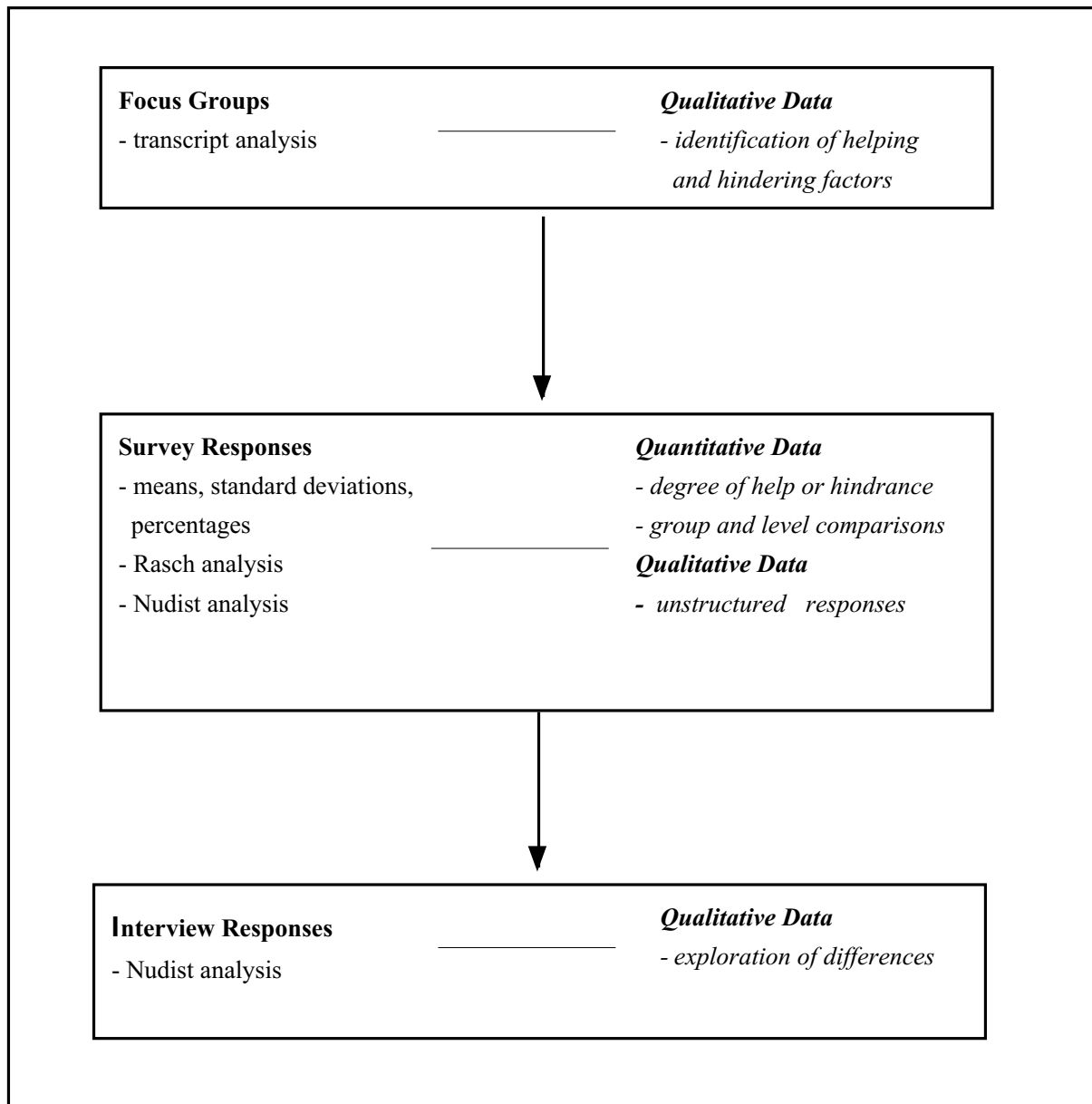
Analysis of the data collected in this study was performed using a number of different techniques. These techniques were determined by the type of data being collected (ie focus group interviews, survey data and interview data). An overview of analysis techniques, with respect to method of data collection, is provided in Figure 2.1.

Focus Groups

As noted previously, data from focus group discussions were used to generate items for the survey questionnaire. For this purpose, analysis followed procedures recommended by Krueger (1994), where data from the three focus groups were transcribed and analysed in conjunction with field notes taken by the chief investigator.

The time-frame for each focus group meeting was approximately 60 minutes. All discussion was recorded using a Sony TCM-20DV cassette recorder tape recorder, and transcribed later for purposes of analysis. Transcripts were then analysed, and common themes and items were

Figure 2.1 Data analysis plan



identified and noted. Items and ideas that were specific to an individual group were also noted. This ensured that all relevant information was assimilated into the survey design phase, and no vital areas of investigation were discarded.

Survey Data

Analysis of survey data can be considered within the context of the three types of data obtained from the questionnaire. These are specified below:

- i. The first section was designed to obtain demographic and sport-related background information about each participant. Frequency analysis (in the form of percentages), means, and standard deviations provide the most appropriate methods of analysing these data.
- ii. The second and third sections of the survey collected attitudinal data, expressed in the form of 5-point Likert scales. Traditionally, it has been common practice to analyse such data through descriptive statistics such as means and standard deviations. However, in this investigation, a more rigorous technique, known as Rasch Scaling, was used. In the context of this analysis, Rasch is able to pinpoint the location of an item or person on a scale. The position of an item is provided in the form of an *item estimate*, and the position of a person is provided in the form of a *case estimate*. Consequently, firm conclusions can be made concerning the position of an item in comparison to another, as can the opinions of individuals. Moreover, the generation of case estimates (which are produced as interval measures) allows parametric statistical techniques to be used for comparing groups of people (eg males and females).

Additionally, Rasch Scaling is able to provide an index which reflects the stability of items, or cases, on a continuum. In practical terms, this represents the likelihood of an item's or case's position on the continuum remaining constant. This capacity is important, as high stability facilitates firm conclusions when comparisons are made between items or cases. The degree of separation is expressed, in this report, as the 'separation index'. Estimates above 0.7 are considered acceptable.

When comparisons are made between groups of people, multivariate analysis of variance (MANOVA) is used. This form of analysis is used when more than one dependent variable is to be analysed (in the context of this investigation, four dependent variables are used: *Organisational Issues*, *Course Accreditation Issues*, *Assessment Issues* and *Personal Factors*). MANOVA compares the groups and determines if the mean differences between the groups on the combination of dependent variables is likely to have occurred by chance. The procedure is also able to provide univariate results for dependent variables separately. All means for MANOVA were calculated from case estimates derived from Rasch Scaling.

- iii. The fourth section of the survey provides an opportunity for participants to add their own opinions concerning the issues under investigation. As data are unstructured and qualitative, responses will be content analysed and coded. Consequently, responses can be used to complement and enrich the Likert scale data from Sections Two and Three of the questionnaire.

Interview Data

Data from the interviews were analysed using the NUDiST software package. This software facilitates the indexing, searching and theorising of unstructured and non-numerical data (such as interview data). Specifically, the software builds two inter-related databases. The first of these is the document database which stores all textual and non-textual data. Each subject's response is transcribed, and held as a separate document within this database. From this, the investigator is able to store and retrieve the text of any document, and search for words and phrases in the text of any document and automatically index these. Indexed information is stored in the second database. The index database allows the creation of categories for thinking about the data, thus facilitating idea exploration and theory validation.

CONCLUSION

Overall, the methods employed in this research are designed to facilitate exploration of the research questions outlined in Chapter One. The inclusion of coaches and officials, from various sports and across different accreditation levels, promotes an holistic perspective of the issues under investigation. This is enhanced further by the use of qualitative and quantitative methods for data collection and analysis. The adoption of the two approaches have the capacity to enrich the findings and to provide a more comprehensive picture of the accreditation process.

Chapter Three

Coaches and Officials – Perceptions of Accreditation Factors

Introduction

The results in this chapter are divided into three sections. The first section examines the nature of respondents and addresses issues related to survey response rates and participant characteristics. The next two sections provide specific detail about the perceptions of coaches and officials concerning accreditation factors.

SAMPLE PROFILE

Findings in this section explore the background of survey respondents. Initially, discussion focuses on survey response-rates, followed by the various characteristics respondents bring to the analysis. In particular, region of residence, accreditation levels and gender mix are reviewed¹.

Survey Response Rates

Overall, data were collected from 872 respondents. This response rate represents 28.4% of the potential sample. A breakdown of response rates by sub-groups (coaches and officials) is provided in Table 3.1.

Table 3.1 Survey response rates by role

| | | Potential Sample | Respondents | Percent |
|--------------|-----------|------------------|-------------|---------|
| ROLE | Coaches | 2584 | 682 | 26.4 |
| | Officials | 500 | 190 | 38.0 |
| Total | | 3084 | 872 | 28.4 |

¹ Responses to all other questions from Section 1 are detailed in Appendix 5.

Figures from Table 3.1 show acceptable response rates from officials, although coach response rate can be considered low. Reasons for the low coach response rate are not obvious, and has occurred despite follow-up letters being sent to the entire potential sample. Nevertheless, the absolute number of responses from the coaching cohort enable meaningful analysis to proceed.

The distribution of responses, by state/territory of residence, is shown in Table 3.2 Overall, the distribution is consistent with the distribution of the general population. Importantly, all states and territories are represented in the sample. Moreover, the coach and official sub-groups are represented across each state and territory.

Table 3.2 Distribution of respondents by state or territory

| | | All (n) | Coaches (n) | Officials (n) |
|------------------------|-----|--------------------|------------------------|--------------------------|
| STATE/TERRITORY | ACT | 28 | 27 | 1 |
| | NSW | 314 | 262 | 52 |
| | NT | 11 | 8 | 3 |
| | QLD | 166 | 124 | 42 |
| | SA | 73 | 45 | 28 |
| | TAS | 28 | 24 | 4 |
| | VIC | 143 | 117 | 26 |
| | WA | 78 | 47 | 31 |
| <i>No Response</i> | | 31 | 28 | 3 |
| Total | | 872 | 682 | 190 |

In addition to exploring the location of respondents by state/territory, it is important to determine the distribution of respondents according to city and rural regions. A breakdown of this analysis is given in Table 3.3

Table 3.3 Distribution of respondents by role and region

| | | All (n) | Coaches (n) | Officials (n) |
|--------------------|-------|--------------------|------------------------|--------------------------|
| REGION | City | 539 | 428 | 111 |
| | Rural | 288 | 211 | 77 |
| <i>No response</i> | | 45 | 43 | 2 |
| Total | | 872 | 682 | 190 |

To add clarity to the figures provided, the classification of respondents was made based on the following decision rules. Firstly, all respondents who indicated they lived in a capital city (including the ACT) were classified into the *City* category. Additionally, respondents residing in major regional cities¹ were classified into this category. Respondents residing in all other areas within states and territories were classified as *Rural* respondents for the purposes of this study.

The distribution of respondents with respect to gender is provided in Table 3.4. As can be seen from this table, the majority of respondents ($n=593$, 68%) were male. This finding is further reflected in the proportional representation of males and females according to coach and official sub-groups, with male representation around the 60-70% mark, and female representation around the 30-40% mark.

Table 3.4 Distribution of sample by gender

| | | All (n) | Coaches (n) | Officials (n) |
|--------------------|---------|--------------------|------------------------|--------------------------|
| GENDER | Males | 593 | 475 | 118 |
| | Females | 278 | 206 | 72 |
| <i>No response</i> | | <i>1</i> | <i>1</i> | |
| Total | | 872 | 682 | 190 |

At face value, the difference between male and female representation seems marked. However, from a statistical perspective, the absolute number of females in the sample ($n=278$) ensures meaningful group analyses can be made.

The final distribution that is important to note are the number of respondents at each level of accreditation (see Table 3.5). All respondents were classified into three levels. This classification procedure was relatively simple for coaches (primarily due to the ‘universal’ understanding of the NCAS classifications), but less straightforward for officials (the collapsing of accreditation levels for officials is specified in Chapter 2, see *Sampling*). However, the classification system adopted assumes Level 1 as the base level of accreditation, and Level 3 the highest.

The response rates across the accreditation levels mirror the pyramid structure of the

¹ Regional cities specified can be found in Question 7 of the survey (see Appendix 4).

Table 3.5 Distribution of respondents by accreditation level and role

| | | Accreditation Levels | | | Total |
|--------------------|-----------|----------------------|-----|----|-------|
| | | 1 | 2 | 3 | |
| ROLE | Coaches | 487 | 125 | 59 | 671 |
| | Officials | 106 | 40 | 34 | 180 |
| <i>No response</i> | | | | | 21 |
| Total | | 593 | 165 | 93 | 872 |

accreditation system (ie most coaches and officials at the base level of accreditation, and the least at Level 3). However, it is notable that the proportion of coaches at each level is not consistent with the NCAS data base. From the cohort in this study, 8% of coaches are Level 3. This contrasts to the 1.3% of coaches who are currently Level 3 on the NCAS data base. However, as was discussed in Chapter 2, the proportion of Level 3 coaches in the research sample was augmented to ensure a viable Level 3 sample.

Related factors

A number of other sample characteristics are worthy of examination. These relate to respondent age, income generated from their coaching or officiating role, and the gender of athletes that respondents coach or officiate.

Respondent Age

The mean age of the sample was 41 years (min=14, max=85; $sd=14$). For coaches, age statistics mirror the overall finding, with the average age of 42 years (min=15, max=85; $sd=14$). Officiating findings were slightly different, with the average age being 39 years (min=14, max=67; $sd=14$)

Income Generation

The vast majority of respondents (92%, $n=729$) did not view coaching or officiating as their primary source of income. Of these, 77% ($n=609$) did not earn any income from their respective roles.

According to respondents who viewed their coaching or officiating as a primary source of income, 43% ($n=28$) earned over \$25,000 per annum, and 19% ($n=12$) earned over \$50,000 per annum. Respondents in this group spend, on average, 31 hours a week in their coaching or officiating role.

Gender of Athletes Respondents Coach or Officiate

Respondents were asked to indicate the gender of the athlete they coached or officiated. An overview of these findings are provided in Table 3.6

Table 3.6 Gender distribution (%) of the of athlete coached or officiated

| | | All | Coaches | Officials |
|--------------------|----------------|------------|------------|------------|
| GENDER | Male | 42.2 | 46.3 | 27.4 |
| | Female | 19.2 | 19.5 | 17.9 |
| | Male or Female | 37.6 | 33.3 | 53.2 |
| <i>No response</i> | | <i>1</i> | <i>0.9</i> | <i>1.6</i> |
| Total | | 100 | 100 | 100 |

As can be seen from Table 3.6, as an overall finding, coaches and officials tend to officiate more males than females. However, when the cohort is separated into coaches and officials, officials tend to officiate both sexes on a more regular basis. This latter finding is not unexpected given the nature of officiating work (ie officials are not normally linked to one specific team or competition).

Summary

The descriptive findings reported in this section provide an overview of the nature and characteristics of the respondents for the present study. Generally, the response rates were acceptable, although the percentage of coaches who returned surveys was disappointing. However, appropriate numbers of coaches and officials were drawn from the three tiers of accreditation, and are representative of all states and territories across Australia. Similarly, adequate representation of males and females is evident.

The background characteristics of the cohort are varied. Not only do the respondents present coaches and officials from a wide range of ages, they also are involved with a mixture of athletes (with respect to sport and gender), and derive assorted financial benefits from their sport. This degree of diversity within the sample ensures a wide range of perspectives are obtained, and consequently enriches the overall findings.

