

PSYCHOLOGICAL SKILLS TRAINING
FOR ELITE COACHES
IN THE CULTURAL TRADITION OF THAILAND

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Abstract

The purpose of this thesis was to examine the knowledge, interest, and use of sport psychology by elite coaches in Thailand and the effect of a psychological skills training program on knowledge, interest, and use. The thesis involved three linked studies, the first investigated initial knowledge, interest, and use, the second examined the effect of a psychological skills training (PST) program, on knowledge, interest, and use with an independent groups design, and the third examined the effect of a PST program on knowledge, interest, and use, based on a repeated measures design.

The participants in Study 1 were 42 Thai elite coaches (40 males and 2 females, Mean age = 37.93, SD = 8.61) from four selected sports, soccer (n = 8; Mean age = 40.25, SD = 6.04), boxing (n = 7; Mean age = 41.86, SD = 11.07), badminton (n = 14; Mean age = 32.57, SD = 6.06) and tennis (n = 13; Mean age = 40.15, SD = 8.91). These coaches volunteered to participate in this research. Questionnaires and a semi-structured interview were used to assess Thai elite coaches' self perceived knowledge, interest, and use of sport psychology. The 42 coaches were interviewed individually. After having a break of five minutes at the end of the interview, the three questionnaires were given to these coaches in the order of knowledge, interest, and use. Mean ratings of 11 aspects of PST were high for

knowledge, very high for interest, and moderately high for use. Interview responses suggested that the coaches knew little, did not use sport psychology much, but were very interested in its potential. The discrepancy between questionnaire and interview responses was attributed to a desire not to lose face in written responses. It was concluded that the coaches lacked knowledge and made little use of sport psychology techniques, but they were very interested in learning about this sport science that was largely new to them.

In Study 2, the 42 coaches from Study 1 were assigned at random, within each sport, to an experimental ($n = 21$) and control ($n = 21$) group. The coaches in the experimental group attended a four day PST workshop, while the control group coaches continued with their usual program. An immediate assessment was given to all the coaches after the experimental group finished the PST program, by administering similar semi-structured interviews and the same questionnaires as in the previous study, to coaches in the experimental group. Coaches in the control group were given the same interview and questionnaires as on the first occasion. The coaches in both groups were assessed again six months later, by giving the same questionnaire and interview questions as in the original assessment to the control group, whereas the experimental group were given a similar semi-structured interview and the same questionnaires as before. The results from

the questionnaires were supported by the interviews that consisted of questions that aimed to draw out the detail that could not be gleaned from the questionnaire responses. The findings were that the coaches in the experimental group gained significantly in knowledge from the PST program, much more than the coaches in the control group, who showed no change. The coaches in both groups reported very high interest in learning sport psychology, but only the mean for the experimental group increased significantly ($p < .05$) from the initial measurement. There were no significant differences in use between the two groups, because those who had attended the PST program had not yet had the opportunity to apply the knowledge with their athletes. When the coaches were interviewed six months later and they completed the questionnaires for a third time, there were no changes for the control group, but the experimental group reported knowledge and interest levels equivalent to those that were found in the immediate postprogram test, and significantly ($p < .05$) increased levels of use. It was concluded that the PST program increased knowledge and interest immediately and these increases were sustained, whereas use increased at the six month follow-up.

The 21 coaches in the control group from Study 2 participated in the repeated measures study, Study 3, in which they were given the same PST program, including all activities during and after the program, as

experienced by the experimental group coaches in Study 2. The results were largely consistent with those found for the experimental group in Study 2. Thai elite coaches clearly gained in knowledge after attending the PST program, and their initial high level of interest in learning sport psychology was at least sustained. Although there was no significant difference in use for the overall means, from immediately after the PST workshop to six months later, there were significant differences ($p < .0015$) for three individual questionnaire items, goal setting, relaxation, and imagery, that were supported by the interviews. It was concluded that knowledge was enhanced, whereas interest was very high all through the study, which continued for more than two years. Interview comments suggested that implementation appeared to be selective, depending partly on topics considered to be the most useful and partly on coaches being shown applied techniques during the PST workshop.

The findings from three linked studies confirmed the effectiveness of the PST program as a mode for transmitting knowledge of sport psychology for Thai elite coaches. It was also clearly shown that the interest in learning sport psychology started at a high level, but still increased after the coaches received more knowledge of PST from the four day program. At least some of the sport psychology techniques that had been presented in the PST

program were reportedly being used by coaches six months after they had participated in the PST program.

Although, this was the first research program on coach education in Thailand, it was welcomed by elite coaches and their superiors. The participants made some recommendations, including that the PST program should be presented to all Thai elite coaches, and that it would be valuable for the program to be given to coaches and their athletes at the same time. It was also suggested that workshops should be presented to one particular sport at a time, so that techniques could be presented in a sport specific context to enhance their meaningfulness. Some coaches even requested that they needed sport psychologists' help with the preparation of a PST program for their athletes. Accepting the positive attitudes of Thai elite coaches toward sport psychology, more research should be conducted for the benefit of coaches and athletes, not only in Thailand, but also in other countries where sport psychology is still new.

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Looking back over the past few years since I commenced my study in Australia, I have learnt a great deal and gained a lot of experience, both of which have broadened the scope of my thoughts. Along the way, I also faced a lot of problems concerning my study and my life; some of these were completely different situations from those in Thailand, my home country. Fortunately, I have met a lot of good people who kindly gave me sound advice and encouraged me to move forward; without them I am not sure how I would have coped with these problems alone. I feel a sense of gratitude to all of them from deep within my heart and this will remain there forever. I would like to take this opportunity to record my sincere thoughts.

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Dedication

To my father and mother who had dreamed that one day their son

would have an opportunity to study abroad

and

To my beloved wife, Dang,

who has, for a long time, been counting the days until my return:

I am coming home soon!

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Chapter 1: Introduction

The use of sport psychology for performance enhancement in elite sports performers has been widely accepted for more than twenty-five years by coaches, athletes, and sport participants in many countries (Williams & Straub, 1993). This is especially true in North America and Eastern Europe, where countries have succeeded in winning a large number of gold medals in the Olympic Games. Some sports administrators believe that this greater medal haul than other countries has occurred in part because these countries used sport psychology for training their athletes' mental skills.

Thailand is one of the countries in Asia that is very interested in individual and social development through sports. Thai athletes have been consistently sent to the Olympic Games since 1952 at Helsinki, Finland, up to the Olympic Games in 1996 at Atlanta, USA. Although Thai coaches and athletes have worked very hard for forty years, they still had not got any gold medals from the eleven Summer Olympic Games, from 1952 to 1992. Finally, in the 1996 Atlanta Olympic Games, Thailand got its very first gold medal from boxing. The manager and the head coach of the boxing team gave interviews to the media, stating that one of the important parts of this success came from the consistency of the long term programs in both physical and mental training.

Today, Thailand is preparing to be the host country for the 13th Asian Games at the end of 1998. Although Thailand has hosted these Games three times before (in 1966, 1970, and 1978), it is 20 years since the last time that Thailand was the host and sport in Asia has changed a lot in that period. Thus, it is important for this event to be successfully organised, and also for Thailand to be successful in terms of its athletes' performance at the event. Further, Thailand, by a decision of the cabinet, is bidding to be the host country for the 29th Olympic Games in 2008. It is Thailand's national sport policy to try to develop world class athletes in order to win more gold medals from the Asian Games and, especially, to gain additional gold medals from the Olympic Games to confirm the development of elite sport in Thailand.

In 1990, one of the leaders of physical education in Thailand attended the Asian Games Scientific Congress in Beijing. When he returned to Thailand, he stated that China succeeded in winning the most gold medals in the 1990 Asian Games at Beijing because China has been using sport psychology for ten years for training athletes' mental skills. He suggested that Thailand needs sports sciences, and especially sport psychology, for training athletes, both in physical and mental skills, in order to achieve excellence in Thai athletes in international competitions (Karnjanakit, 1990). It is, therefore, an important time in the development of sport

psychology in Thailand, and this research is designed to focus on a specific aspect of that development that is central to the implementation of sport psychology in elite sport in Thailand. Because the developments, being driven by the political leaders of Thailand, involve the use of Western methods and techniques, this thesis considers the introduction of sport psychology as practised in Western countries.

A crucial link in the chain of sport psychology provision for Thailand's elite sports performers is the national coaches. It has been recognised that, as perhaps the most powerful significant other for many elite athletes, the coach can have a big influence on the athlete's motivation and commitment to integrate aspects of sport psychology into their preparation. Further, in the Thai context, qualified sport psychologists are few in number, so the application of sport psychology in elite teams and squads is often likely to depend on direct intervention by coaches with knowledge of appropriate techniques and a positive attitude toward sport psychology. The first purpose of this research was, thus, to survey the current status of sport psychology among the coaches of national squads in some of Thailand's most successful and popular sports. In the second part of this research, a group of elite coaches from the same sports was invited by the agreement of the Sports Authority of Thailand to attend an applied sport psychology program and their immediate reactions to that program were examined.

After some time back in their sports, the impact of the program on the elite coaches' practices was examined. Finally, a number of elite coaches from those sports, who acted as a control group for comparison purposes in the previous study, completed the same applied sport psychology program in a repeated measures design. Again, their attitudes were re-examined several months later. The data collected was then considered in the light of current theory and research on sport psychology and coaching, as well as in terms of the special needs of Thai elite sport.

Chapter 2: Literature Review

In order to review the background to the topic of the current thesis the status of sport and sport science in Thailand is first considered leading to more focused examination of the provision of sport psychology to elite level athletes in Thailand in the early 1990's. This is followed by the consideration of coach education and practice in Thailand in order to examine the involvement of coaches in sport psychology and the role of coaches in relation to sport psychology more generally. The literature review then goes on to look at the conceptions of sport psychologists about the coaches' role in sport psychology delivery, considering this through the written views of sport psychologists as well as research on sport psychologist attitudes to the implementation of sport psychology techniques, especially psychological skills training (PST). The thesis then goes on to examine more closely the conceptions of coaches about their own role in sport psychology delivery, first considering common views held by coaches, then looking at research on coaches' attitudes and on coaches use of sport psychology. The literature review then considers research that has provided some form of training program in sport psychology for coaches and examined the way that it affected coaches' thoughts, feelings, and behaviour. The literature review concludes with a summary of theories

and research leading to the statement of the issues addressed by the present thesis.

Sport and Sport Science in Thailand

Sport in the Culture of Thailand.

Sport has been a central aspect of Thai culture since the reign of King Rama V or King Chulalongkorn (1868-1910). At that time Western culture was first brought to the Kingdom of Thailand. King Chulalongkorn himself considered sports to be vital for developing the body and mind. He then put physical education in the school curriculum and introduced the playing of badminton, croquet, tennis, football (soccer), rugby football, and boxing into the court and encouraged participation in the community. He also established a sports club called "Siam Sport" to run all forms of sport in the Kingdom. The first sport competition held in this reign was for school children and teachers. It was also said to be the first competition opened to the public. King Rama VI or King Vajiravudh (1910-1925) following in his father's footsteps, established the Boy Scouts for youth to lift sporting spirit in the Kingdom.

Sports activity gradually developed from that time, leading to participation in the 1st Asian Games in India in 1950, the 15th Olympic Games in Finland in 1952, and continued participation in those international games until the present day. Apart from being a regular participant,

Thailand has also been the host for the 1st South-East Asia Peninsula Games (SEAP Games) held in Bangkok in 1959. This is considered to have been the biggest step for Thailand in promoting sport. With the successful organisation of the SEAP Games, Thailand once again hosted the 5th, 6th, and 8th Asian Games respectively. As a result of these games, Thailand built more modern sports facilities, including a Velodrome, Indoor-stadium, Soccer stadium, Swimming pool, Gymnasium, Tennis centre and Hockey arena. A particularly memorable event in the 5th SEAP Games was that His Majesty the King (King Rama IX or King Phumiphol, the present King) and his elder daughter participated in the Yacht Racing and won the Gold Medal from that race. This made the Thai people more enthusiastic about playing sports and the Government then realized the importance of teaching sports and physical activity in schools. It established an organisation responsible for promoting sport throughout the Kingdom. The Sports Organisation of Thailand (which is now the Sports Authority of Thailand) as well as the Department of Physical Education, under the Ministry of Education, was given responsibility for promoting sports to the community and to youth. While each has other objectives, they share the common goal to develop physical and mental health and the sporting spirit of the nation.

Sports Organisations in Thailand

The promotion and encouragement of national participation in sport and physical exercises has been facilitated by the Government for different age-groups through a number of governmental sport bodies. These are briefly described.