COACH FINDINGS

Results in this section are based on data supplied by coaches in Section 2 of the survey questionnaire. As detailed previously (see Chapter 2, *Data Analysis*), responses were

analysed using Rasch Scaling, and item estimates used to provide a rank order of accreditation factors. The overall analysis is followed by an examination of coach responses with respect to gender, region and accreditation level. To determine if differences are statistically different, case estimates were generated using Rasch Scaling, then submitted to multivariate analysis of variance. Accordingly, analysis in this section answer the following research questions:

How are accreditation factors perceived by coaches?

Do the perceptions of male and female coaches differ significantly?

Do the perceptions of city and rural coaches differ significantly?

Do the perceptions of coaches vary significantly between NCAS accreditation levels 1, 2 and 3?

Overall Perceptions – Coaches

To provide a general picture of the relative helpfulness of accreditation factors, all coach data were analysed using Rasch Scaling (no distinctions are made with respect to gender, region, or accreditation level). From this analysis, it is evident that the position of accreditation factors, within each category, was relatively stable¹. A minor concern exists within the ‘Assessment Issues’ category (a separation index of .67), and, as such, results should be interpreted conservatively for this classification.

The rank order of accreditation factors is provided in Table 3.7², and notable findings are discussed with the context of each classification category.

Organisational Issues

1. At the upper end of the continuum, the rankings of factors 1.6, *support from state and regional directors of coaching*, 1.7, *access to ‘mentor’ coaches*, and 1.8, *access to coaching organisations*, demonstrate factors associated with support services being the most helpful. As these items can be considered forms of mentoring services, the

¹ Separation indices for each classification were: Organisational Factors (.90); Course Structure and Quality Issues (.97); Assessment Issues (.67); and, Personal Factors (.98).

² For each factor, the percentage responses rates for each response option are provided in Appendix 6.

Table 3.7 Relative ‘helpfulness’ ranking of accreditation factors – coach responses

| Item | Accreditation Factors | Rank |
|------------------------------------|--|-------------|
| Organisational Issues | | |
| 1.6 | support from state and regional directors of coaching | 1 |
| 1.8 | access to coaching organisations | 2 |
| 1.7 | access to ‘mentor’ coaches | 3 |
| 1.2 | the time of the day or week courses are offered (eg evenings, weekends) | 4 |
| 1.5 | access to high standard athletes | 5 |
| 1.10 | the need to access, and use, technology (eg the internet, CD ROMS, specific technical equipment) | 6 |
| 1.1 | the frequency with which accreditation courses are offered (eg once per year) | 7 |
| 1.3 | the geographical location of courses | 8 |
| 1.11 | the standard of athlete you are expected to coach (eg you must be a Level 3 coach to coach state players) | 9 |
| 1.9 | the need to meet specified, or unspecified, criteria (eg hourly/seasonal requirements) before undertaking higher accreditation | 10 |
| 1.4 | specified criteria for attending courses (eg invitation only) | 11 |
| Course Accreditation Issues | | |
| 2.10 | the presentation of course material using face-to-face instruction | 1 |
| 2.8 | the complexity of sport specific content (eg skill and tactical development) | 2 |
| 2.7 | the complexity of general principles content (eg planning, safety) | 3 |
| 2.3 | pre-course requirements (eg readings) | 4 |
| 2.1 | course attendance requirements | 5 |
| 2.11 | the presentation of course material through distance education mode – text based | 6 |
| 2.4 | post-course requirements (eg workbooks, hourly requirements) | 7 |
| 2.12 | the presentation of course material through distance education mode – internet based | 8 |
| 2.2 | length of course (ie time commitment) | 9 |
| 2.9 | the difficulty ‘gap’ between each accreditation level | 10 |
| 2.5 | the expense of accreditation courses (including instruction, specified texts and resource material) | 11 |
| 2.6 | costs for travelling to accreditation courses | 12 |
| Assessment Issues | | |
| 3.2 | the quality of assessors | 1 |
| 3.5 | practical assessments conducted during course time | 2 |
| 3.1 | recognition of prior learning and experience (eg previous coaching experience, other certification) | 3 |
| 3.3 | your personal rapport with assessors | 4 |
| 3.7 | the clarity of assessment criteria (ie I know exactly what is expected to pass accreditation assessment tasks) | 5 |
| 3.6 | field assessments with your athletes in your sporting environment | 6 |
| 3.4 | theory assessment requirements | 7 |
| Personal Factors | | |
| 4.8 | the standard of your organisational skills | 1 |
| 4.4 | your previous playing or competitive experience | 2 |
| 4.7 | the standard of your communication skills | 3 |
| 4.3 | your educational background | 4 |
| 4.5 | the level of recognition you gain, from local sporting organisations/clubs, for obtaining higher accreditation levels | 5 |
| 4.9 | your geographical location | 6 |
| 4.6 | potential financial rewards | 7 |
| 4.2 | your family commitments | 8 |
| 4.1 | your occupational commitments (eg work hours) | 9 |

grouping of these three items at the top of the ‘helpfulness’ ladder illustrates that respondents value the expertise of others in their professional development as coaches.

2. The high ranking of factor 1.2, *the time of the day or week courses are offered (eg evenings, weekends)*, is worthy of discussion. Its ranking demonstrates respondents value the timing of courses. Naturally, issues related to course access accompany this item, as inappropriate time selection by accreditation course coordinators has the potential to obstruct course attendance.
3. At the lower end of the continuum, issues related to course criteria are evident. The low rank given to factor 1.4, *specified criteria for attending courses (eg invitation only)*, is not surprising given the diverse, and at times arbitrary, nature of course attendance criteria. Similarly, the low ranking of factor, 1.9, *the need to meet specified, or unspecified, criteria (eg hourly/seasonal requirements) before undertaking higher accreditation*, would indicate that certain course ‘completion’ requirements are viewed as obstructive to accreditation by coaches.
4. The relatively low rankings given to factors 1.1, *the frequency with which accreditation courses are offered (eg once per year)*, and 1.3, *the geographical location of courses*, are also notable. Results suggest that accreditation courses which are geographically distant, and offered infrequently, impair the accreditation process.

Course Structure and Quality Issues

1. The highest ranked item in this category, factor 2.10, *the presentation of course material using face-to-face instruction*, shows that respondents value face-to-face instruction during accreditation courses. This position is supported by the mid-range ranking of factors 2.11, *the presentation of course material through distance education mode – text based*, and 2.12, *the presentation of course material through distance education mode – internet based*. While these latter two factors were not seen to be unhelpful, the clear differentiation between these factors, and factor 2.10 is notable.
2. The results indicate that general principles content and sport specific content are not too complex. In fact, the high rankings attributed to factors 2.8, *the complexity of sport specific content (eg skill and tactical development)*, and 2.7, *the complexity of*

general principles content (eg planning, safety), show that these factors aid the accreditation process.

3. Results surrounding the issues of pre- and post-course requirements are interesting. The high ranking given to item 2.3, *pre-course requirements (eg readings)*, indicates such requirements aid people in their accreditation. It can be hypothesised that the requirements lay the ‘ground work’ for courses, and that candidates come to courses with some understanding of the required content. However, the relatively low ranking given to item 2.4, *post-course requirements (eg workbooks, hourly requirements)*, shows these requirements are not viewed as favourably as pre-course requirements (the position of this item should also be viewed in conjunction with the low position of item 1.9, *the need to meet specified, or unspecified, criteria (eg hourly/seasonal requirements) before undertaking higher accreditation*, within the ‘Organisational Issues’ classification).
4. Factors related to accreditation cost are perceived to be the main impediment to accreditation (items 2.5 and 2.6). In particular, the ranking of item 2.6, *costs for travelling to accreditation courses*, links with the low ranking of item 1.3, *the geographical location of courses*, from the ‘Organisational Factors’ classification. Clearly, if courses are not offered in close geographical proximity to candidates, travel costs will be a likely barrier to course attendance.
5. The final factor that warrants discussion within this classification is factor 2.9, *the difficulty ‘gap’ between each accreditation level*. This factor refers specifically to the perceived difficulty in understanding the sport-specific and general principles content. Given this factor was given a low ranking, it was seen to be a hindrance in pursuing accreditation.

Assessment Issues

1. The most helpful factor in this category was item 3.2, *the quality of assessors*. However, this finding should be viewed in conjunction with the mid-ranking of item 3.3, *your personal rapport with assessors*. In combination, evidence has emerged that the professional abilities of assessors are more valued than personal interaction between assessors and their candidates.

2. The ranking of factor 3.5, *practical assessments conducted during course time*, and 3.6, *field assessments with your athletes in your sporting environment*, has major implications for the timing of candidate assessment. Given the notably high ranking of item 3.5, it can be concluded that respondents would prefer assessment to be undertaken within the formal context of accreditation courses.
3. A high ranking was also afforded to factor 3.1, *recognition of prior learning and experience (eg previous coaching experience, other certification)*. It is apparent that respondents view the recognition of relevant abilities and experiences to be an important factor when assessments are made of their suitability for accreditation. Fundamentally, appropriate recognition will ensure candidates do not have to undertake instruction or assessment in content for which they already have relevant understandings.
4. At the lower end of the continuum are factors 3.7, *the clarity of assessment criteria (ie I know exactly what is expected to pass accreditation assessment tasks)*, and 3.4, *theory assessment requirements*. With respect to item 3.7, its low ranking is of major concern given that the clarity of assessment criteria is a basic tenet of any assessment process.

For factor 3.4, the implications for NSOs are much wider. Given that theory assessments are an integral component of accreditation requirements, an issue arises for NSOs to ensure theory assessments do not become a major barrier to successful course completion. It is beyond the brief of this investigation to address this issue in depth, however, NSOs need to be aware that theory requirements were seen as the greatest assessment obstacle to accreditation.

Personal Factors

1. Respondents viewed the standard of their personal organisational and communication skills as major factors that help in undertaking accreditation (items 4.8 and 4.7). These are aspects of coaching and officiating education programs that NSOs can build upon, especially given the relevance of these skills to coaching and officiating.
2. The high ranking of item 4.4, *your previous playing or competitive experience*, is expected given that playing experience in a sport is likely to lead to a greater

understanding of game nuances (as opposed to a person who has no playing experience). The assumption is that, over time, players develop an innate ‘feel’ for the game, and that practical playing experience will aid the candidate in comprehending practical and theoretical aspects of a game.

3. Of the lower ranked items, factors seen as the greatest hindrances relate to occupational and family commitments (items 4.1 and 4.2). While this finding can be considered predictable, the implications are of note. Primarily, NSOs need to consider the nature of work and family commitments, and structure the delivery of courses in a manner that is flexible enough to accommodate candidate needs.

Gender, Regional, and Accreditation Level Differences – Coaches

To explore possible differences in the perception of accreditation factors within the coaching cohort, the responses were analysed¹ and compared for gender (male and female), region (city and rural) and accreditation level (NCAS levels 1, 2, and 3).

Gender

Analysis of male and female differences within the coach cohort revealed significant differences within the ‘Course Accreditation Issues’ classification only. No significant differences were found within any of the other three categories.

To provide meaning to this finding, responses were explored in greater detail. Specifically, means for each factor were computed for males and females, then compared across the male/female sub-groups. Factors that produced the largest mean differential can be considered to be contributing most to gender differences.

Mean scores for each factor, according to male and female sub-groups, are presented in Table 3.8 (average differences are presented in absolute terms). The means presented in this table show three factors that had an average differential of .30 or greater². These were factors 2.5, 2.6, and 2.9, and are explored in the following discussion.

¹ Technical notes detailing the procedures followed to investigate the possible existence of significant differences for the variables of Sex, Region, and Accreditation Level, can be viewed in Appendix 7.

² The demarcation point of .30 has no statistical foundation. This point was selected arbitrarily to be a starting point for discussion.

Table 3.8 Mean scores by gender for significantly different classifications

| | Accreditation Factors | | Means | |
|---|-----------------------|---------|------------|--|
| | Males | Females | Difference | |
| Course Accreditation Issues | | | | |
| 2.1 course attendance requirements | 2.99 | 3.01 | 0.02 | |
| 2.2 length of course (ie time commitment) | 3.2 | 3.23 | 0.03 | |
| 2.3 pre-course requirements (eg readings) | 2.96 | 2.92 | 0.04 | |
| 2.4 post-course requirements (eg workbooks, hourly requirements) | 3.17 | 3.37 | 0.20 | |
| 2.5 the expense of accreditation courses (including instruction, specified texts and resource material) | 3.60 | 3.96 | 0.36 | |
| 2.6 costs for travelling to accreditation courses | 3.58 | 3.91 | 0.33 | |
| 2.7 the complexity of general principles content (eg planning, safety) | 2.88 | 3.05 | 0.17 | |
| 2.8 the complexity of sport specific content (eg skill and tactical development) | 2.68 | 2.78 | 0.10 | |
| 2.9 the difficulty 'gap' between each accreditation level | 3.32 | 3.72 | 0.40 | |
| 2.10 the presentation of course material using face-to-face instruction | 2.37 | 2.48 | 0.11 | |
| 2.11 the presentation of course material through distance education mode – text based | 3.20 | 3.27 | 0.07 | |
| 2.12 the presentation of course material through distance education mode – internet based | 3.30 | 3.30 | 0.00 | |

1. Of the three factors which recorded a differential of 0.3 or greater, factor 2.9, *the difficulty 'gap' between each accreditation level*, recorded the greatest difference (0.4). Reasons for this result are difficult to extrapolate from the data, and require further investigation.
2. Reasons for the differential between Factors 2.5, *the expense of accreditation courses (including instruction, specified texts and resource material)*, and 2.6 *costs for travelling to accreditation courses*, are explained more easily. Data relating to the annual income of respondents showed that 69% of males earned over \$30,000. This is contrasted to 34% of females who more than \$30,000 per annum. More pointedly, 40% of males earned in excess of \$50,000 per annum, as opposed to 10% of females. The results from this analysis are unambiguous; that is, females are at a distinct financial disadvantage when it comes to costs associated with coaching accreditation.

Regional Differences

Analysis of city and rural differences within the coach cohort revealed significant differences within three categories. These were: 'Organisational Issues', 'Course Accreditation Issues', and 'Personal Factors'.

To explore these differences more fully, analysis followed the procedure described for examining differences with the 'Gender' variable. Accordingly, coach data were separated into city and rural sub-groups, and means calculated for each accreditation factor. Factor

means (and mean differences) are provided in Table 3.9. Major differences are explored below.

1. Of the accreditation factors within the ‘Organisational Issues’ category, three show a mean differential of .30 or greater. These are factors 1.3, 1.5, and 1.11. Most obviously, factor 1.2, *the geographical location of courses*, was the most noticeable difference between the groups. While the finding was not unexpected, the degree to which this factor differentiated rural and city respondents is notable. Moreover, the mean figure for this factor for rural respondents (3.49) indicates the factor was also viewed as the greatest obstacle to accreditation. In combination, the strength and direction of this result have major implications for sporting organisations and accreditation agencies.
2. The remaining two factors of note within the ‘Organisational Issues’ category, factors 1.5, *access to high standard athletes*, and 1.11, *the standard of athlete you are expected to coach (eg you must be a Level 3 coach to coach state players)*, indicate accreditation requirements linked to specified standards of athletes are problematic in rural regions. Given the generalisation that the majority of higher standard athletes reside in major metropolitan areas, access to these athletes for rural coaches is limited (especially if access is required on a regular basis).
3. Within the ‘Course Accreditation Issues’ category, nine of 12 factors showed a mean differential of .30 or greater. Of these, two factors, 2.8, *the complexity of sport specific content (eg skill and tactical development)*, and 2.10, *the presentation of course material using face-to-face instruction*, had means below 3.0 for both sub-groups. As such, these factors are seen to be ‘helping’ factors for both groups, and will not be discussed at length here.