Sports Authority of Thailand (SAT). The Sports Authority of Thailand was first established under the name of Sports Organization of Thailand (SPOT) by Royal Decree of Establishment on 12th September 1964 (Sports Authority of Thailand, 1990). The SPOT joined the status of State Enterprise attached to the office of the Prime Minister, and it was supervised by the Board of Management appointed by the Council of Ministers. During the first 20 years after this sport promotional body was set up, sport in Thailand became popular in the community much more generally, while the work and supervision of SPOT were rather limited. In order to expand the personnel and the scope of effective work, the status of SPOT, was then upgraded to create the Sports Authority of Thailand (SAT) by the Acts of Establishment on the 4th October 1985. The SAT now acts as a juristic entity with its head office located in Bangkok, and regional offices in the provinces. The objectives of the SAT are: (a) to promote sports; (b) to act as a cooperative centre for sports; (c) to conduct studies, analyses, project planning, statistics keeping, and evaluation on sports; (d) to give

support, advice and cooperation to sports; (e) to survey, construct, and upkeep sports facilities; (f) to make contact with and coordinate sports bodies inside and outside the country; (g) to supervise sports or activities related to sport or recreation; and (h) to engage in, promote, and encourage other business related to the benefit of sport (Sports Authority of Thailand, 1990).

The SAT's scope of work is: (a) to subsidise the Thailand National Olympic Committee annually, in sending athletes to participate in international competitions, such as Olympic Games, Asian Games, and South East Asian Games (SEA Games); (b) to subsidise the Board of University Games annually; (c) to subsidise local sport promotion committees annually; (d) to subsidise 25 sport associations registered under the SAT, for sending teams to participate in international competitions, paying the annual membership fees to the international federations, providing coaches; (e) to promote sport to other governmental bodies, institutes, and organisations, by advising them about sport theory and techniques, and also lending them sports equipment; (f) to organise basic sports courses for youth; (g) to organise basic and progressive sports courses for coaches and referees, for all regions in the country; (h) to publish guidelines on how to play sports, including rules and regulations for sharing between all inter-related libraries and schools; (i) to organise,

annually, the National Games, and the National Youth Games; (j) to construct and upkeep sport facilities for the community; (k) to provide sport science research, fitness testing, sport clinics, and related sport science and medicine; (l) to provide sports training services for eight indoor sports, namely badminton, basketball, Judo, table tennis, gymnastics, volleyball, boxing, aerobic dance, and exercise; (m) to provide outdoor sports training, in sports like swimming and soccer; (n) to promote sport for all; and (o) to conduct sports exchange programs with many countries, for the purpose of improving sport standards in Thailand (Sports Authority of Thailand, 1990).

To have the same guidelines for all sport government bodies, in order to operate and manage their works in the same direction, a Master Plan for National Sport Development was developed by the Cabinet and published on 30 May, 1989. This first national sport development plan consists of: (a) the Basic Sport Development Plan, which comprises sport in the school system, and out of school youth sport development (b) the Sport for Health Development Plan; (c) the Sport for Competition Development Plan; (d) the Nutrition Development for Sport Plan; (e) the Administration and Organisation Development in Sport Bodies; and (f) the Professional Sport Development Plan (Sports Authority of Thailand, 1990).

The organisation of the SAT consists of: (a) the Office of the Governor; (b) the Financial Department; (c) the Sport Facilities Development

Department; (d) the Sport Activity Department; (e) the Sport Development & Promotion Department, which comprises the Research and Development Division, and the Technical and Training Division; (f) the Sports Sciences Department, which comprises the Sports Sciences Division, and Sports Medicine Services Division (Sports Authority of Thailand, 1990).

The SAT has played a major role in sport development, particularly in promoting coaching education and sport science especially sport psychology, which has been given more of a focus, since the establishment of the Sport Psychology Society of Thailand in 1989. With reference to this sort of promotion, the Sports Authority of Thailand (1993) has carried out many projects, for instance, it has supported a research project on sport science for international competition, a demonstrating and teaching project by national coaches and athletes, a project examining the hiring of international coaches, a seminar project for basic level coaches, as well as for progressive level 1, progressive level 2, and progressive level 3 coaches. These projects seem to indicate that there should be a very good coaching education system in Thailand, but, unfortunately, this does not appear to be the case, because the SAT is not the only organisation that creates these kind of activities. Some other sport organisations, such as the Sport Association of Thailand and the Department of Physical of Education, also play a role in coach training, including it in their own annual projects and

assessing projects by their own standards. It appears that without a core sport coaching body controlling and coordinating these activities and the standard of their conduct, the developments might not be in the same direction and the aims and goals are not unified. The result is that, up to the time of reporting, Thailand still has no accreditation system for coach training in the country.

National Sport Associations (NSA). The main objectives of the NSA's are (a) organising and promoting sport activities, (b) supporting and assisting members, athletes, and committees in the conduct of sport activities; and (c) studying, researching, exchanging, and disseminating knowledge concerned with sport. Each national sport association in Thailand, for example, in badminton, boxing, soccer or tennis, has responsibility for governing and developing its own particular sport. Each national sport association has a committee to manage its own affairs. All NSAs are recognised and affiliated with the corresponding International Sport Federation. NSA's can be legally organised by the permission of the Sports Authority of Thailand. They are supervised by the Sports Authority of Thailand. Without the agreement of the Sports Authority of Thailand (SAT) no person or group of persons can conduct any sport activity on behalf of the nation.

The SAT currently supports 41 NSA's. Their development is described, in order to give a clearer picture of the development of sport in Thailand and the nation's involvement in international sport (Susaorat, 1997). The very first sport association to be established in Thailand, in 1916, was the Football Association of Thailand (Kalaboot, 1967). Those that followed were the Thai Rugby Union from 1937, the Amateur Athletic Association of Thailand from 1948, the Amateur Boxing Association of Thailand from 1949, the Badminton Association of Thailand from 1950, and the Basketball Association of Thailand from 1953.

Continuing development of those major sport associations, to the present, 41 sports associations are now recognised by the SAT. The sports associations of Thailand also have an important role to play in developing coach education in Thailand. According to Susaorat (1997), if sport associations are to develop successfully, it will be necessary for them to produce coaches all over the country, because these coaches will be the persons who train and develop the athletes in every location. Developing coaches should start with a specific organisation that is associated with the Government, and which is directly responsible only for producing and developing sport coaches. According to Susaorat, coach development could begin with promotion of the production of graduates or teachers in physical education and sports in the universities. The Government sport organisation

should co-operate with sport associations in order to organise seminars in coaching techniques for all coaches in Thailand, starting with training at the basic level, progressing to the intermediate level, and developing to the training of high level coaches. Susaorat proposed that seminars should be held twice a year in Bangkok, and once a year in every region of the country. The lecturers could be both international and Thai coaches. Further, through sport associations and with the co-operation of the Government, Thai coaches should be sent to attend coaching seminars outside the country to learn new coaching techniques. In addition, sport associations, in co-operation with sport and physical education institutes, should organise coach training courses that provide a range of knowledge and techniques, including the psychology of teaching, sport psychology, sports sciences, sports medicine, biomechanics, and other areas concerning knowledge related to coaching and sport.