However, two other factors can be cited as outstanding differences. These are factors 2.1, *course attendance requirements*, and 2.6, *costs for travelling to accreditation courses*. Both factors were viewed to be less helpful by the rural respondents than the city cohort. While the factors can be explored in isolation, the inter-relationship that exists between the two is worthy of further examination. Fundamentally, if

Table 3.9 Mean scores by region for significantly different classifications

| Accreditation Factors | | Means | | |
|------------------------------------|--|-------|-------|------------|
| | | City | Rural | Difference |
| Organisational Issues | | | | |
| 1.1 | the frequency with which accreditation courses are offered (eg once per year) | 2.96 | 2.90 | 0.06 |
| 1.2 | the time of the day or week courses are offered (eg evenings, weekends) | 2.76 | 2.85 | 0.09 |
| 1.3 | the geographical location of courses | 2.87 | 3.49 | 0.62 |
| 1.4 | specified criteria for attending courses (eg invitation only) | 3.38 | 3.30 | 0.08 |
| 1.5 | access to high standard athletes | 2.98 | 3.32 | 0.34 |
| 1.6 | support from state and regional directors of coaching | 2.62 | 2.65 | 0.03 |
| 1.7 | access to ‘mentor’ coaches | 2.69 | 2.82 | 0.13 |
| 1.8 | access to coaching organisations | 2.66 | 2.94 | 0.28 |
| 1.9 | the need to meet specified, or unspecified, criteria (eg hourly/seasonal requirements) before undertaking higher accreditation | 3.14 | 3.33 | 0.19 |
| 1.10 | the need to access, and use, technology (eg the internet, CD ROMS, specific technical equipment) | 2.98 | 3.13 | 0.15 |
| 1.11 | the standard of athlete you are expected to coach (eg you must be a Level 3 coach to coach state players) | 3.13 | 3.43 | 0.30 |
| Course Accreditation Issues | | | | |
| 2.1 | course attendance requirements | 2.86 | 3.29 | 0.43 |
| 2.2 | length of course (ie time commitment) | 3.09 | 3.43 | 0.34 |
| 2.3 | pre-course requirements (eg readings) | 2.84 | 3.12 | 0.28 |
| 2.4 | post-course requirements (eg workbooks, hourly requirements) | 3.13 | 3.43 | 0.30 |
| 2.5 | the expense of accreditation courses (including instruction, specified texts and resource material) | 3.6 | 3.94 | 0.34 |
| 2.6 | costs for travelling to accreditation courses | 3.53 | 4.01 | 0.48 |
| 2.7 | the complexity of general principles content (eg planning, safety) | 2.85 | 3.13 | 0.28 |
| 2.8 | the complexity of sport specific content (eg skill and tactical development) | 2.61 | 2.98 | 0.37 |
| 2.9 | the difficulty ‘gap’ between each accreditation level | 3.33 | 3.65 | 0.32 |
| 2.10 | the presentation of course material using face-to-face instruction | 2.28 | 2.63 | 0.35 |
| 2.11 | the presentation of course material through distance education mode – text based | 3.09 | 3.4 | 0.31 |
| 2.12 | the presentation of course material through distance education mode – internet based | 3.23 | 3.45 | 0.22 |
| Personal Factors | | | | |
| 4.1 | your occupational commitments (eg work hours) | 3.68 | 3.79 | 0.11 |
| 4.2 | your family commitments | 3.62 | 3.68 | 0.06 |
| 4.3 | your educational background | 2.64 | 2.71 | 0.07 |
| 4.4 | your previous playing or competitive experience | 1.95 | 2.05 | 0.10 |
| 4.5 | the level of recognition you gain, from local sporting organisations/ clubs, for obtaining higher accreditation levels | 2.62 | 2.88 | 0.26 |
| 4.6 | potential financial rewards | 3.13 | 3.37 | 0.24 |
| 4.7 | the standard of your communication skills | 1.99 | 2.18 | 0.19 |
| 4.8 | the standard of your organisational skills | 1.91 | 2.1 | 0.19 |
| 4.9 | your geographical location | 2.78 | 3.68 | 0.90 |

accreditation courses require multiple trips to fulfil attendance requirements (as most courses do), it holds that travelling costs will become an issue. These factors also shed light on the reason why item 1.3, *the geographical location of courses*, was viewed as a major obstacle to gaining accreditation within the ‘Organisational Issues’ category.

4. Within the ‘Personal Factors’ category, one factor only had mean differential of .30 or greater, that is, factor 4.9, *your geographical location*. However, the mean difference for this factor (.90) was the greatest of any factor within any classification, with rural coaches viewing the factor as an obstacle to accreditation. Again, this result, in combination with other results discussed previously, cements geographical isolation as a prime factor in hindering accreditation.
5. Lastly, in a more holistic view of the results, an interesting finding emerged. Specifically, there is a general trend in all mean scores to be higher for rural respondents. The implications of this finding are not clear. However, it can be concluded that, in general, most factors are seen to be less helpful by rural coaches.

Accreditation Level Differences

Analysis of coach responses with respect to accreditation Levels 1, 2, and 3 did not reveal any significant differences. As such, it can be assumed that the rank order of factors provided in Table 3.7 is relatively consistent for each accreditation level.

Discussion and Implications

The results presented in this section shed light on how coaches perceived issues surrounding the accreditation process. Moreover, the results were able to specify differences that exist between coaches with respect to gender and region (no significant difference was found between accreditation levels).

Initially, analysis addressed the research question: *How are accreditation factors perceived by coaches?* In general terms, a number of implications arise. These are discussed below:

1. The expense of courses has been cited as a major impediment to accreditation. In respect of this issue, an intricate relationship is evident among fixed course costs, the expense associated with getting to courses, and the geographical location of courses.

Clearly, if a course is conducted a considerable distance from a candidate's residence, the additional expense (which can comprise travel and accommodation costs) will undoubtedly increase the overall 'cost' of accreditation.

The cost issue is further compounded by the lack of financial rewards for coaches and officials. As the majority of coaches are amateur, and officials receive relatively minor remuneration, the cost-benefit of undertaking formal accreditation may not be attractive. While it would be impractical to suggest all accredited coaches and officials should receive remuneration that would offset the expense of accreditation, two possible solutions exist to address the issue of costs.

The first of these is a unilateral reduction in course costs. While it is not the place of this report to suggest how NSOs should achieve this measure, NSOs would need to determine what reduction is reasonable given the operational costs of courses, and to what extent reduced costs will facilitate additional accreditation enrolments. The second suggestion involves local clubs or associations subsidising the course and/or travel costs. This strategy is already used to some extent, but its overall success relies on the financial resources of clubs and associations.

2. The importance of personnel factors such as face-to-face interaction are highlighted. In three of the four classification categories, factors that involve interaction with course presenters/assessors come to the fore (see 'Organisational Issues', 'Course Structure and Quality Issues' and 'Assessment Issues'). Two major implications arise from this finding for NSOs. The first is that 'people in the field' are a valued resource. For this reason, NSOs should select carefully the people they place in leadership positions. For example, it would seem logical that accreditation instructors and assessors not only possess high levels of sport specific knowledge, but have a sound understanding of learning paradigms and possess the ability to empathise with candidate needs. Given the strategic selection of appropriate people, the potential benefits to ongoing coach and officiating education should be substantial.

The second implication is that any moves towards distance-based modes of course delivery need to be considered carefully. Although the value of internet resources were not dismissed by the respondents, the perception remained that inter-personal contact between coaches and course instructors and assessors is of greater value.

3. The perceived ‘difficulty gap’ between each level of accreditation should be noted by NSOs and accreditation agencies. The results indicated that the required level of understanding needed at each level may present a barrier to additional accreditation. While it is acknowledged that higher levels of accreditation requires greater complexity in content, the move should be graded to allow candidates a more stepped progression. Implicitly, this may require a reorganisation of the three tier accreditation structure. This is a point that needs further debate among the Australian Sports Commission, NSOs, and other accreditation agencies.

Other findings have also emerged from the results which differentiate the various sub-groups with the coaching cohort. These addressed the following research questions:

Do the perceptions of male and female coaches differ significantly?

Do the perceptions of city and rural coaches differ significantly?

Do the perceptions of coaches vary significantly between NCAS accreditation levels 1, 2 and 3?

The last question is answered in the negative. However, the first two questions can be answered in the affirmative. As such, important implications for NSOs and other accreditation agencies emerge. These are outlined below.

4. For gender differences, an obvious issue emerged in relation to the financial cost of accreditation. This issue can be viewed from the perspective of direct accreditation course costs, plus associated accreditation costs (ie travel costs to accreditation courses). Results revealed that women find the financial costs to be a barrier to accreditation, and the financial disparity between males and females (with respect to annual income) cited previously indicates why this situation exists. Given this set of circumstances, NSOs and accreditation agencies need to be cognisant of the financial constraints of female candidates, and explore methods of reducing the relative burden of accreditation costs. Examples of possible strategies include dedicated scholarships, targeted subsidies, and reduced course costs.
5. Financial issues were also prevalent when city and rural coaches were compared. Specifically, rural respondents cited travel costs as a hindrance to accreditation. This

is not surprising given that course attendance requirements and the geographical location of courses were also deemed to be major accreditation obstacles. While some financial solutions have been provided, an alternative solution is to bring accreditation courses ‘to the people’. However, this would necessitate a strong commitment from NSOs and accreditation agencies. Moreover, accreditation courses conducted in rural areas may be problematic in terms of gaining a ‘critical mass’ of participants. Nevertheless, NSOs and accreditation agencies may need to redefine what constitutes a viable group if they are to meet the needs of rural coaches.

6. An associated alternative to the financial issues raised may be sought through varied forms of course delivery, such as distance education techniques (internet and text based material). However, while these possibilities were not dismissed by rural coaches, the results indicate rural coaches prefer face-to-face instruction. As such, NSOs and accrediting agencies need to be aware that, where possible, rural coaches prefer direct contact with accreditation instructors.
7. The last issue that requires consideration relates to the need for rural coaches to gain access to higher standard athletes. The implication of linking accreditation requirements to higher standard athletes is that potentially good coaches in rural areas, who are capable of progressing up the accreditation ladder, may be discriminated against on geographical grounds alone. As a consequence, these people will never be able to move up the accreditation ladder, no matter how good they are at coaching. NSOs should consider alternative criteria to allow capable coaches to advance up the accreditation ladder, irrespective of access issues related to higher standard athletes.

OFFICIAL FINDINGS

The presentation of results in this section mirror those for the coach cohort. Initially, all official responses are examined, then comparisons are made with respect to sex, region and accreditation level differences. Consequently, analysis in this section addresses the following research questions:

How are accreditation factors perceived by officials?

Do the perceptions of male and female officials differ significantly?

Do the perceptions of city and rural officials differ significantly?

Do the perceptions of officials vary significantly between accreditation levels 1, 2 and 3?

Overall Perceptions – Officials

All official responses were analysed using Rasch Scaling techniques. From this analysis, it is evident that, in general, the position of accreditation factors within each classification was stable¹. However, as with the coaching data, a concern exists with the separation of factors within the ‘Assessment Issues’ classification. Again, the ranking of each factor within this classification needs to be interpreted with caution.

The rank order of accreditation factors is provided in Table 3.10². Generally, the position of most factors is consistent with the ranking responses reported for the coaching cohort. Consequently, a re-examination of the findings is superfluous here. However, three notable differences are evident, and are worthy of additional discussion.

1. The relatively high ranking (3rd) given to factor 1.11, *the standard of athlete you are expected to officiate (eg state championships)*, illustrates that officials view the opportunity to officiate higher standard athletes as a facilitating factor in gaining accreditation (the coach ranking for this factor was 9th).
2. Of the 12 factors within the ‘Course Accreditation Issue’ classification, factor 2.7, *the complexity of general principles content (eg legal responsibilities)* was ranked 9th. As such, this factor can be interpreted as an obstacle to officiating accreditation, and contrasts notably with the high ranking (3rd) afforded this factor by coaches.
3. Factor 3.6, *field assessments in your sporting environment*, was ranked in 1st position by officials, as opposed to 6th by the coaching cohort. This result provides a clear indication that the practice of assessing officials, while undertaking officiating duties, is valued highly as an aid to the accreditation process.

¹ Separation indices for each classification were: Organisational Factors (.76); Course Structure and Quality Issues (.82); Assessment Issues (.29); and Personal Factors (.80).

² For each factor, the percentage responses rates for each response option are provided in Appendix 8.

Table 3.10 Relative ‘helpfulness’ ranking of accreditation factors – official responses

| | Accreditation Factors | Rank |
|-----|--|-------------|
| | Organisational Issues | |
| 1.6 | support from state and regional directors of officiating | 1 |
| 1.7 | access to ‘mentor’ officials | 2 |
| 111 | the standard of athlete you are expected to officiate (eg state championships) | 3 |
| 1.8 | access to officiating organisations | 4 |
| 1.2 | the time of the day or week courses are offered (eg evenings, weekends) | 5 |
| 1.5 | access to high standard athletes | 6 |
| 110 | the need to access, and use, technology (eg the internet, CD ROMS, specific technical equipment) | 7 |
| 1.4 | specified criteria for attending courses (eg invitation only) | 8 |
| 1.9 | the need to meet specified, or unspecified, criteria (eg hourly/seasonal requirements) before undertaking higher accreditation | 9 |
| 1.1 | the frequency with which accreditation courses are offered (eg once per year) | 10 |
| 1.3 | the geographical location of courses | 11 |
| | Course Accreditation Issues | |
| 210 | the presentation of course material using face-to-face instruction | 1 |
| 2.8 | the complexity of sport specific content (eg rule understanding and interpretation) | 2 |
| 2.3 | pre-course requirements (eg readings) | 3 |
| 2.1 | course attendance requirements | 4 |
| 212 | the presentation of course material through distance education mode – internet based | 5 |
| 211 | the presentation of course material through distance education mode – text based | 6 |
| 2.4 | post-course requirements (eg workbooks, hourly requirements) | 7 |
| 2.2 | length of course (ie time commitment) | 8 |
| 2.7 | the complexity of general principles content (eg legal responsibilities) | 9 |
| 2.9 | the difficulty ‘gap’ between each accreditation level | 10 |
| 2.5 | the expense of accreditation courses (including instruction, specified texts and resource material) | 11 |
| 2.6 | costs for travelling to accreditation courses | 12 |
| | Assessment Issues | |
| 3.6 | field assessments in your sporting environment | 1 |
| 3.2 | the quality of assessors | 2 |
| 3.5 | practical assessments conducted during course time | 3 |
| 3.1 | recognition of prior learning and experience (eg previous officiating experience, other certification) | 4 |
| 3.3 | your personal rapport with assessors | 5 |
| 3.7 | the clarity of assessment criteria (ie I know exactly what is expected to pass accreditation assessment tasks) | 6 |
| 3.4 | theory assessment requirements | 7 |
| | Personal Factors | |
| 4.4 | your previous playing or competitive experience | 1 |
| 4.8 | the standard of your organisational skills | 2 |
| 4.7 | the standard of your communication skills | 3 |
| 4.5 | the level of recognition you gain, from local sporting organisations/clubs, for obtaining higher accreditation levels | 4 |
| 4.3 | your educational background | 5 |
| 4.9 | your geographical location | 6 |
| 4.6 | potential financial rewards | 7 |
| 4.2 | your family commitments | 8 |
| 4.1 | your occupational commitments (eg work hours) | 9 |

Gender, Regional, and Accreditation Level Differences – Officials

Analysis of official responses with respect to gender, region and accreditation level differences, did not reveal any significant differences¹. As such, it can be assumed that the rank order of factor provided in Table 3.10 is relatively consistent across genders, regions and accreditation levels.

Discussion and Implications – Officials

The results presented in this section allowed four research questions to be addressed. The first of these, *How are accreditation factors perceived by officials?* showed a substantial amount of consistency with the coaching results presented earlier. However, the variations in factor rankings noted in this section demonstrated the worth of assessing official responses independently. Notable discussion points are outlined below.

1. Precise reasons why factor 1.11, *the standard of athlete you are expected to officiate (eg state championships)*, would be ranked highly are difficult to determine. However, it could be hypothesised that the differences in officiating and coaching work are contributing reasons. In particular, it is not uncommon for officials to officiate at a number of different standards. For example, soccer referees may officiate junior competition on a Saturday morning, senior competition in the afternoon, and also attend one or more representative carnivals during the course of the season. Fundamentally, this ‘cross-standard’ work is not generally possible for coaches. As such, the requirement of officials to officiate at a specific level of competition, to meet accreditation requirements, is less problematic than it is for coaches.
2. The perception of factor 2.7, *the complexity of general principles content (eg legal responsibilities)*, as a hindrance to accreditation is interesting. Reasons for this may be traced to traditional methods of training and accrediting officials. Before the mid-1990s, general principle content was not a formal part of many accreditation courses. As such, officials obtained significant amounts of sport-specific content. However, since the inception of the NOP and NOAS, officials are required to undertake general

¹ Technical notes detailing the procedures followed to investigate the possible existence of significant differences for the variables of Sex, Region, and Accreditation Level, can be viewed in Appendix 7.

principles and sport specific content. This alteration in process, given the relative infancy of the NOAS, may help to explain the view of officials.

3. The view of factor 3.6, *assessments in your sporting environment*, as a help to accreditation may also be linked again to the nature of officiating work. Given that officials require some form of ‘game play’ that encompasses athlete participation, the most obvious environment for assessment to occur is in field settings. Moreover, officiating, in general terms, does not require a demonstration of pedagogy (which, in many instances, requires assessment in structured settings). Consequently, the assessment of officiating tends to be more straightforward than that of coaches.

The remaining three research questions were designed to explore significant differences between the various sub-groups within the officiating cohort. These questions were:

Do the perceptions of male and female officials differ significantly?

Do the perceptions of city and rural officials differ significantly?

Do the perceptions of officials vary significantly between accreditation levels 1, 2 and 3?

All three questions can be answered in the negative. The lack of statistical differences found between genders, regions and accreditation levels may be linked to the relatively low sample size of officials. For future studies, a greater number of officials will make analysis more meaningful, and provide substantive findings for officiating educators to make decisions concerning the accreditation process.

CONCLUSION

The findings presented in this chapter were able to clarify how accreditation factors were viewed by coaches and officials. Although the chapter did not set out to compare coach and official findings, the differences in the rank order of factors for each group may be explained in the role variations of coaches and officials.

More specifically, the results were able to detail differences which exist within each of these groups. These were examined with reference to gender, region of residence, and accreditation level. The confirmation of differences allow NSOs and accreditation agencies to tailor

accreditation programs to meet the specific needs of groups, thus providing more meaningful and relevant accreditation programs.

Chapter Four

Associated Findings

Introduction

The results presented in this chapter serve three purposes. The first of these is to compare the results between major and minor sports. It is intended that this analysis will provide insight into the degree of homogeneity of responses between coaches of these sports. The second purpose is to examine responses from Section 3 of the survey. This aspect of the questionnaire concerning issues associated with accreditation, and respondents were asked to indicate their level of agreement with each statement. Lastly, the third purpose is to shed some light on findings discussed in the previous chapter by examining the qualitative interview data collected in the targeted interviews. The free responses provided by respondents in Section 4 of the survey will also be used to complement this analysis.

Consequently, this chapter is divided into three sections, with each section focusing specifically on one of the three purposes described.

MAJOR AND MINOR SPORT COMPARISON

Significant interest was expressed by personnel within the Sport Education Section of the ASC concerning possible variations in how accreditation factors are perceived by coaches of major and minor sports. As such, this section addressed the research question:

Do coaches of major and minor sports perceive accreditation factors differently?

To address this research question, an analysis of responses was undertaken using data from soccer (major sport) and fencing (minor sport). Within the NCAS, soccer has the most accredited coaches ($n=14,388$). This represents 15% of all accredited coaches. Conversely, fencing has 62 coaches, which comprises 0.3% of all accredited coaches. Within this study, the soccer sub-group comprised 159 coaches, and fencing 19 coaches.

To aid analysis, responses to each item from each group, were averaged and differences in average scores compared¹. Results of this analysis are provided in Table 4.1. In general, results showed that fencing coaches viewed most accreditation factors to be less helpful. The notable exceptions to this trend are the factors in the 'Personal Issues' category, where almost half of the factors were seen to be more helpful by fencing coaches.

A fuller exploration of differences are not presented here, primarily due to the intricate knowledge of both sports required to explain differences. However, one trend that is notable is the magnitude of differentials. When compared with other analyses presented in this report, the number of factors with differentials greater than 0.3 is notably more. This would indicate that marked variations in perception exist between coaches of soccer and fencing. More generally, it may be inferred that significant variations exist between coaches of other major and minor sports.

Discussion and Implications

Results in this section addressed the research question: *Do coaches of major and minor sports perceive accreditation factors differently?* Uncategorically, this question can be answered in the affirmative.

However, the implications of this finding need to be assessed thoroughly by those people who have an intricate working knowledge of soccer and fencing accreditation programs. Nevertheless, the fact that fencing coaches perceived most factors as less helpful than did soccer coaches, raises two fundamental issues. The first relates to the organisation and support structures of fencing. It may be the case that fencing does not have the personnel, funds and support infrastructure that is comparable to larger sports. As such, the factors that can help accreditation are viewed less favourably.

The second relates to the expectations of fencing coaches. If the coaches have unreasonably high expectations of accreditation factors, the rating of the factors will be low despite the potential benefits they may bring.

Whatever the reasons for the perceptions of fencing coaches, coach educators from this sport

¹ Rasch Scaling was not used for this analysis due to the small sample size of the fencing cohort.

Table 4.1 Mean differences between large and small sports

| Accreditation Factors | | Mean | | |
|--|--|--------|---------|------|
| | | Soccer | Fencing | Diff |
| Organisational Issues | | | | |
| 1.1 | the frequency with which accreditation courses are offered (eg once per year) | 3.11 | 3.32 | 0.21 |
| 1.2 | the time of the day or week courses are offered (eg evenings, weekends) | 2.65 | 3.42 | 0.77 |
| 1.3 | the geographical location of courses | 2.86 | 3.47 | 0.61 |
| 1.4 | specified criteria for attending courses (eg invitation only) | 3.31 | 3.11 | 0.20 |
| 1.5 | access to high standard athletes | 2.96 | 3.74 | 0.78 |
| 1.6 | support from state and regional directors of coaching | 2.55 | 2.58 | 0.03 |
| 1.7 | access to 'mentor' coaches | 2.78 | 2.79 | 0.01 |
| 1.8 | access to coaching organisations | 2.96 | 3 | 0.04 |
| 1.9 | the need to meet specified, or unspecified, criteria (eg hourly/seasonal requirements) before undertaking higher accreditation | 2.96 | 3.58 | 0.62 |
| 110 | the need to access, and use, technology (eg the internet, CD ROMS, specific technical equipment) | 2.81 | 3.21 | 0.40 |
| 111 | the standard of athlete you are expected to coach (eg you must be a Level 3 coach to coach state players) | 3.06 | 3.53 | 0.47 |
| Course Structure and Quality Issues | | | | |
| 2.1 | course attendance requirements | 2.96 | 3.21 | 0.25 |
| 2.2 | length of course (ie time commitment) | 3.08 | 3.21 | 0.13 |
| 2.3 | pre-course requirements (eg readings) | 2.95 | 2.74 | 0.21 |
| 2.4 | post-course requirements (eg workbooks, hourly requirements) | 2.99 | 3.16 | 0.17 |
| 2.5 | the expense of accreditation courses (including instruction, specified texts and resource material) | 3.52 | 3.74 | 0.22 |
| 2.6 | costs for travelling to accreditation courses | 3.52 | 3.84 | 0.32 |
| 2.7 | the complexity of general principles content (eg planning, safety) | 2.72 | 2.53 | 0.19 |
| 2.8 | the complexity of sport specific content (eg skill and tactical development) | 2.63 | 2.74 | 0.11 |
| 2.9 | the difficulty 'gap' between each accreditation level | 3.15 | 3.89 | 0.74 |
| 210 | the presentation of course material using face-to-face instruction | 2.22 | 2.74 | 0.52 |
| 211 | the presentation of course material through distance education mode – text based | 3.09 | 3.74 | 0.65 |
| 212 | the presentation of course material through distance education mode – internet based | 3.3 | 3.84 | 0.54 |
| Assessment Issues | | | | |
| 3.1 | recognition of prior learning and experience (eg previous coaching experience, other certification) | 2.29 | 2.16 | 0.13 |
| 3.2 | the quality of assessors | 2.17 | 3.16 | 0.99 |
| 3.3 | your personal rapport with assessors | 2.42 | 3 | 0.58 |
| 3.4 | theory assessment requirements | 2.6 | 3.37 | 0.77 |
| 3.5 | practical assessments conducted during course time | 2.15 | 2.68 | 0.53 |
| 3.6 | field assessments with your athletes in your sporting environment | 2.36 | 2.89 | 0.53 |
| 3.7 | the clarity of assessment criteria (ie I know exactly what is expected to pass accreditation assessment tasks) | 2.5 | 3 | 0.50 |
| Personal Factors | | | | |
| 4.1 | your occupational commitments (eg work hours) | 3.57 | 3.68 | 0.11 |
| 4.2 | your family commitments | 3.48 | 3.79 | 0.31 |
| 4.3 | your educational background | 2.76 | 2.26 | 0.50 |
| 4.4 | your previous playing or competitive experience | 2.16 | 1.63 | 0.53 |
| 4.5 | the level of recognition you gain, from local sporting organisations/clubs, for obtaining higher accreditation levels | 2.66 | 2.63 | 0.03 |
| 4.6 | potential financial rewards | 3.09 | 3.26 | 0.17 |
| 4.7 | the standard of your communication skills | 2.14 | 2.16 | 0.02 |
| 4.8 | the standard of your organisational skills | 2.06 | 1.89 | 0.17 |
| 4.9 | your geographical location | 2.97 | 3 | 0.03 |

need to examine carefully the reasons why their coaches hold such perceptions. This needs to be done in the context of the financial and structural parameters of fencing, and the overall objectives of fencing organisations.

ACCREDITATION ISSUES – LEVEL OF AGREEMENT

Results in this section are not intended to answer a specific research question. Rather, they are designed to complement and expand the findings presented in Chapter 3. For the purpose of analysis, responses were separated into coaching and officiating sub-groups, and submitted for Rasch Scaling¹. Items for each group were ranked according to how agreeable they were to respondents. The results for each group are presented in the following discussion.

Coaches

The rank order of statements by coaches is detailed in Table 4.2, and reveals five points worthy of further examination.

1. The high ranking of statement 8, *Assessment should be used as a form of feedback to facilitate learning*, and the low ranking of other statements related to assessment (ie statements 4, 7, and 9) provide an interesting picture of how assessment is perceived. It is apparent that coaches want assessment to be part of the larger learning process, and not confined to grading purposes only. Also, coaches have revealed assessment is not an issue that overly worries them. They indicated assessment tasks are not intimidating, and the prospect of failing assessment tasks does not concern them.

A related assessment point can also be noted from the statement 3, *I prefer to obtain additional knowledge and skills informally, rather than undertake formal accreditation*. The ranking position of this statement demonstrates disagreement. As such, it can be inferred that coaches prefer formal acknowledgement of additional courses and skill updates.

2. The general agreement with statement 17, *I am interested in using online (Internet) resources*, and statement 10, *In my sport, people who present accreditation courses*

¹ Item estimates were generated for ranking purposes. Item separation indices were 0.98 for Coach data, and 0.93 for Official data.

Table 4.2 Level of Agreement by rank – coaches

| | Statement | Rank |
|----|---|-------------|
| 8 | Assessment should be used as a form of feedback to facilitate learning. | 1 |
| 12 | General principles content has relevance to my coaching. | 2 |
| 17 | I am interested in using online (Internet) resources. | 3 |
| 10 | In my sport, people who present accreditation courses are high quality presenters. | 4 |
| 6 | For me, self-assessment is a very effective form of performance feedback. | 5 |
| 13 | In my sport, I gain additional respect by being an accredited coach. | 6 |
| 11 | I am content to stay at my current accreditation level. | 7 |
| 16 | NCAS resource material (eg Better Coaching text) is of use to me in my coaching role. | 8 |
| 5 | Assessors are accepting of innovative coaching methods. | 9 |
| 15 | Compulsory resource literature has been of relevance to my accreditation courses. | 10 |
| 2 | In my sport, sporting 'politics' plays a major part in determining who moves up the accreditation ladder. | 11 |
| 1 | I anticipate the next accreditation level will be appropriate to my coaching needs. | 12 |
| 3 | I prefer to obtain additional knowledge and skills informally, rather than undertake formal accreditation. | 13 |
| 9 | The possibility of failing assessment tasks concerns me. | 14 |
| 7 | Assessment should be used for grading purposes only. | 15 |
| 4 | I find assessment procedures intimidating. | 16 |
| 14 | I view coaching as a 'career'. | 17 |
| 18 | At the next accreditation level, I anticipate the required level of expertise will be too difficult for me. | 18 |

are high quality presenters, should be viewed in light of results presented previously. In Chapter 3, it was noted coaches had a preference for face-to-face instruction, and valued the quality of their course presenters. The high ranking afforded statement 10 supports this previous finding. However, the high ranking given to statement 17 should not be discounted. The ranking of this statement indicates that on-line resources are of value, and should be developed as an adjunct, rather than a replacement, for face-to-face instruction.

3. The relative positions of statement 11, *I am content to stay at my current accreditation level*, and statement 1, *I anticipate the next accreditation level will be appropriate to my coaching needs*, need be interpreted in tandem. Clearly, if coaches are content to remain at their current level of accreditation (ie high level of agreement for statement 11), this may explain why the next level of accreditation is less relevant to their coaching needs (ie the relatively lower level of agreement for statement 1). However, despite the coaches' perception that the next level of accreditation was not relevant, it was not viewed as beyond their expertise (ie strong disagreement with statement 18, *At the next accreditation level, I anticipate the required level of expertise will be too difficult for me*).

4. The high ranking of statement 12, *General principles content has relevance to my coaching*, indicates this aspect of the accreditation process is valued.
5. The low ranking of statement 14, *I view coaching as a 'career'*, is not surprising given that 90.5% of coaches reported that coaching is not their primary source of income.

Officials

The rank order of statements by officials is detailed in Table 4.3. Generally, the rank order of items is similar to that of coaches. As such, related points will not be re-stated here. However, four statements are an obvious exception to the responses provide by coaches, and are examined below.