The Department of Physical Education. The Department of Physical Education, under the Ministry of Education, is in charge of and responsible for: (a) promoting and supporting sport, health education, and recreation for students in schools and colleges, for youth and community education, and also for the conduct of research on the development of these services; (b) the education, management and production of teachers and personnel in the area of physical education, health education, and sport, and for the

organisation of seminars for physical education teachers and sport coaches; (c) in this regard, developing, promoting, and disseminating knowledge of sport science and sport medicine; and (d) keeping, controlling, and servicing all facilities and equipment, and also cooperating in sport facility design.

The Department of Physical Education also performs the vital function of training sport instructors from 17 physical education colleges located in the main populated areas of Thailand (Department of Physical Education, 1989).

The Department of Physical Education and its 17 physical education colleges have produced many physical educators. Some of them are elite athletes, others being teachers in schools, while some of them become coaches at all levels of sport. For example, they become school coaches, sport club coaches, elite coaches, and even national staff coaches.

University Sports Board. The University Sports Board promotes sport and recreational activities for college and university students under the guidance of their own institutions. The University Sports Board of Thailand is the governing body which encourages the tertiary institutions to provide sport and recreation opportunities for students. One of the most important jobs of this Board is the organisation of the University Games every year. The Board also sends Thai student athletes to participate in international

competition, such as the Asian University Games and the World University Games.

The University Sport Board itself is not concerned to a great extent with the role of the coaches, but the demand for the best coaches by the universities that want to win more medals, provides more job opportunities for coaches. Because of this involvement in competitive sports, universities recognise the need for the support of the sports sciences, especially sport psychology, as a service to athletes and coaches. Some universities provide sport psychology courses for their undergraduate students and organise some educational seminars in sport psychology and coaching education for coaches, such as in the Faculty of Physical Education at Srinakharinwirot University. Some universities offer sport psychology courses for graduate students, such as at the Department of Physical Education, Chulalongkorn University, Bangkok; the Department of Physical Education, Agricultural University, Bangkok; and the Department of Physical Education, Burapha University, Chonburi (Buatuan, 1993).

Service Sports Boards. Servicemen in the armed forces and policemen in the police force are encouraged to participate in sports by their separate sports boards, namely, the Army Sports Board, the Navy Sports Board and the Police Sports Committee. Many of the elite athletes from these forces have been selected to be in Thailand's national teams, and have participated

in international competitions. It is interesting to note that the first and only gold medal from the Olympic Games that Thailand has ever received was awarded to a boxer from the Navy Force squad at the 1996 Atlanta Olympic Games.

It is interesting to note that many of the elite athletes from the Armed Forces, after finishing their athletic career, become national head coaches or staff coaches, but without formal education in coaching or in the sports sciences. Thus, they must try to gain that knowledge later on from seminars, short training courses, or personal reading. A traditional example would be the twin coaches of the Amateur Athletic Association of Thailand, who have coached for 30 years and still hold very high rank in the Police Force at the same time (Khow-Sod, 1995). An up-to-date example is the first Olympic gold medal boxer, who aims to become a boxing coach after the Sydney Olympics in the year 2000.

Thailand National Olympic Committee. The Thailand National Olympic Committee is the centre of the Olympic movement in Thailand. It provides support for sports teams from Thailand to participate in international games (Anderson, 1989). The Thailand National Olympic Committee was formed in 1948, and in 1952 Thai athletes participated in the Helsinki Olympics for the first time. Since then Thailand has been quite active in the Summer Olympics and has been sending an increasing number

of athletes to compete each time. Within the Asian region, Thailand has participated in all Asian Games, since the first, which was held in India in 1950. The Asian Games is held every four years, mid-way between the Olympic Games. Thailand has hosted these Games three times before in 1966, 1970, and 1978. Thailand is now in the process of preparing to be the host country for the 13th Asian Games at the end of 1998. Thailand's Olympic Committee was also a prime mover of the creation of the Southeast Asian Peninsula (SEAP) Games, which were held for the first time in Bangkok, Thailand in 1959. The SEAP Games has been renamed the Southeast Asia Games (SEA Games) since 1977. In addition to forging Southeast Asian unity, one of its main objectives has been to raise the standard of Southeast Asian athletes.

Sport Science in Thailand. Sport science has been employed in Thailand for more than thirty years (Torrainin, 1993). The most well-known and widely used areas of sport science in Thailand are physiology of exercise and sport medicine. The Sport Science Centre, an important section of the Sports Authority of Thailand, provides services to athletes, coaches and the community, using knowledge of physiology of exercise and sport medicine, largely gained from study in Western countries like the United States. Services include physical fitness programs, physical fitness tests, and physical therapy. Many universities offer degree studies in the areas of

physiology of exercise and sport medicine, but unfortunately none of them offers degree studies in sport psychology or biomechanics, which are also recognised to be important branches of sports sciences. For example, the International Olympic Committee runs a sports science and sports medicine congress, the year before each Olympic Games, in the host country for that Olympics. It involves sports medicine, exercise physiology, biomechanics and sport psychology as its four main streams.

Sports sciences in Thailand began when Professor Eayu Ketusingha MD., who is regarded as the Father of Sport Science in Thailand, proposed his idea of establishing a Sport Science Centre to the Sports Organization of Thailand. His idea was accepted and the Sport Science Centre was established by the Sports Organization of Thailand in April 1966. Professor Eayu Ketusingha was invited to be the first Director of this Centre. He accepted the position without receiving any wage for his volunteer work until 1968. He was formally appointed by the Sport Organization of Thailand from 1968 to 1973.

Torranin (1993) indicated that, from 1973 to 1991, Dr. Charoentusna Jintanaseri MD was Director of the Sport Science Centre. Sport science has been developed systematically. A number of research projects have been conducted in order to develop Thai athletes' potential. Many services have been provided, such as fitness testing services for athletes, organising

seminars in sport science, medical treatment services for those who get injured in sport, and consultation services to promote safe practices in sport.