Table 4.3 Level of Agreement by rank – officials

| Statement | Rank |
|--|------|
| 8 Assessment should be used as a form of feedback to facilitate learning. | 1 |
| 17 I am interested in using online (Internet) resources. | 2 |
| 10 In my sport, people who present accreditation courses are high quality presenters. | 3 |
| 6 For me, self-assessment is a very effective form of performance feedback. | 4 |
| 1 I anticipate the next accreditation level will be appropriate to my officiating needs. | 5 |
| 12 General principles content has relevance to my officiating. | 6 |
| 11 I am content to stay at my current accreditation level. | 7 |
| 2 In my sport, sporting 'politics' plays a major part in determining who moves up the accreditation ladder. | 8 |
| 15 Compulsory resource literature has been of relevance to my accreditation courses. | 9 |
| 5 Assessors are accepting of innovative officiating methods. | 10 |
| 16 NOAS resource material (eg Officiating Better text) is of use to me in my officiating role. | 11 |
| 13 In my sport, I gain additional respect by being an accredited official. | 12 |
| 9 The possibility of failing assessment tasks concerns me. | 13 |
| 3 I prefer to obtain additional knowledge and skills informally, rather than undertake formal accreditation. | 14 |
| 7 Assessment should be used for grading purposes only. | 15 |
| 4 I find assessment procedures intimidating. | 16 |
| 14 I view officiating as a 'career'. | 17 |
| 18 At the next accreditation level, I anticipate the required level of expertise will be too difficult for me. | 18 |

1. The greatest variation exists with statement 13, *In my sport, I gain additional respect by being an accredited official [coach]*. For officials this was ranked 13th, and for coaches was ranked 6th. The diversity in rankings points to accredited officials perceiving their status in the sporting hierarchy to be relatively low.

2. Statement 12, *General principles content has relevance to my officiating*, was ranked in 6th position by officials, as opposed to 2nd position by coaches. While statement 12 is not disagreeable to officials, the general thrust of the result is reflected in findings discussed in Chapter 3, where the complexity of general principles content was perceived as a barrier to accreditation for officials.
3. Similarly, the relatively low ranking of statement 13, *NOAS resource material (eg Officiating Better text) is of use to me in my officiating role*, supports the notion that general principle content is not, as yet, well regarded and valued by officials.
4. The third item which showed marked variation was statement 2, *In my sport, sporting 'politics' plays a major part in determining who moves up the accreditation ladder*. Among officials, this statement was ranked in the top half of the agreement continuum (8th). This would indicate that officials perceive factors other than ability determine who progresses through accreditation levels.

Discussion and Implications

The results presented in this section show that coaches and officials are a relatively homogeneous group with respect to the issues presented. The similar rankings of statements relating to assessment, career intentions and progression to the next level of accreditation substantiate this assertion. Nevertheless, implications arise which are of consequence to NSOs and accreditation agencies, and are outlined below.

1. The strong level of agreement that assessment should be part of the learning process indicates NSOs and accreditation agencies should consider incorporating assessment into the learning process. This point should not be interpreted that assessment, for grading purposes, be dismissed. Rather, assessment should be viewed as an integral part of the accreditation process, taking into account the dual focus of learning *and* grading.
2. The preference displayed by coaches and officials for all job-related learning to be formalised has significant assessment implications. Specifically, accrediting agencies and sporting organisations need to have mechanisms that record and quantify the additional learning and skills acquired during update courses and professional

development activities. This will consequently allow coaches and officials to use such activities for their formal updating requirements.

3. The level of agreement with the statement, *I am content to stay at my current accreditation level*, gives some indication why there is a disproportionate number of coaches (and possibly officials) at the lowest level of accreditation. Currently, there are 89% of all coaches at Level 1. If many of these coaches have little or no ambition to progress their accreditation, a log jam of coaches at Level 1 is to be expected.
4. The final implication of note relates to the level of respect coaches and officials feel they receive. Results suggested coaches feel they receive respect in their role, while officials tended to perceive they are not well respected. A clue to this contrary perception may be found in the community promotion of coaches and officials. Coaches, through various campaigns (eg 'Thanks Coach'), have had their role brought to the forefront of the sporting community in recent years. Although a 'Thanks Ref' campaign does exist, the profile of the campaign has not matched that of campaigns such as 'Thanks Coach'. To correct this imbalance, officials should have their role better promoted, understood and appreciated by the general sporting community.

RELATED SURVEY AND INTERVIEW DATA

The quantitative findings discussed in this report have raised three issues worthy of additional exploration. These are: the forms of support coaches and officials expect of mentors; reasons why coaches and officials are content to stay at their current level of accreditation; and the acceptance of accreditation-related material offered over the internet. The selection of these issues was made purposefully by SES consultants following consideration of the preliminary quantitative findings.

To investigate the three issues, two forms of qualitative data were collected. The first of these were interviews. Specifically, respondents were considered for interviews if two criteria were met. These were:

1. Respondents indicated, in their questionnaire, a willingness to participate in a follow-up interview.

2. Respondents perceived the accreditation factor 1.7, *access to mentor coaches*, as a ‘Significant Help’, and also ‘Strongly Agreed’ with statement 11, *I am content to stay at my current accreditation level*.

Given these criteria, possible participants for interviews were selected randomly using the SPSS statistical software. A caveat on this process was that at least 10 participants resided outside the capital cities and major regional cities, and indicated a willingness to use on-line resources (Question 17, Section 3). Overall, 10 participants were interviewed per issue. As some participants qualified to be interviewed on more than one issue, 18 coaches and five officials were interviewed in total.

The second form of qualitative data collected was from Section 4 of the survey questionnaire. Here, respondents were given the opportunity to provide written comments concerning their experiences with the accreditation process. A total of 406 respondents made comments. Of these, four made reference to mentors, and eight to internet usage. These specific comments were used to complement the interview data.

In the following discussion, the nature of interview and written responses is addressed within the context of the issue under investigation. For the purpose of brevity, not all comments are listed. However, the comments provided are selected to represent the main patterns which emerged from the data.

Issue 1: What forms of support do coaches and officials expect from mentors?

Generally, coaches and officials are happy to have mentoring conducted within the context of an *informal* arrangement. Respondents tended to agree that formalised structures may become too cumbersome to operate in any meaningful way, and also recognised the availability of mentors may be a limiting factor in any attempt to formalise the mentoring process. Comments¹ which support this position include:

I just want someone who can come to me sessions and say, ‘Hey, why don’t you try this or that?’ I mean, better coaches had lots of good ideas ... I just want them to tell me some. (*Level 1 coach*)

¹ When presenting examples of respondents’ comments, they are provided as quoted by respondents with two exceptions. Firstly, spelling has been corrected, and, secondly, text is inserted into square brackets to clarify the meaning where necessary. No attempt has been made to alter grammar. Lastly, respondent sub-group membership and level of accreditation are provided after each comment cited.

The idea of having a mentor is great ... someone to talk to and run ideas by. I mean, I think the accreditation course was really useful, but to get real good practical advice and ideas from someone with experience – I just don't think you can beat it. *(Level 1 official)*

The people who act as mentors need to be really good [coaches] ... you need to respect them. And if the mob in Sydney or wherever say, 'You must have Joe Bloggs as your mentor', well, I don't think it will work. I want someone I know I will learn off, and like too. *(Level 2 coach)*

I would have loved a mentor when I was getting my accreditations. But if they had to report on me [to a state or national sporting organisation], I don't think many people go for it. You know, that is what assessment is for ... and imagine all the paper work for the mentors – who would want that job? *(Level 3 coach)*

Aside from these general issues concerning the administration of mentor systems, comments also gave a clear indication of how respondents want mentors utilised. The comments tended to relate to the technical aspects of the game, or in the case of officials, the technical aspects of their officiating. Typical comments are provided below:

Access to 'mentor' coaches who periodically visit clubs and hold seminars ... reviewing coaching techniques – content of training sessions – age group assessment. *(Level 1 coach)*

I want the mentor to give me new ideas on skills and organisation. And I want to ask them questions too, not just them offer opinions on my coaching. *(Level 1 coach)*

I would like them [mentors] to be able to quietly take me aside and say, 'Look, your decision making was great, but your position was poor.' Then we could discuss how this was to be achieved. But this isn't happening at the moment. All I get is the assessor telling me what I do wrong. *(Level 2 Official)*

New ideas on strategy would be useful. I'm a level 3 coach, so most skill drills and what have you I can deal with, but I feel as though I am isolated from new ideas and developments in the sport. *(Level 3 coach)*

The final aspect of mentors that required examination is the 'venue' for mentoring; ie if the mentor is a practising coach/official, does the novice coach/official observe the mentor, or does the mentor come to the novice's environment? This issue did not reach one over-riding perspective. Some coaches saw value in watching how the mentor operated, while others preferred to have the mentor offer advice in the context of their [the novice coach's] training environment. Officials were more consensual on this matter, and believed mentors needed to watch the official 'in action'. As one official noted:

What could they tell me at training? All I do is fitness work. The mentor needs to see what I do and how I do it, and that can only happen on match day. *(Level 1 official)*

Issue 2: Why are coaches and officials content to stay at their current level of accreditation?

A range of opinions was offered in response to this question. These included: the participant's age, feelings of inadequacy with respect to sport-related knowledge; lack of opportunity to go to higher accreditation; time commitment; and, the standard of athlete being coached. However, no single reason stood out. Typical coaches' comments were:

Well, I am 45 now, and I would love do my Level 3. However, I do not have the time to spend exorbitant amounts of time on my Level 3. Some of these guys [directors of coaching] think you have nothing better to do in your life [than coach]. And given I am never going to get paid [for coaching] I don't see the point of it. *(Level 2 coach)*

I did my accreditation to help my junior kid get better. But now he has developed to a point where I think he needs someone who understands higher level playing skills, and I don't have that ... the technical ability is out of my area. *(Level 1 coach)*

I am coaching kids at the moment, and I am happy with that. I cannot see myself going to coach any higher ... maybe some rep stuff in the future, but who knows. I like the kids and I think they like me, so why change? *(Level 1 coach)*

I need higher level athletes, but where do you find them in the country? So I have resigned myself to been a Level 2 coach for the rest of my life. *(Level 2 coach)*

Responses from officials were similarly varied, although officials tended to cite their age as the major reason for not seeking additional accreditation. There was a perception among officials that their officiating was a hobby, and that at their stage in life, there was little point in going through the 'promotion rounds'. However, one issue was raised which dovetailed with the quantitative responses in Section 3 of the survey, that is, the issue of 'politics'. Three officials made reference to factors, other than competence, as a criterion for promotion. This position was typified by the following response:

I have given up trying to progress. Every time I think I am doing OK, the assessor comes along and bags me, but will always promote his mates. Why would I bother trying to go higher? *(Level 1 official)*

Issue 3: The acceptance of accreditation-related material offered over the internet

Of the three issues under investigation in this section, this issue offered the most consistent responses. A general pattern emerged which indicated two dominant lines of thought. Firstly, the provision of complete on-line accreditation course is less attractive than face-to-face instruction. It was felt that on-line courses were less able to offer the diversity of instruction required to fully understand specified content. For example:

I really have my doubts about the internet for teaching a lot of this stuff [accreditation content]. Diagrams are sometimes easy to understand, sometimes they are not ... and I cannot work them out sometimes. And the subtleties of teaching some skills, you know, like a leg-break, would be hard to get across without seeing it in person. *(Level 2 coach)*

One of the good things about courses is chatting to other coaches. I can see how other coaches tackle problems that are similar to mine. I do not see that this is easily done on the internet ... maybe one day! *(Level 1 coach)*

Although doubts were expressed about offering entire courses on-line, the second significant point to emerge was that respondents saw a role for on-line material which focused on the provision of supplementary material to support coaching and officiating. Typical comments which support this conclusion are provided below:

I would find the internet really useful for things like update information, newsletters, different skill practices and modified game, but I do not think I would like to do a whole accreditation course [over the internet]. *(Level 1 coach)*

Lots of little things would be good ... things like how refs handle players in certain situations, impending rule changes, you know, things like that. *(Level 2 official)*

A chat room would be good. We have a pretty limited network out here, so any chance to swap ideas with other coaches would be a great help. But other than that, I am not sure I would use the internet. *(Level 1 coach)*

Two other general points worthy of consideration are the associated costs of internet connection and the quality of internet services. With respect to internet costs, two coaches expressed concern that if courses went online, they would be required to update their computer hardware and software (primarily to accommodate graphics and movies), pay for internet connection, then pay monthly accounts to access the internet. This expense would need to be met over and above the costs of enrolling in the accreditation course.

It was also noted that the quality of internet services are variable in rural regions. One respondent, who accesses the internet regularly, claimed that 'line drop-out' and download speeds were concerns. He maintained that until internet services were more consistent and faster, he would be hesitant in enrolling in any formal on-line course.

Discussion and Implications

The qualitative comments provided in this section begin to shed light on the quantitative results reported previously. As such, the comments give meaning to some of the most substantial issues emerging in relation to the accreditation of coaches and officials. The broad implications of the findings are noted in the following discussion:

1. The development of mentoring systems is supported strongly, with both coaches and officials describing a range of benefits that can accrue from mentor-novice interaction. While the structure of mentor programs is open to debate, it would seem that most coaches and officials would prefer an informal mentor relationship. In view of this finding, sporting organisations need to provide flexibility in their mentor programs to allow coaches and officials to select mentors. However, a broader implication is that, to some degree, the selection of mentors needs to be monitored by sporting organisations to ensure the quality of coaches and officials chosen to act as mentors.
2. The provision of mentor programs has significant personnel implications for sporting organisations. This is particularly so if those people targeted as mentors are also active in their respective roles of coaches and officials. If this scenario is true, the time pressures placed on these people to meet additional mentoring responsibilities will be inhibiting. Given this probability, sporting organisations will need to consider available personnel, especially in rural regions, before initiating mentor programs.
3. The preference for coaches and officials to stay at their current level of accreditation does not appear to raise any significant implications. As evidence suggested people do not undertake coaching and officiating for career purposes, sporting organisations may consider the rationale of additional accreditation, and if the benefits derived from higher accreditation for coaches and officials are worth their associated time and expense.

4. The perceived value of on-line resources has implications for the ASC and NSOs. In particular, evidence has emerged, in this section and in earlier findings, that full accreditation courses should not be offered as a substitute for face-to-face instruction. However, comments suggested respondents were open to using on-line resources to supplement their learning. The exact nature of these resources is an issue for each sport and the ASC. However, it is probable that content shouldn't replicate what is covered in the course of a normal accreditation, and provide extension and additional insight into accreditation-related topics.

CONCLUSION

Through a mixture of qualitative and quantitative data, the findings presented in this chapter have provided further clarification of the factors that affect accreditation. In doing so, accrediting agencies and sporting organisations can begin to make strategic decisions that will allow them to maximise their accreditation resources. This is particularly pertinent to the development of on-line material, where the internet has been seen previously as a panacea for alternative course delivery.

Chapter Five

Recommendations

As a consequence of the findings presented in this report, 14 recommendations are made. These recommendations are made under two categories: recommendations for accrediting organisations; and recommendations for future research.

RECOMMENDATIONS FOR ACCREDITING ORGANISATIONS

It is recommended that:

- 1. national sporting organisations examine ways of defraying the costs of accreditation courses.**

This recommendation is made with the purpose of targeting specific groups within the community, especially females and rural candidates. This recommendation applies equally for coaches and officials.

Potential methods for defraying costs have been explored in Chapter 3, but by way of revision include: reduced course costs; travel subsidies; and dedicated scholarships. The financing of such measures, if adopted, need to be negotiated between national sporting organisations and their subsidiary organisations at state and regional levels.

- 2. accreditation courses maintain face-to-face instruction as the preferred mode of course delivery.**

This recommendation is made after the clear indication, from coaches and officials, that face-to-face instruction is the preferred mode of accreditation instruction. As noted in Chapter 3, this finding does not preclude the use and development of alternative modes of information dissemination. However, only qualified enthusiasm for varied delivery modes (such as the internet) was apparent in this investigation. Nevertheless, results indicated the application of technology to the learning process should still be encouraged.

3. national sporting organisations incorporate information literacy into accreditation courses.

Evidence emerged that the ‘difficulty gap’ between accreditation levels was perceived to be an accreditation barrier. A possible mechanism to minimise this perception is the development of ‘life-long learning’ skills by coaches and officials. To facilitate this mechanism, accreditation courses need to include content which is designed to provide coaches and officials with information and skills that enable them to access current information. Examples include: procedures for gaining access to documents through the National Sport Information Centre; using the internet (eg on-line journals and similar publication, sites dedicated specific sports); and, gaining access to associated sport-related agencies (eg Australian Sport Drug Agency).

4. the Australian Sports Commission consider restructuring the three tier accreditation system.

As a second strategy to overcome the difficulty gap between accreditation levels, it is suggested that the ASC, in conjunction with national sporting organisations, reassess the current structure. Specifically, it’s recommended that the current three tier structure be revamped into a structure of five or six levels. This will facilitate a more incremental development of coaches and officials.

Alternatively, the accreditation process may be reconfigured into a flatter structure; that is, after candidates attend a course, they continue to undertake advanced content in specified modules. Consequently, candidates begin to meet the requirements of the next accreditation level at a more gradual rate. When candidates finally go to the next accreditation level course, the volume of content delivered is not as large, and the complexity of concepts not as overwhelming. A caveat on this suggestion is that modules will need to be completed in a specified time (eg within two years).

5. all update courses and professional development/information sessions related to coaching and officiating be conducted within an accreditation framework.

The notion that knowledge and skills be obtained in an informal context was met with notably low levels of agreement by coaches and officials. As noted in Chapter 4,

national sporting organisations need to be cognisant of this finding, and structure information and skill sessions so that participant learning can be assessed, and accreditation update points allocated.

6. accreditation courses be conducted in a variety of rural regions.

Implementation of this recommendation will help to overcome the perceived barrier of geographical isolation felt strongly by rural coaches and officials. There are some financial implications for accreditation agencies in this measure (such as presenter travel and sustenance expenses), however, it is not envisaged that these implications will be significant.

7. the scheduling of accreditation courses take into account the potential time pressures on accreditation candidates.

The results showed clearly that occupational and family commitments present major barriers to accreditation. While suggestions for flexible scheduling are not offered in this report, accreditation agencies need to be mindful that personal circumstances, across differing cohorts of accreditation candidates, will not be homogeneous.

8. national sporting organisations explore the possibility of formalising mentor programs for coaches and officials.

While this recommendation has major logistical and financial implications which require consideration by national sporting organisations, mentoring programs remain one of the most significant aids to accreditation and improvement (this perception is held by coaches and officials). The potential benefits that mentoring programs will bring, particularly through raising overall standards in coaching and officiating, should outweigh possible logistical and financial concerns.

9. assessment procedures be reviewed by national sporting organisations so assessment is focused towards candidate learning.

Issues related to assessment were at the forefront of responses from coaches and officials. In particular, assessment as a form of learning was preferred to assessment being used for grading purposes only. With the strong pedagogical implication that

this recommendation carries, a philosophical shift in how national sporting organisations view assessment may be necessary for this recommendation to be met.

10. the Australian Sports Commission and state-based departments of sport and recreation undertake to promote more fully the work of sports officials.

Results indicated that officials perceived the level of respect they receive for doing their officiating tasks to be low. This finding articulates with the research literature and anecdotal evidence. As such, it is recommended the ASC and state-based departments of sport and recreation place an emphasis on promoting programs such as the current 'Thanks Ref/Official' campaign.

RECOMMENDATIONS FOR FUTURE RESEARCH

It is recommended that:

11. in relation to accreditation factors, the perceptions of coaches and officials, who desire to progress to higher levels of accreditation, be investigated more fully.

A notable finding from this research was that many coaches and officials are content to stay at their current level of accreditation. However, of additional interest are the perceptions of coaches and officials who exhibit a strong desire to advance their accreditation. Research of this nature will enable national sporting organisations to tailor accreditation programs to the needs and motivations of coaches and officials who are most likely to seek higher levels of accreditation.

12. the Australian Sports Commission adopt a substantive theoretical learning model to underpin the NCAS and NOAS accreditation framework.

This recommendation has its foundations in the rationale provided for Recommendation 4; that is, the perceived difficulty gap between accreditation levels. Given that there seems to be no evidence of a theoretical learning model that underpins the current three-tier accreditation system, a move towards basing accreditation on a substantive theoretical framework will aid in overcoming the 'gaps' that exist in the current accreditation structure.

13. the Australian Sports Commission conduct additional research into the perceptions of minor sports towards accreditation factors.

Results from this investigation revealed fencing coaches perceived most accreditation factors to be less helpful than soccer coaches did. However, this investigation was not able to determine why this finding occurred. Additional research is needed to determine if the finding was specific to fencing, or a general characteristic of minor sports.

14. individual sports investigate the specific accreditation needs of their coaches and officials.

The finding and recommendations detailed in this report provide a general picture of how coaches and officials perceive the accreditation process. However, as was noted in Chapter 2, the sample did not cover coaches and officials in all sports. Accordingly, it is recommended that individual sports undertake additional sport-specific research to determine relevant aids and barriers to accreditation. This will provide sports with detailed data that facilitates more accurate assessment of their accreditation practices.

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The University of New England

HUMAN RESEARCH ETHICS COMMITTEE

MEMORANDUM TO: Dr S Dickson/Dr I Ford
School of Curriculum Studies

This is to advise you that the Human Research Ethics Committee has approved the following:

PROJECT TITLE: The Double A Project (Advancement in Accreditation)

COMMENCEMENT DATE: 7/6/01

COMMITTEE APPROVAL No.: HE01/125

APPROVAL VALID TO: 6/6/04

COMMENTS:

The Committee approved this application with the following conditions:

- (i) The Information Sheet for Participants should explain in more detail what the researchers will be asking so that participants can have a full understanding of the research project.
- (ii) The Information Sheet for Participants should appear on UNE letterhead as well as the CRiLT letterhead.
- (iii) The Information Sheet for Participants should indicate that the data will be destroyed after a period of 5 years.
- (iv) No consent form is required for the survey part of this project. A consent form will be required for the interview stage and should be submitted to the HREC Secretary together with the interview questions.

The Human Research Ethics Committee may grant approval for up to a maximum of three years. For approval periods greater than 12 months, researchers are required to submit an application for renewal at each twelve-month period. All researchers are required to submit a Final Report at the completion of their project. The Renewal/Final Report Form is available at the following web address: http://rs-nt-10.une.edu.au/Home/V_2_1/ecforms.html

The *NHMRC National Statement on Ethical Conduct in Research Involving Humans* requires that researchers must report immediately to the Human Research Ethics Committee anything that might affect ethical acceptance of the protocol. This includes adverse reactions of participants, proposed changes in the protocol, and any other unforeseen events that might affect the continued ethical acceptability of the project.

7/6/01

Fiona Prater
Secretary



Advancement in Accreditation Project

Dear Sir/Madam,

The Australian Sports Commission has commissioned the University of New England to conduct research related to the progression of coaches through the **National Coaching Accreditation Scheme (NCAS)**. Selected sports have been targeted for this project, and are: basketball; bowls; cricket; fencing; netball; rudy union; rugby league; soccer; and, swimming. As an accredited coach in one of these sports, this project is seeking opinions from you on a range of issues concerning the process of coach accreditation. Specifically, the project is aimed at determining the factors that help, and hinder, progression through the coach accreditation levels.

To meet this end, a survey has been enclosed for you to complete (this will take approximately 15 minutes). The information that you provide will help the Australian Sports Commission, and national sporting organisations, tailor coach education courses that better meet the needs of coaches throughout Australia. It would be appreciated if you could complete and return the survey (in the prepaid return envelope provided) by the <<date>>.

At all times the right of privacy, confidentiality and respect for the participants will be observed. This study has been approved by the Human Ethics Review Committee of the University of New England. Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:

Research Services
University of New England
Armidale NSW 2351
Telephone: (02) 6773 3449 Facsimile: (02) 6773 3543
Email: Ethics@metz.une.edu.au

Data from this study will be stored according to the university's policies. Results from this study may be published in reports to the Australian Sports Commission, scientific journals and conference papers, but there will be no information identifying the participants by name in these documents.

If you have any further questions or concerns about this study, you can contact me on the phone number on the bottom of this sheet. Key findings and recommendations will be available at the Commission's coaching web site <http://www.coachingaus.org> from August 2001.

Thank you for taking the time to read this information sheet.

Yours sincerely,

Dr. Scott Dickson

Project Manager: Dr. Scott Dickson Phone: 02 6773 5092 Fax: 02 6773 5078 Email: sdickson@metz.une.edu.au



Advancement in Accreditation Project

Dear Sir/Madam,

The Australian Sports Commission has commissioned the University of New England to conduct research related to the progression of officials (referees, judges, marshals, umpires and stewards) through varying levels of officiating accreditation. Selected sports have been targeted for this project, and are: canoeing; hockey; polocrosse, rollersport; rugby union; and, volleyball. As an accredited official in one of these sports, this project is seeking opinions from you on a range of issues concerning the process of officiating accreditation. Specifically, the project is aimed at determining the factors that help, and hinder, progression through the officiating accreditation levels.

To meet this end, a survey has been enclosed for you to complete (this will take approximately 15 minutes). The information that you provide will help the Australian Sports Commission, and national sporting organisations, tailor officiating education courses that better meet the needs of officials throughout Australia. It would be appreciated if you could complete and return the survey (in the prepaid return envelope provided) by the <<date>>.

At all times the right of privacy, confidentiality and respect for the participants will be observed. This study has been approved by the Human Ethics Review Committee of the University of New England. Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:

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Data from this study will be stored according to the university's policies. Results from this study may be published in reports to the Australian Sports Commission, scientific journals and conference papers, but there will be no information identifying the participants by name in these documents.

If you have any further questions or concerns about this study, you can contact me on the phone number on the bottom of this sheet. Key findings and recommendations will be available at the Commission's officiating web site <http://www.officiatingaus.org> from August 2001.

Thank you for taking the time to read this information sheet.

Yours sincerely,

Dr. Scott Dickson
 15th May, 2001.

Project Manager: Dr. Scott Dickson Phone: 02 6773 5092 Fax: 02 6773 5078 Email: sdickson@metz.une.edu.au



School of Curriculum Studies

Armidale, NSW 2351 Australia
Telephone (02) 6773 5081 / 6773 5077 Facsimile (02) 6773 5078
email: CurricSt@metz.une.edu.au

<<date>>

Dear Sir/Madam

In your capacity as an accredited coach/official, I recently sent you a copy of a survey concerning factors that help or hinder the accreditation process. If you have completed the survey and returned it to me, thank you – your thoughts and opinions are most appreciated.

If you have not been able to complete the survey as yet, there is still time to complete and return the survey to me as soon as possible. If the survey has become lost and/or damaged, and you would still like to complete the survey, please contact me and I will forward a survey to you immediately.

Many thanks for your time and consideration.

Yours in sport,

Project Manager: Dr. Scott Dickson Phone: 02 6773 5092 Fax: 02 6773 5078 Email: sdickson@metz.une.edu.au

School of Curriculum Studies, Milton Building, University of New Australia.
England, Armidale NSW 2350, Australia.

As part of this investigation, it is intended to conduct a number of follow-up interviews. If you would like to make yourself available for these interviews, please provide your contact details before proceeding with the survey.

Name: _____ Telephone: _____ Email: _____

Address: _____

SECTION 1: DEMOGRAPHIC AND SPORT-RELATED INFORMATION

Please tick the appropriate box, or supply your answer in the space provided.

1. **Are you:** Male Female
2. **What is your age?** _____
3. **What is your *highest* educational qualification?**
 High School TAFE Undergraduate University Postgraduate University
4. **What is your annual income before taxes?** (your best estimate will be sufficient)
 \$0-5,000 \$5001-9,000 \$9,001-19,000 \$19,001-25,000 \$25,001-30,000
 \$30,001-38,000 \$38,001-50,000 \$50,001 and over
5. **Is English your first language?** Yes No
6. **Are you an Aboriginal or Torres Straits Islander?** Yes No
7. **In which part of Australia do you live?**
 NSW → Sydney Newcastle Wollongong Other area
 Victoria → Melbourne Geelong Ballarat/Bendigo Other area
 Queensland → Brisbane Townsville Cairns Other area
 South Australia → Adelaide Other area
 Western Australia → Perth Other area
 Tasmania → Hobart Launceston Other area
 Northern Territory → Darwin Alice Springs Other area
 Australian Capital Territory
8. **Which sport do you coach?** _____
(If you coach more than one sport, select one sport only from the list provided in the accompanying cover sheet)
9. **What is the level of your *current* accreditation for the sport selected in Question 8?** _____
10. **How long have you been at your *current* level of accreditation?**
 < 1 year 1-2 years 3-5 years 6-10 years more than 10 years
11. **Altogether, how many years have you been coaching since you were *first* accredited as a coach?**
 < 1 year 1-2 years 3-5 years 6-10 years more than 10 years
12. **Is coaching your primary source of income?** Yes No

13. How much income (before tax) would you earn from coaching in a normal year?

- nothing Up to \$499 \$500-\$999 \$1,000-\$4,999
 \$5,000-\$9,999 \$10,000-\$14,999 \$15,000-\$19,999 Over 20,000

14. Predominantly, do you coach: males females both**15. What age level/s do you normally coach? (tick all relevant boxes)**

- 5 years old or younger 5-12 years 13-19 years 20-30 years
 31-35 years 36-45 years 46-54 years over 55 years

16. Do you coach athletes who have a disability? (ie wheelchair, amputee, vision impaired, deaf, cerebral palsy, intellectual disability)

- Yes No

17. In a normal week during your season, how many hours would you spend in your coaching role ? (Please consider all aspects of your coaching role, including training, competition, meetings, planning.) _____**SECTION 2: FACTORS THAT HELP AND OBSTRUCT ACCREDITATION**

On the scale below, please indicate (with a tick) if you perceive the following issues to be a **help** or an **obstruction** in obtaining coaching accreditation.