In 1980, the Department of Physical Education, in the Ministry of Education, established a Sport Clinic, providing similar services to the Sport Science Centre of the Sports Authority of Thailand, but with its emphasis on students and youth. In 1985, Mahidol University, Bangkok, established a Sport Medicine School for teaching students at the undergraduate level. This program produced the first B.Sc. degree in sport science in Thailand and, in 1987, the Faculty of Science in Mahidol University established a masters program in Work Physiology. In 1988, the Department of Physical Education, Faculty of Education, Chulalongkorn University, Bangkok, opened the first doctoral program in physical education. The program concentrated on the study of a range of courses in sport science and this Department planned to become the Faculty of Sport Science by 1996. In 1990, Khonkaen University, in Khonkaen, a northeastern province of Thailand, established a sports medicine centre to be the study and research centre in sports medicine in that region, heralding the expansion of services from the capital, Bangkok, to the rest of the country. Sport science has had an important role in upgrading the standard of sport in Thailand for more than thirty years. The branches of sport science which have been associated with the developments referred to here were mostly physiology of exercise

and sport medicine, because other branches of sport science, such as sport psychology and biomechanics were not well known to people in sport administration. As Charoen Wattanasin (Anderson, 1989), a well-known professor and critic of sport in Thailand, indicated, the development of sport in Thailand needed to incorporate the latest theoretical approaches to sport, including sport psychology. About biomechanics, Dr. Jaturaporn N. Nakhon MD. (1990) reported that biomechanics was quite new for Thailand, while other leading countries have studied and used its knowledge for a long time. The Sports Authority of Thailand still lacks this knowledge. The SAT has planned to develop biomechanics in the future by cooperating with universities in Thailand, as well as seeking advice and support from expert educators overseas. The SAT has provided a substantial budget to import equipment and technology from developed countries.

At the 13th National Seminar in 1990 held by the Health, Physical Education and Recreation Association of Thailand, there were 100 participants in a sports sciences group seminar. They discussed the needs of sport science and the problems of using the disciplines of the sports sciences for elite sports, mass sports, and exercise. The concluding report from this seminar pointed out that Thailand needed every branch of the sports sciences to enhance the preparation and development of Thai elite athletes and all who participate in sport and exercise. A range of problems were

recorded, along with suggestions for solving them. The problems for using sports sciences in preparation for and during competition included:

(a) personnel lacked the knowledge to apply the sports sciences; (b) lack of sports sciences personnel to work with athletes; (c) lack of equipment; (d) lack of support from the administrators; (e) lack of budget; (f) athletes do not have enough time to practice because of study time at school and demanding competition programs; (g) Lack of resources, such as training centres, for potential users; (h) students normally play sport for exercise, not for competition; (i) lack of support for younger athletes from parents; (j) the practitioners were confused because of the overlap between the roles and activities of the Sports Authority of Thailand, the Department of Physical Education, and national sports associations; (k) lack of cooperation between national sports associations and the Centre for Sport Science; and (l) the Centre for Sport Science does not have enough authority in the control of athletes' fitness.

The recommendations made by the experts at this seminar for solving the problems that they reported were: (a) workshops and seminars in the sports sciences should be held for every sport; (b) more sport science courses should be added to the physical education curriculum; (c) the Sport Science Centre should disseminate more sports sciences information; (d) coaches must know how to observe, judge, analyse, and solve all coaching

problems (e) coaches have to learn how to make simple sports sciences equipment for use in their coaching, as much as they can; (f) coaches should present all information that they get from sports sciences seminars to their administrators; (g) coaches should have plans and schedules for their training; (h) conditions should be created to motivate students to participate in sport; (i) schools should provide extra teaching and some special rights for athletes; (j) sports organisations should work in the same direction; (k) the Sport Science Centre should have the authority to make decisions about the athletes' physical fitness, that is, whether they are ready to compete (Kritpet, 1990).

Although the sports sciences have been employed in Thailand for more than 30 years, Thailand still lacks depth of expertise in the practice of many aspects of the sports sciences, as a result of the factors discussed earlier in this review. This indicates that there is very slow movement and change in the administration and organisation of sport in Thailand. Based on the foregoing discussion, the most important problem appears to be, not only an absence of sophisticated knowledge of the sports sciences, but also the lack of qualified people, who can deliver this sort of knowledge properly to coaches and athletes. One approach to the resolution of these problems would be by the organisation and presentation of more seminars and workshops, that provide coaches with knowledge in the sports sciences,

so that they can carry over what they learn to share with their athletes. Presenting sports sciences, especially sport psychology, to coaches by regular seminars and workshops may be an effective way to alleviate the problem of inadequate sports sciences support for athletes at the elite level, especially in developing countries. It is proposed that a series of research initiatives is needed to explore effective avenues for introducing knowledge of the sports sciences to coaches, as well as teaching the coaches how this knowledge can be directly applied to specific coaching situations.

The Sports Science Society of Thailand. After the two seminars on Research and Physical Fitness Development and Sport Science which were held in 1987 and 1988 at Mahidol University in Bangkok, many educators were interested to collaborate to develop the sports sciences in Thailand. Based on that interest, a meeting was held to organise the Sports Sciences Society of Thailand, involving six well-known sports sciences educators (Asst. Prof. Dr. Monthree Chilsamaya, MD., Asst. Prof. Dr. Nat Indrapana, Prof. Dr. Thirayudh Glinsukon, Assoc. Prof. Thyon Chentanez, Assoc. Prof. Pipat Cherdrungsi and Asst. Prof. Baurong Lewchalermwongse, titles and positions at that time) in December 1988. (Sports Science Society of Thailand, 1994)

This tentative sports sciences society had organised many seminars and activities on sports science before it was officially appointed to be the

Sports Science Society of Thailand (SSST) on March 22nd, 1991. The objectives of the society are: (a) to promote cooperation and ethical practice among the people who work in sport science and related areas; (b) to promote sport science learning, teaching, and to develop physical fitness and Thailand's sport circle in the future; (c) to promote sport science academic services for sport associations, government, and private organizations and for all the community; (d) to be the organising centre in academic, news, and sports sciences data for societies and related associations, and organisations in and outside the country; (e) to conduct activities that will be of benefit to members of the SSST and the community without political involvement.

Today, the SSST organises its own annual seminar, and special workshops. It also cooperates with other organisations and creates many activities in promoting the value of the sports sciences in Thai sport, including publication of two journals, one in Thai and the other in English language, namely the Bulletin of Sports Science and Technology (in Thai language) and the Thai Journal of Sports Science (in English language).

Although the SSST has succeeded in many aspects of developing the sports sciences in Thailand, it seems to be a difficult task to focus on each particular area of sports sciences, because it covers so many important elements of athlete preparation. In every area of sports sciences work, there

is the need to have a number of qualified and competent personnel and a substantial amount of financial support. As a branch of the sports sciences, sport psychology established its own organisation in 1989. This was not because of any conflict with the SSST. On the contrary, it had been planned for a long time, to serve the urgent needs of sport in Thailand for sport psychology support. The Sport Psychology Society has a potential role in the delivery of sport psychology services to elite sport, as well as offering possibilities for the organisation of training in the area of sport psychology for coaches. The development and activities of the Sport Psychology Society of Thailand are discussed in some detail in the next section.

Sport Psychology in Thailand

Thailand has been developing, in economic and social terms, towards becoming a newly-industrialised country. Its rapidly increasing urbanisation has led to the study of the development of full physical potential in the population. Physical education and sports are legitimate parts of education and play an important part in the personal development and well-being of society and the nation. Therefore, the nation needs mental health promotion programs as well as physical and spiritual flexibility to help overcome the problems of stress in the urban environment. In this regard, sport psychology has been suggested as a means of providing support, through academic teaching and research and applied work in sports, not only for

coping with people's mental problems but also for enhancing the potential of elite Thai athletes (Karnjanakit, 1989). Although its development has lagged behind exercise physiology and sports medicine, sport psychology has been progressing for ten years following the development of sport and sport science in Thailand. Its presence mostly appears to have been focused in university physical education courses, rather than in the education of coaches of elite athletes or in the training of the athletes themselves.

Sport psychology has only been introduced into Thailand during the past 10 years. It has been added to the physical education curriculum in some universities particularly by those physical educators who have studied for doctoral degrees in physical education in the United States. There has not been much growth in the discipline so far. It is still at the level of an introductory subject in sport psychology in most physical education departments, there being no specific study area of sport psychology in any university so far. This is largely because, although a number of physical educators became aware of sport psychology, almost none has specifically trained in that area in depth. Today, in Thailand, sport psychology is regarded as an innovation which ought to be quickly developed. Associate Professor Sombat Karnjanakit, a Thai physical education leader, who was the President of the Sport Psychology Society of Thailand for the period 1993-1994, offered the following view:

sport psychology is very new to Thailand. It is believed that sport psychology should be developed by means of study and research, and afterwards, it should be applied to use in professional programs. This is conceived to be a way to develop physical education and sports to a higher level (Karnjanakit, 1989, p. 26).

In recent years, a group of Thai physical education leaders realised that sport psychology is an important factor in the promotion of physical education, as well as for the enhancement of the peak performance of athletes. They established the Sport Psychology Society of Thailand in 1989, with the main purposes of promoting and spreading knowledge, study, and research in sport psychology. It was also proposed that this same organisation would be the centre for sharing educational information in sport psychology among members and organisations inside and outside the country (Sport Psychology Society of Thailand, 1989).

To develop sport psychology effectively in Thailand, Thai academics needed to consider, among other issues, the right time and appropriate strategy. The time was right, because the Thai Government had decided to create the First National Sport Development Plan (for 1988 - 1996). The Thai Government realised that its people constitute a very important resource for the development of the country. The Government has proposed that the health of Thai people must be well developed both in physical and

mental terms for them to be high quality citizens in order to ensure the progress of Thai society (Kulawanich, 1990). Therefore, the Thai Government provided a policy for promoting sport and exercise activities to develop the physical and mental qualities of Thai people. To this end, it established the Master Plan for National Sport Development to provide clear direction and guidelines to public and private sectors in order to ensure their cooperation in achieving this objective. This master plan consists of six sections: (a) Basic sport development plan, comprising of, sport in the school system, as well as the development of out of school youth sport; (b) Sport for Health development plan; (c) Sport for competition development plan; (d) Nutrition development for sport plan; (e) Administration and organization development plan in sport bodies; and (f) Professional sport development plan. Broadly, plans (a), (b), and (d) are concerned with mass participation in sport and exercise for physical health and psychological well-being, whereas plans (c) and (f) are directed to the development of elite Olympic and professional sport. Plan (e) refers to the administration needs to enact the other five plans, a network of mass participation, health promotion, and elite sport organisations.

Thailand was the host for the South East Asian Games or SEA Games in 1995. Thailand will also be the host for the Asian Games in 1999, and, according to Kulawanich (1990), Thailand aims to host the Olympic Games

in 2008. With these plans in mind the Thai Government is using all feasible, ethical means to promote sport for health and to emphasise the development of sport for international competition in order to win more gold medals from the SEA Games, the Asian Games, and from the Olympic Games. Thailand gained its first ever gold medal, in boxing, from the Olympics in Atlanta 1996, the twelfth Olympics attended by the Kingdom. Therefore, at this time, Thailand will welcome any developments in branches of sports sciences, that will help to enhance peak performance of Thai elite athletes.

According to Karnjanakit (1990), Thailand should emphasise the use of sports sciences, including sport psychology for the preparation of Thai athletes for excellence in international competitions. He proposed that sport educational institutes should cooperate with sport organisations and sport associations in order to apply sport theories to practice, for developing the optimum potential of Thai elite athletes. Karnjanakit claimed that the success of Chinese athletes, who won most gold medals in the 11th Asian Games in 1990, is a very good example of using sport sciences, especially sport psychology for elite athlete preparation. He pointed out that China has been applying sport psychology for mental preparation, along with physical training for the last 15 to 20 years. Karnjanakit proposed that the Western approach to sport psychology is of special interest in this respect. It has the

advantages of being well-developed, widely researched, and publicly documented in a range of applied texts and journals.

Innovations of sports sciences from the West have been introduced to Thailand in the past, and have been well accepted in both academic and sport fields. Sport medicine and especially the physiology of exercise have been brought into the physical education curriculum in many universities, since the 1970's. Today, there are physiology of exercise programs at the bachelor, master, and doctoral degree levels in Thailand. These educational developments have been applied to sport in the shape of the Sport Science Centre of the Sports Authority of Thailand which has been using physiology of exercise techniques for testing athletes' fitness for twenty years. All national athletes, especially the athletes who are going to compete in international tournaments, are now tested on a regular basis at this Centre. Sport medicine has also developed well in Thailand. All physical education institutes offer sport medicine courses for their students. The Sport Medicine Association of Thailand has published the Journal of the Sport Medicine of Thailand to disseminate knowledge about this area. This association has provided services in sport medicine and physical therapy for athletes through the cooperation of the Sport Science Centre and public hospitals. These practices are well accepted and have been integrated into Thai elite sport with no major difficulties.