| | | | | |
|------------------|-----------------|------------------|----------------------|-------------------------|
| Significant Help | Moderate Help | No Effect | Moderate Obstruction | Significant Obstruction |
| Sig Help | Mod Help | No Effect | Mod Obs | Sig Obs |
| ① | ② | ③ | ④ | ⑤ |

| Organisational issues that Help or Obstruct | | Sig Help | Mod Help | No Effect | Mod Obs | Sig Obs |
|---|---|----------|----------|-----------|---------|---------|
| 1.1 | the frequency with which accreditation courses are offered (eg once per year) | ① | ② | ③ | ④ | ⑤ |
| 1.2 | the time of the day or week courses are offered (e.g. evenings, weekends) | ① | ② | ③ | ④ | ⑤ |
| 1.3 | the geographical location of courses | ① | ② | ③ | ④ | ⑤ |
| 1.4 | specified criteria for attending courses (eg invitation only) | ① | ② | ③ | ④ | ⑤ |
| 1.5 | access to high standard athletes | ① | ② | ③ | ④ | ⑤ |
| 1.6 | support from state and regional directors of coaching | ① | ② | ③ | ④ | ⑤ |
| 1.7 | access to 'mentor' coaches | ① | ② | ③ | ④ | ⑤ |
| 1.8 | access to coaching organisations | ① | ② | ③ | ④ | ⑤ |
| 1.9 | the need to meet specified, or unspecified, criteria (eg hourly/ seasonal requirements) before undertaking higher accreditation | ① | ② | ③ | ④ | ⑤ |
| 1.10 | the need to access, and use, technology (eg the internet, CD ROMS, specific technical equipment) | ① | ② | ③ | ④ | ⑤ |
| 1.11 | the standard of athlete you are expected to coach (eg you must be a Level 3 coach to coach state players) | ① | ② | ③ | ④ | ⑤ |

| | | | | |
|------------------|-----------------|------------------|----------------------|-------------------------|
| Significant Help | Moderate Help | No Effect | Moderate Obstruction | Significant Obstruction |
| Sig Help | Mod Help | No Effect | Mod Obs | Sig Obs |
| ① | ② | ③ | ④ | ⑤ |

| Course accreditation issues that Help or Obstruct | Sig Help | Mod Help | No Effect | Mod Obs | Sig Obs |
|--|-----------------|-----------------|------------------|----------------|----------------|
| 2.1 course attendance requirements | ① | ② | ③ | ④ | ⑤ |
| 2.2 length of course (ie time commitment) | ① | ② | ③ | ④ | ⑤ |
| 2.3 pre-course requirements (eg readings) | ① | ② | ③ | ④ | ⑤ |
| 2.4 post-course requirements (eg workbooks, hourly requirements) | ① | ② | ③ | ④ | ⑤ |
| 2.5 the expense of accreditation courses (including instruction, specified texts and resource material) | ① | ② | ③ | ④ | ⑤ |
| 2.6 costs for travelling to accreditation courses | ① | ② | ③ | ④ | ⑤ |
| 2.7 the complexity of general principles content (eg planning, safety) | ① | ② | ③ | ④ | ⑤ |
| 2.8 the complexity of sport specific content (eg skill and tactical development) | ① | ② | ③ | ④ | ⑤ |
| 2.9 the difficulty 'gap' between each accreditation level | ① | ② | ③ | ④ | ⑤ |
| 2.10 the presentation of course material using face-to-face instruction | ① | ② | ③ | ④ | ⑤ |
| 2.11 the presentation of course material through distance education mode – text based | ① | ② | ③ | ④ | ⑤ |
| 2.12 the presentation of course material through distance education mode – internet based | ① | ② | ③ | ④ | ⑤ |
| Assessment issues that Help or Obstruct | Sig Help | Mod Help | No Effect | Mod Obs | Sig Obs |
| 3.1 recognition of prior learning and experience (eg previous coaching experience, other certification) | ① | ② | ③ | ④ | ⑤ |
| 3.2 the quality of assessors | ① | ② | ③ | ④ | ⑤ |
| 3.3 your personal rapport with assessors | ① | ② | ③ | ④ | ⑤ |
| 3.4 theory assessment requirements | ① | ② | ③ | ④ | ⑤ |
| 3.5 practical assessments conducted during course time | ① | ② | ③ | ④ | ⑤ |
| 3.6 field assessments with your athletes in your sporting environment | ① | ② | ③ | ④ | ⑤ |
| 3.7 the clarity of assessment criteria (ie I know exactly what is expected to pass accreditation assessment tasks) | ① | ② | ③ | ④ | ⑤ |
| Personal factors that Help or Obstruct | Sig Help | Mod Help | No Effect | Mod Obs | Sig Obs |
| 4.1 your occupational commitments (e.g. work hours) | ① | ② | ③ | ④ | ⑤ |
| 4.2 your family commitments | ① | ② | ③ | ④ | ⑤ |
| 4.3 your educational background | ① | ② | ③ | ④ | ⑤ |
| 4.4 your previous playing or competitive experience | ① | ② | ③ | ④ | ⑤ |
| 4.5 the level of recognition you gain, from local sporting organisations/ clubs, for obtaining higher accreditation levels | ① | ② | ③ | ④ | ⑤ |
| 4.6 potential financial rewards | ① | ② | ③ | ④ | ⑤ |
| 4.7 the standard of your communication skills | ① | ② | ③ | ④ | ⑤ |
| 4.8 the standard of your organisational skills | ① | ② | ③ | ④ | ⑤ |
| 4.9 your geographical location | ① | ② | ③ | ④ | ⑤ |

SECTION 3: LEVEL OF 'AGREEANCE'

On the scale below, please indicate (with a tick) your **agreement** or **disagreement** with the following statements.

| | | | | |
|----------------|------------------|-----------|---------------------|-------------------|
| Strongly Agree | Moderately Agree | Undecided | Moderately Disagree | Strongly Disagree |
| SA | MA | U | MD | SD |
| ① | ② | ③ | ④ | ⑤ |

| | SA | MA | U | MD | SD |
|---|----|----|---|----|----|
| 1. I anticipate the next accreditation level will be appropriate to my coaching needs. | ① | ② | ③ | ④ | ⑤ |
| 2. In my sport, sporting 'politics' plays a major part in determining who moves up the accreditation ladder. | ① | ② | ③ | ④ | ⑤ |
| 3. I prefer to obtain additional knowledge and skills informally, rather than undertake formal accreditation. | ① | ② | ③ | ④ | ⑤ |
| 4. I find assessment procedures intimidating. | ① | ② | ③ | ④ | ⑤ |
| 5. Assessors are accepting of innovative coaching methods. | ① | ② | ③ | ④ | ⑤ |
| 6. For me, self-assessment is a very effective form of performance feedback. | ① | ② | ③ | ④ | ⑤ |
| 7. Assessment should be used for grading purposes only. | ① | ② | ③ | ④ | ⑤ |
| 8. Assessment should be used as a form of feedback to facilitate learning. | ① | ② | ③ | ④ | ⑤ |
| 9. The possibility of failing assessment tasks concerns me. | ① | ② | ③ | ④ | ⑤ |
| 10. In my sport, people who present accreditation courses are high quality presenters. | ① | ② | ③ | ④ | ⑤ |
| 11. I am content to stay at my current accreditation level. | ① | ② | ③ | ④ | ⑤ |
| 12. General principles content (eg planning, safety) has relevance to my coaching. | ① | ② | ③ | ④ | ⑤ |
| 13. In my sport, I gain additional respect by being an accredited coach. | ① | ② | ③ | ④ | ⑤ |
| 14. I view coaching as a 'career'. | ① | ② | ③ | ④ | ⑤ |
| 15. Compulsory resource literature has been of relevance to my accreditation courses. | ① | ② | ③ | ④ | ⑤ |
| 16. NCAS resource material (eg <i>Better Coaching</i> text) is of use to me in my coaching role. | ① | ② | ③ | ④ | ⑤ |
| 17. I am interested in using online (Internet) resources. | ① | ② | ③ | ④ | ⑤ |
| 18. At the next accreditation level, I anticipate the required level of expertise will be too difficult for me. | ① | ② | ③ | ④ | ⑤ |

SECTION 4: ADDITIONAL COMMENTS

Please provide any general comments concerning the accreditation of coaches, or comments to clarify your previous responses.

| Question 3 | What is your highest educational qualification? | | | |
|------------|---|--------------------------|-----------|---------|
| | | | Frequency | Percent |
| | Coaches | High School | 258 | 37.8 |
| | | TAFE | 162 | 23.8 |
| | | Undergraduate university | 133 | 19.5 |
| | | Postgraduate university | 113 | 16.6 |
| | | Missing | 16 | 2.3 |
| | | Total | 682 | 100 |
| | | | Frequency | Percent |
| | Officials | High School | 71 | 37.4 |
| | | TAFE | 35 | 18.4 |
| | | Undergraduate university | 43 | 22.6 |
| | | Postgraduate university | 35 | 18.4 |
| | | Missing | 6 | 3.2 |
| | | Total | 190 | 100 |
| | | | Frequency | Percent |
| Question 4 | What is your annual income before taxes? | | | |
| | | | Frequency | Percent |
| | Coaches | 0-5000 | 71 | 10.4 |
| | | 5001-9000 | 34 | 5 |
| | | 9001-19000 | 68 | 10 |
| | | 19001-25000 | 51 | 7.5 |
| | | 25001-30000 | 47 | 6.9 |
| | | 30001-38000 | 60 | 8.8 |
| | | 38001-50000 | 122 | 17.9 |
| | | 50001 and over | 200 | 29.3 |
| | | Missing | 29 | 4.3 |
| | | Total | 682 | 100 |
| | | | Frequency | Percent |
| | Officials | 0-5000 | 27 | 14.2 |
| | | 5001-9000 | 10 | 5.3 |
| | | 9001-19000 | 17 | 8.9 |
| | | 19001-25000 | 14 | 7.4 |
| | | 25001-30000 | 19 | 10 |
| | | 30001-38000 | 8 | 4.2 |
| | | 38001-50000 | 26 | 13.7 |
| | | 50001 and over | 58 | 30.5 |
| | | Missing | 11 | 5.8 |
| | | Total | 190 | 100 |

| Question 6 | Are you an Aboriginal or Torres Straits Islander? | | | Frequency | Percent | |
|------------|---|---------|--------------|--------------|---------|------|
| | Coaches | | Yes | 5 | 0.7 | |
| | | | No | 664 | 97.4 | |
| | | Missing | | 13 | 1.9 | |
| | | Total | | 682 | 100 | |
| | | | | | | |
| | | | | Frequency | Percent | |
| | Officials | | Yes | 2 | 1.1 | |
| | | | | No | 183 | 96.3 |
| | | Missing | | 5 | 2.6 | |
| | | Total | | 190 | 100 | |
| | | | | | | |
| Question 8 | Which sport do you coach/officiate? | | | Frequency | Percent | |
| | Coaches | | | 2 | 0.3 | |
| | | | Basketball | 58 | 8.5 | |
| | | | Bowls | 73 | 10.7 | |
| | | | Cricket | 124 | 18.2 | |
| | | | Fencing | 19 | 2.8 | |
| | | | Hockey | 2 | 0.3 | |
| | | | Netball | 86 | 12.6 | |
| | | | Rugby League | 26 | 3.8 | |
| | | | Rugby Union | 62 | 9.1 | |
| | | | Soccer | 159 | 23.3 | |
| | | | Swimming | 70 | 10.3 | |
| | | | Missing | | 1 | 0.1 |
| | | Total | | 682 | 100 | |
| | | | | | | |
| | Officials | | Hockey | 89 | 46.8 | |
| | | | | Rugby Union | 30 | 15.8 |
| | | | | Canoeing | 18 | 9.5 |
| | | | | Polocrosse | 9 | 4.7 |
| | | | | Rollersports | 37 | 19.5 |
| | | | | Volleyball | 7 | 3.7 |
| | | | Total | | 190 | 100 |
| | | | | | | |
| Question 9 | What is the level of your current accreditation for the sport selected in Q. 8? | | | Frequency | Percent | |
| | Coaches | | | | | |
| | | | | 1 | 487 | 71.4 |
| | | | | 2 | 125 | 18.3 |
| | | | | 3 | 59 | 8.7 |
| | | | Missing | | 11 | 1.6 |
| | | Total | | 682 | 100 | |
| | | | | | | |
| | Officials | | | | | |
| | | | | 1 | 106 | 55.8 |
| | | | | 2 | 40 | 21.1 |
| | | | | 3 | 34 | 17.9 |
| | | | Missing | | 10 | 5.3 |
| | | Total | | 190 | 100 | |

| Question 10 | | How long have you been at your current level of accreditation? | | Frequency | Percent |
|--|------------|--|--|-----------|---------|
| Coaches | < 1 year | | | 67 | 9.8 |
| | 1-2 years | | | 255 | 37.4 |
| | 3-5 years | | | 164 | 24 |
| | 6-10 years | | | 115 | 16.9 |
| | > 10 years | | | 74 | 10.9 |
| | Missing | | | 7 | 1 |
| | Total | | | 682 | 100 |
| Officials | < 1 year | | | 33 | 17.4 |
| | 1-2 years | | | 64 | 33.7 |
| | 3-5 years | | | 44 | 23.2 |
| | 6-10 years | | | 26 | 13.7 |
| | > 10 years | | | 21 | 11.1 |
| | Missing | | | 2 | 1.1 |
| | Total | | | 190 | 100 |
| Question 11 Altogether, how many years have you been coaching since you were first accredited as a coach/official? | | | | | |
| | | | | Frequency | Percent |
| Coaches | 1 | | | 59 | 8.7 |
| | 2 | | | 185 | 27.1 |
| | 3 | | | 167 | 24.5 |
| | 4 | | | 129 | 18.9 |
| | 5 | | | 139 | 20.4 |
| | Missing | | | 3 | 0.4 |
| | Total | | | 682 | 100 |
| Officials | 1 | | | 12 | 6.3 |
| | 2 | | | 50 | 26.3 |
| | 3 | | | 40 | 21.1 |
| | 4 | | | 33 | 17.4 |
| | 5 | | | 53 | 27.9 |
| | Missing | | | 2 | 1.1 |
| | Total | | | 190 | 100 |
| Question 12 Is coaching/officiating your primary source of income? | | | | | |
| | | | | Frequency | Percent |
| Coaches | Yes | | | 58 | 8.5 |
| | No | | | 617 | 90.5 |
| | Missing | | | 7 | 1 |
| | Total | | | 682 | 100 |
| Officials | Yes | | | 8 | 4.2 |
| | No | | | 180 | 94.7 |
| | Missing | | | 2 | 1.1 |
| | Total | | | 190 | 100 |

| Question 13 | | How much income (before tax) would you earn from coaching in a normal year? | | | |
|---|-------------|---|-----------|---------|-----|
| | | | Frequency | Percent | |
| Coaches | 0 | | 484 | 71 | |
| | 1-499 | | 36 | 5.3 | |
| | 500-999 | | 32 | 4.7 | |
| | 1000-4999 | | 51 | 7.5 | |
| | 5000-9999 | | 22 | 3.2 | |
| | 10000-14999 | | 11 | 1.6 | |
| | 15000-19999 | | 8 | 1.2 | |
| | > 2000 | | 26 | 3.8 | |
| | | Missing | | 12 | 1.8 |
| | | Total | | 682 | 100 |
| Officials | 0 | | 134 | 70.5 | |
| | 1-499 | | 40 | 21.1 | |
| | 500-999 | | 9 | 4.7 | |
| | 1000-4999 | | 1 | 0.5 | |
| | 5000-9999 | | 0 | 0 | |
| | 10000-14999 | | 1 | 0.5 | |
| | 15000-19999 | | 0 | 0 | |
| | > 20000 | | 1 | 0.5 | |
| | | Missing | | 4 | 2.1 |
| | | Total | | 190 | 100 |
| Question 15 What age level/s do you normally coach/officiate? | | | | | |
| | | | Frequency | Percent | |
| Coaches | ≤ 5 | | 49 | 7.2 | |
| | 6-12 | | 360 | 52.8 | |
| | 13-19 | | 439 | 64.4 | |
| | 20-30 | | 193 | 23.8 | |
| | 31-35 | | 108 | 15.8 | |
| | 36-45 | | 86 | 12.6 | |
| | 46-54 | | 78 | 11.4 | |
| | ≥ 55 | | 85 | 12.5 | |
| Officials | ≤ 5 | | 9 | 4.7 | |
| | 6-12 | | 86 | 45.3 | |
| | 13-19 | | 157 | 82.6 | |
| | 20-30 | | 161 | 84.7 | |
| | 31-35 | | 132 | 69.5 | |
| | 36-45 | | 105 | 55.3 | |
| | 46-54 | | 75 | 39.5 | |
| | ≥ 55 | | 56 | 29.5 | |

| Question 16 | | Do you coach/officiate athletes who have a disability? | | Frequency | Percent |
|-------------|-------|--|--|-----------|---------|
| Coaches | | Yes | | 117 | 17.2 |
| | | No | | 558 | 81.8 |
| | | Both | | 0 | 99 |
| | | Missing | | 7 | 1 |
| | Total | | | 682 | 100 |
| Officials | | Yes | | 20 | 10.5 |
| | | No | | 162 | 85.3 |
| | | Both | | 1 | 0.5 |
| | | Missing | | 7 | 3.7 |
| | Total | | | 190 | 100 |