Currently, sport psychology support services for elite athletes are not as well-developed as those in exercise physiology and sports medicine. In 1991, when this thesis was initiated, at least in terms of formal coach education, coaches in Thailand still lacked the knowledge to apply sport psychology with their athletes and also lacked qualified sport psychologists to work with their athletes (Kritpet, 1990). Despite the major Government commitment of the 1990's and the influx of resources, there are presently only a handful of providers of sport psychology services. They have varying qualifications, training, and experience, and can in no way provide adequate support to all Thai elite individual athletes and teams. Thailand still awaits the development of a training and accreditation program in sport psychology, to ensure the standards of service provided. It is believed that, as in other branches of the sports sciences, sport psychology can make a significant contribution and will be accepted in elite sport circles in Thailand, but more positive strategies for provision of a sport psychology support service are urgently needed.

A major component of an appropriate strategy for developing sport psychology in Thailand would be for applied sport psychology knowledge to be given directly to coaches. Dr. Charoentusna Jintanaseri, MD (1993), Director of the Sport Science Centre, SAT, has argued that the group of persons who will use sport psychology most are not doctors, nor educators,

but coaches, because coaches need to understand sport psychology thoroughly, so they can use it to organise good mental training programs for peak performance for their athletes. Moreover, they can enhance their capacities for coping with athletes' mental problems by gaining knowledge of sport psychology.

Although most people in sport circles in Thailand now recognise that sport psychology is very important for enhancing athletes' performance, a sufficient supply of knowledge and information in this field is just not available to coaches and athletes. All the same, a small amount of research had been done in the area of sport psychology in the form of theses by Masters and PhD students in some universities. That research is reviewed next, in order to see the trends, in terms of thesis topics, and the level of interest, in terms of the development of sport psychology research in Thailand, particularly as it compares with other research in physical education and the sports sciences.

Research on Sport Psychology in Thailand

Research in Thailand has mostly been conducted in the universities, by staff and especially by postgraduate students in the form of theses and dissertations. A review of the sports sciences theses completed in departments and faculties of physical education from the three universities that offer the strongest programs in this area was executed, in order to

examine the trend for sport psychology research in Thailand, especially that concerning coaches and sport psychology. The findings were that, although these three universities had provided physical education programs for a long period of time, there were very few theses in the area of sport psychology and only a small proportion of those concerned coaches.

Table 2.1

Theses in Sport Psychology Completed at Chulalongkorn, Srinakharinwirot, and Kasetsart Universities

Date	Author	Title
		Chulalongkorn U.
1988	Siripongse	Effects of Anapanasati Meditation on Basketball Shooting Accuracy
1989	Ruangvaraha	The Relationship between Level of Anxiety and Performance of Shooting Athletes in the 17th University Games of Thailand
1990	Getmaro	The Relationship between Anxiety in Sport Competition and Responsibility in Sport Training of Athletes in the 18th University Games of Thailand BE 2533
1991	Hosakul	Effects of Imagery Strategy Training on the Performance of the Volleyball Service

- 1992 Meranon Effects of Practising the Mindfulness
Meditation on Athletes' Anxiety
- 1992 Jumnongnain Effects of Meditation and Mental Imagery on
the Performance of Weight Lifting
- 1992 Tasnaina Selected Factors Affecting Success in Sport
Competition
- 1993 Saichalad A Study of Using Animism and Beliefs in
Superstition of Muay Thai Boxers in Thai
Boxing Championship Competition as
Perceived by Boxers, Team Heads, and
Coaches
- 1993 Jaithon Effects of Mental Imagery Training on Sprint
Swimming Performance
- 1993 Sontimuang A Study of Sport Psychology Techniques of
National Team and University Games
Coaches
- 1994 Prachnakorn A Comparison of Goal Setting and Imagery
on the Free Throw Shooting Performance of
Basketball

Srinakharinwirot U.

- 1984 Ratanarojanakool The Effect of Meditation Training on

		Reaction Time of Sprint Starting in High School Females
1985	Palapong	Anxiety Level of Thai Athletes
1989	Sukdee	Anxiety of Individual, Team, and Combative Sports Athletes
1989	Meesanga	Effects of Anxiety Reduction Modeling Applications upon Swimming Performances of Beginners
1993	Watanachai	State and Trait Anxiety of Pre SEA Games Athletes
1995	Yahorm	The Motivation in Females for Becoming a Weightlifter
<hr/>		
		Kasetsart U.
1992	Kaeyot	The Effects of Meditation Training upon Shooting Accuracy
1993	Chaiwiwatana	The Effect of Goal Setting upon Basketball Shooting Performance at the Free Throw Line by Female Higher Education Students
1993	Mongpraneet	The Effect of Muscle Relaxation Training upon the Reaction Time of the Football Players
<hr/>		

The Department of Physical Education, Chulalongkorn University is the longest established in postgraduate study in this field. It passed 811 theses in physical education, at masters or doctoral level, from 1969 to 1995. The vast majority of these are minor theses associated with coursework masters programs. As few as 11 (1.4%) of these theses clearly had themes in sport psychology. The first thesis completed in sport psychology was as recent as 1988, twenty years after physical education research started. The sport psychology thesis topics are presented in Table 2.1 to show the trend of research interest. The Department of Physical Education, Faculty of Physical Education, Srinakharinwirot University was the second university to develop postgraduate programs, including theses. This Department has produced 405 theses majoring in physical education from 1976 to 1996. Here all theses are part of coursework masters programs. Only six of these theses were completed in the field of sport psychology during that twenty year period. All six thesis topics (1.5%) are presented in Table 2.1. The third university to enter the postgraduate physical education field was Kasetsart University, through its Department of Physical Education, in the Faculty of Education. From the inception of such study in 1988 up to 1996, there have been 75 theses majoring in physical education. Only three of these theses (4%) were completed in the field of sport psychology. The topics are presented in Table 2.1. It is

interesting to note that all three theses completed in Kasetsart University are concerned with the use of PST techniques to enhance athletes' performance. Across the three universities, only 1.5% of physical education theses have been in sport psychology. Of these, the majority have been on psychological skills training issues. Meditation or relaxation was the focus of six theses, five of these considering effects on performance and another six theses were concerned with the related issue of anxiety, but only two of these focused on performance. Imagery was the theme of four theses, all relating imagery techniques to performance, and goal setting/motivation was examined in three theses. Only one thesis (0.08%) has examined the use of sport psychology techniques by coaches. This study compared elite and university level coaches and accessed self-reported use of sport psychology techniques by means of a questionnaire. One other thesis considered coaches perceptions, along with those of athletes and administrators, but it focused on culture specific issues related to animism and superstition, as opposed to the principal elements of psychological skills training. As noted at the end of Table 2.1, one other thesis, that was conducted through Chulalongkorn University, examined coaches use of sport psychology, but in the context of investigating this issue with respect to the sports sciences as a whole. Thus, it was not included in the sport psychology thesis figures, although it provides some of the most relevant information for the present thesis.