| Question 17 | | In a normal week during your season, how many hours would you spend in your coaching/officiating role ? | | | | |
|-------------|--|---|----------------|----------------|-------|-------------|
| | | N | HRS Minimum | HRS Maximum | Mean | Std. Deviat |
| Coaches | | 679 | 0 | 100 | 10.87 | 12.77 |
| Officials | | 190 | 0 | 42 | 6.45 | 5.98 |

| Accred Factor | Response Option | | | | | Missing | Total |
|------------------|-----------------|------|------|------|------|---------|-------|
| | 1 | 2 | 3 | 4 | 5 | | |
| Org | | | | | | | |
| 1.1 | 15.0 | 23.9 | 28.0 | 23.0 | 8.9 | 1.2 | 100 |
| 1.2 | 19.6 | 22.1 | 30.8 | 18.9 | 7.3 | 1.2 | 100 |
| 1.3 | 18.0 | 17.9 | 26.5 | 22.0 | 13.9 | 1.6 | 100 |
| 1.4 | 6.5 | 12.3 | 47.9 | 20.8 | 8.7 | 3.8 | 100 |
| 1.5 | 14.2 | 19.9 | 39.4 | 13.5 | 8.7 | 4.3 | 100 |
| 1.6 | 22.9 | 33.4 | 22.9 | 11.4 | 6.9 | 2.5 | 100 |
| 1.7 | 23.3 | 27.1 | 25.1 | 13.3 | 8.9 | 2.2 | 100 |
| 1.8 | 18.3 | 31.1 | 28.2 | 14.4 | 4.5 | 3.5 | 100 |
| 1.9 | 6.9 | 19.4 | 39.4 | 24.3 | 8.1 | 1.9 | 100 |
| 110 | 9.2 | 21.7 | 46.0 | 14.5 | 5.9 | 2.6 | 100 |
| 111 | 9.8 | 12.5 | 50.3 | 15.7 | 8.4 | 3.4 | 100 |
| Course Accred | | | | | | | |
| 2.1 | 12.9 | 22.3 | 37.5 | 19.4 | 4.5 | 3.4 | 100 |
| 2.2 | 9.2 | 19.5 | 32.3 | 29.8 | 6.5 | 2.8 | 100 |
| 2.3 | 9.4 | 22.7 | 49.7 | 12.9 | 2.2 | 3.1 | 100 |
| 2.4 | 7.8 | 22.6 | 38.3 | 20.8 | 5.9 | 4.7 | 100 |
| 2.5 | 4.7 | 6.9 | 35.3 | 32.7 | 17.0 | 3.4 | 100 |
| 2.6 | 2.6 | 2.9 | 45.9 | 31.1 | 14.8 | 2.6 | 100 |
| 2.7 | 8.7 | 23.9 | 54.4 | 7.9 | 1.0 | 4.1 | 100 |
| 2.8 | 18.2 | 28.2 | 39.1 | 8.8 | 1.6 | 4.1 | 100 |
| 2.9 | 2.5 | 13.8 | 49.9 | 22.4 | 6.9 | 4.5 | 100 |
| 210 | 31.5 | 29.2 | 26.7 | 6.7 | 2.3 | 3.5 | 100 |
| 211 | 6.7 | 19.6 | 47.5 | 16.4 | 4.8 | 4.8 | 100 |
| 212 | 8.8 | 16.6 | 47.2 | 14.1 | 7.5 | 5.9 | 100 |
| Assess | | | | | | | |
| 3.1 | 28.0 | 33.9 | 26.5 | 5.7 | 2.5 | 3.4 | 100 |
| 3.2 | 32.0 | 35.2 | 19.6 | 7.5 | 2.2 | 3.5 | 100 |
| 3.3 | 23.2 | 37.0 | 29.8 | 3.8 | 1.9 | 4.4 | 100 |
| 3.4 | 13.0 | 35.5 | 37.8 | 8.5 | 1.0 | 4.1 | 100 |
| 3.5 | 28.7 | 36.1 | 25.5 | 5.0 | 1.3 | 3.4 | 100 |
| 3.6 | 22.7 | 33.6 | 32.3 | 5.9 | 1.6 | 4.0 | 100 |
| 3.7 | 28.2 | 33.1 | 19.4 | 13.9 | 2.1 | 3.4 | 100 |
| Personal Factors | | | | | | | |
| 4.1 | 6.3 | 8.2 | 25.5 | 37.8 | 19.8 | 2.3 | 100 |
| 4.2 | 5.3 | 6.7 | 32.7 | 39.6 | 13.0 | 2.6 | 100 |
| 4.3 | 18.2 | 21.4 | 51.6 | 4.4 | 1.8 | 2.6 | 100 |
| 4.4 | 49.7 | 25.7 | 15.0 | 5.7 | 1.6 | 2.3 | 100 |
| 4.5 | 17.3 | 30.4 | 38.4 | 6.2 | 4.4 | 3.4 | 100 |
| 4.6 | 4.7 | 10.4 | 69.9 | 4.0 | 7.2 | 3.8 | 100 |
| 4.7 | 38.9 | 39.0 | 15.1 | 4.0 | 0.4 | 2.6 | 100 |
| 4.8 | 42.1 | 38.3 | 14.5 | 2.2 | 0.3 | 2.6 | 100 |
| 4.9 | 14.4 | 19.8 | 35.6 | 16.4 | 10.7 | 3.1 | 100 |

MANOVA FINDINGS

To determine the possibility of significant differences occurring between genders, regions, and accreditation levels, a 2 x 2 x 3 multivariate analysis of variance model was used. This model was selected on the basis of 2 genders (male/female), 2 regions (city/rural), and 3 accreditation levels (Level 1, 2, and 3). These variables acted as independent variables, while the four accreditation factor categories acted as dependent variables. As such, the model took account of 4 dependent variable, these being: Organisational Issues, Course Accreditation Issues Assessment, Issues, and Personal Factors.

Before the MANOVA test proceeded, it was necessary to 'convert' the ordinal Likert scale data into interval data. This was achieved through the generation of case estimates, using Rasch Scaling, for each dependent variable. Consequently, four scales were generated. This procedure allowed the position of each respondent to be identified for each dependent variable. Importantly, the Rasch technique is able to provide a *separation index* for cases. High indices infer the case separation is reliable, with indices over 0.7 considered acceptable.

Separation indices for each dependant variable were: Organisational Issues (.83); Course Accreditation Issues (.81); Assessment Issues (.79); and, Personal Factors (.65). Case estimates were then separated into coach and officiating sub-groups, and submitted for MANOVA procedures.

Detailed MANOVA analyses are provided in the following two pages.

MANOVA – Coach Data

The 2 x 2 x 3 MANOVA model revealed no interaction effects between the independent and dependent variable. In light of this result, a less rigorous procedure was followed to facilitate the analysis of possible findings within the context of the conceptual framework which guided this study. Accordingly, a series of one way between group multivariate analysis of variance were undertaken for each independent variable. For all analyses, assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity. No serious violations were noted. Multivariate tests for each dependent variable are shown in Table APP5.1:

Table APP 5.1 MANOVA results of significance – Coaches

| Variable | Test Name | Value | F | Hypoth. df | Error df | Sig. |
|---------------------|--------------------|-------|-------|------------|----------|-------|
| GENDER | Pillai's Trace | 0.025 | 4.118 | 4 | 632 | 0.003 |
| | Wilks' Lambda | 0.975 | 4.118 | 4 | 632 | 0.003 |
| | Hotelling's Trace | 0.026 | 4.118 | 4 | 632 | 0.003 |
| | Roy's Largest Root | 0.026 | 4.118 | 4 | 632 | 0.003 |
| REGION | Pillai's Trace | 0.046 | 7.181 | 4 | 591 | 0.000 |
| | Wilks' Lambda | 0.954 | 7.181 | 4 | 591 | 0.000 |
| | Hotelling's Trace | 0.049 | 7.181 | 4 | 591 | 0.000 |
| | Roy's Largest Root | 0.049 | 7.181 | 4 | 591 | 0.000 |
| ACCREDITATION LEVEL | Pillai's Trace | 0.024 | 1.895 | 8 | 1244 | 0.057 |
| | Wilks' Lambda | 0.976 | 1.9 | 8 | 1242 | 0.056 |
| | Hotelling's Trace | 0.025 | 1.905 | 8 | 1240 | 0.056 |
| | Roy's Largest Root | 0.022 | 3.465 | 4 | 622 | 0.008 |

Subsequent univariate step down tests for Gender and Region are shown below in Table APP5.2

Table APP 5.2. Univariate analysis tests for significance – Coaches

| Independent Variable | Dependent Variable | Mean Square | F | Sig. |
|----------------------|-----------------------|-------------|--------|-------|
| SEX | Organisational Issues | 2.073 | 3.184 | 0.075 |
| | Course Accred Issues | 3.268 | 4.934 | 0.027 |
| | Assessment Issues | 2.948 | 2.222 | 0.137 |
| | Personal Factors | 0.565 | 1.353 | 0.245 |
| REGION | Organisational Issues | 6.209 | 9.411 | 0.002 |
| | Course Accred Issues | 15.251 | 23.965 | 0.000 |
| | Assessment Issues | 1.493 | 1.122 | 0.290 |
| | Personal Factors | 3.314 | 8.726 | 0.003 |

MANOVA – Official Data

The procedure for analysing differences in the official data followed the same procedure as used for the coach data. As such, a 2 x 2 x 3 MANOVA model was used in the first instance. This analysis revealed no interaction effects between the independent and dependent variable.

Subsequently, a series of one way between group multivariate analysis of variance were undertaken for each independent variable. For all analyses, assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity. No serious violations were noted.

Table APP5.3 MANOVA results of significance – Officials:

| Effect | Test Name | Value | F | Hypoth. df | Error df | Sig. |
|---------------------|--------------------|--------------|----------|-------------------|-----------------|-------------|
| GENDER | Pillai's Trace | 0.045 | 2.067 | 4 | 176 | 0.087 |
| | Wilks' Lambda | 0.955 | 2.067 | 4 | 176 | 0.087 |
| | Hotelling's Trace | 0.047 | 2.067 | 4 | 176 | 0.087 |
| | Roy's Largest Root | 0.047 | 2.067 | 4 | 176 | 0.087 |
| REGION | Pillai's Trace | 0.017 | 0.746 | 4 | 175 | 0.562 |
| | Wilks' Lambda | 0.983 | 0.746 | 4 | 175 | 0.562 |
| | Hotelling's Trace | 0.017 | 0.746 | 4 | 175 | 0.562 |
| | Roy's Largest Root | 0.017 | 0.746 | 4 | 175 | 0.562 |
| ACCREDITATION LEVEL | Pillai's Trace | 0.029 | 0.615 | 8 | 336 | 0.765 |
| | Wilks' Lambda | 0.971 | 0.613 | 8 | 334 | 0.767 |
| | Hotelling's Trace | 0.029 | 0.61 | 8 | 332 | 0.769 |
| | Roy's Largest Root | 0.023 | 0.948 | 4 | 168 | 0.438 |

| Accred Factor | Response Option | | | | | Missing | Total |
|-------------------------|-----------------|------|------|------|------|---------|-------|
| | 1 | 2 | 3 | 4 | 5 | | |
| Org | | | | | | | |
| 1.1 | 12.1 | 21.1 | 22.1 | 31.1 | 12.1 | 1.6 | 100 |
| 1.2 | 17.4 | 21.6 | 29.5 | 22.6 | 6.3 | 2.6 | 100 |
| 1.3 | 13.2 | 20.0 | 20.5 | 26.8 | 17.9 | 1.6 | 100 |
| 1.4 | 7.4 | 11.1 | 53.7 | 18.4 | 6.8 | 2.6 | 100 |
| 1.5 | 11.1 | 21.1 | 43.2 | 15.3 | 4.7 | 4.7 | 100 |
| 1.6 | 25.3 | 35.3 | 18.9 | 13.2 | 5.8 | 1.6 | 100 |
| 1.7 | 22.6 | 34.2 | 17.4 | 16.8 | 5.8 | 3.2 | 100 |
| 1.8 | 11.1 | 36.3 | 31.6 | 15.8 | 2.6 | 2.6 | 100 |
| 1.9 | 6.8 | 18.9 | 36.8 | 30.0 | 5.3 | 2.1 | 100 |
| 110 | 8.4 | 14.2 | 63.2 | 9.5 | 2.6 | 2.1 | 100 |
| 111 | 20.5 | 21.6 | 36.8 | 13.7 | 4.2 | 3.2 | 100 |
| Course Accred | | | | | | | |
| 2.1 | 8.4 | 22.1 | 44.2 | 22.1 | 1.6 | 1.6 | 100 |
| 2.2 | 7.9 | 16.8 | 37.9 | 31.1 | 4.2 | 2.1 | 100 |
| 2.3 | 11.1 | 18.4 | 54.7 | 13.7 | | 2.1 | 100 |
| 2.4 | 5.8 | 19.5 | 43.7 | 25.3 | 4.2 | 1.6 | 100 |
| 2.5 | 3.7 | 7.4 | 39.5 | 34.7 | 13.2 | 1.6 | 100 |
| 2.6 | 3.2 | 4.7 | 32.6 | 35.8 | 21.6 | 2.1 | 100 |
| 2.7 | 3.7 | 14.2 | 54.2 | 21.1 | 5.3 | 1.6 | 100 |
| 2.8 | 12.1 | 20.0 | 45.3 | 18.9 | 1.1 | 2.6 | 100 |
| 2.9 | 2.1 | 12.6 | 51.1 | 26.8 | 4.7 | 2.6 | 100 |
| 210 | 29.5 | 32.1 | 24.2 | 12.6 | | 1.6 | 100 |
| 211 | 5.8 | 20.0 | 50.0 | 16.8 | 3.7 | 3.7 | 100 |
| 212 | 7.9 | 16.8 | 51.6 | 13.2 | 5.8 | 4.7 | 100 |
| Assess | | | | | | | |
| 3.1 | 27.9 | 31.6 | 29.5 | 7.9 | 1.1 | 2.1 | 100 |
| 3.2 | 35.8 | 29.5 | 15.8 | 15.8 | 1.1 | 2.1 | 100 |
| 3.3 | 24.2 | 36.8 | 23.7 | 10.5 | 2.1 | 2.6 | 100 |
| 3.4 | 10.0 | 36.3 | 40.5 | 8.4 | 2.1 | 2.6 | 100 |
| 3.5 | 27.9 | 36.3 | 24.2 | 7.4 | 2.1 | 2.1 | 100 |
| 3.6 | 35.3 | 28.9 | 24.2 | 7.4 | 1.6 | 2.6 | 100 |
| 3.7 | 27.4 | 30.0 | 14.7 | 24.2 | 2.1 | 1.6 | 100 |
| Personal Factors | | | | | | | |
| 4.1 | 2.6 | 3.7 | 29.5 | 36.8 | 25.3 | 2.1 | 100 |
| 4.2 | 2.1 | 5.8 | 34.2 | 43.2 | 13.2 | 1.6 | 100 |
| 4.3 | 12.1 | 16.3 | 65.8 | 3.7 | 0.5 | 1.6 | 100 |
| 4.4 | 43.7 | 30.0 | 18.4 | 4.2 | 1.6 | 2.1 | 100 |
| 4.5 | 17.4 | 30.5 | 34.7 | 11.1 | 3.7 | 2.6 | 100 |
| 4.6 | 3.7 | 8.4 | 68.9 | 6.8 | 9.5 | 2.6 | 100 |
| 4.7 | 34.2 | 37.9 | 21.6 | 3.2 | 0.5 | 2.6 | 100 |
| 4.8 | 33.2 | 43.2 | 16.8 | 3.7 | 1.1 | 2.1 | 100 |
| 4.9 | 10.0 | 22.6 | 27.4 | 25.3 | 12.6 | 2.1 | 100 |