Saichalad (1993) examined the perceptions of Thai boxers, their team leaders and their coaches to the use of animism and superstition in competition. Perceptions were measured using a questionnaire to assess the level of use of animism and beliefs in superstition of the boxers, by self-report of the boxers, administrators, and coaches in Muay Thai boxing (the traditional Thai kick-boxing). The results indicated that the boxers, in general, were rated as having used animism and beliefs in superstition to a great extent, the same as happened to boxers at championship levels. The championship boxers were rated very high in using animism concerning the process of putting on and taking off the Mongkon (the Muay Thai headband), and Pha Prajiad (cotton arm ring). In addition, they were also rated very high in the beliefs that they should always smile before leaving their home, and must have no sexual intercourse before the competition. The results from this study reflected that the boxers, administrators, especially coaches, were still counting very much on non-scientific beliefs. It might be of more benefit to coaches, if they could be provided with more scientific knowledge, such as PST techniques, through coach education programs. Such up-to-date knowledge might be useful in assisting coaches in the development of more effective psychological skills for their boxers.

Sontimuang (1993) investigated the use of, and interest in sport psychology techniques by national and University Games coaches. Use of,

and interest in sport psychology were measured employing a questionnaire that asked about the 14 sport psychology techniques, which included mental toughness, positive attitude, motivation, attentional focus and concentration, goal setting, mental preparation strategies, aggression assertive behavior, emotion control, anxiety and stress control in competition, mental imagery and mental practice, coachability, negative attitude, leadership, and team cohesion/unity and harmony. A 5-point Likert rating scale response format was employed to examine the level of use and interest of the coaches. The conclusions reported were that (a) the Thai national coaches self-reported use of sport psychology techniques at a high level (3.76 out of 5). The three highest levels were goal setting, mental toughness, and team cohesion and harmony; (b) the University Games coaches also self-reported use of sport psychology techniques at a high level (3.55 out of 5), but the three highest ranking items were team cohesion and harmony, aggression, and mental toughness; (c) both the national coaches and University Games coaches desired to learn sport psychology techniques at very high levels (4.19 and 4.09 out of 5 respectively); (d) both the national coaches and University Games coaches attempted to use ideal sport psychology techniques at very high levels (4.17 and 4.19 out of 5 respectively); (e) there were no significant differences at the $p=.05$ level in the use of sport psychology techniques between the coaches of these two teams.

From the findings of Sontimuang's thesis, it is interesting to note that the five sport psychology techniques with highest use, according to Thai national coaches were: team cohesion and harmony, attentional focus and concentration, mental toughness, anxiety and stress control in competition, and mental preparation strategies. The five lowest rated techniques were: negative attitude, aggression and assertive behaviour, leadership, mental imagery and mental practice, and motivation. Sontimuang indicated that coaches paid less attention to a number of important techniques, such as imagery, motivation, and attention and concentration, so it might have been that coaches need to learn more about sport psychology which should be provided to coaches by appropriate organisations.

One other thesis is relevant to the present review. Buatuan (1993) studied the problems that coaches in the University Games experienced in using the sports sciences. The areas studied were sport physiology, sport medicine, sport psychology, sport nutrition, and sport management. Buatuan also used a questionnaire. For the area of sport psychology, the questionnaire included items on basic knowledge of sport psychology, co-operation in the team, athlete anxiety, communication, motivation, goal setting, relaxation, and imagery. It was concluded from this study that coaches' mean self-reported problems, on 4-point rating scales (1 = least, and 4 = most problematic) for sport nutrition, sport physiology, sport

management, sport medicine, and sport psychology were, respectively, 2.80, 2.64, 2.62, 2.6, and 2.47. Although there was no significant difference in problems in utilisation between those five disciplines of the sports sciences, it is interesting to note that problems of using sport psychology seemed to occur least. From responses to open-ended items, the most frequent comments from the coaches referred to their own lack of knowledge of and understanding about how to use sport psychology. It is possible that because the coaches did not know much about sport psychology and used very few psychological techniques with their players, their perception of psychological problems was an underestimate on the rating scales, that is one has to know about something to perceive it to be a problem.

The 20 sport psychology theses were supervised by university academics with expertise in sport psychology. In Thailand, the focus of university scholarship has been on teaching. Thus, these academics who have supervised student research on aspects of sport psychology have not produced published research themselves. Largely, their supervision is based on their own postgraduate experience and the knowledge they have gained from reading, associated with their teaching in the area. Only one university academic has produced research on a psychological skills training issue that has been published or presented internationally (Muangnapoe & Morris, 1995, 1997). Muangnapoe (1997) examined the effects of Anapanasati

meditation and progressive relaxation on perceived importance, perceived uncertainty, the components of multidimensional state anxiety, and performance, in a doctoral thesis submitted to Victoria University of Technology. One other piece of research by a Thai academic that was reported outside Thailand was that of Ratanarojanakool (1993), who examined the effect of meditation training on reaction time of sprint starting in high school females in a Masters thesis submitted to Srinakharinwirot University. This research was presented at the ISSP World Congress, in Singapore, in 1989.

Coach Education and Practice in Thailand

Coaches in Thailand, especially those that coach at the elite level, have mainly been well known elite athletes, who succeeded in national or international competitions. Some of them obtained undergraduate degrees in physical education from physical education colleges or universities. These physical education institutes typically provide some basic coaching courses, that could be used with student athletes in schools, when the physical education trainees become physical education teachers after graduation. Otherwise, many Thai coaches, including many of those that coach at the elite level, do not have any formal education in coaching, even in terms of basic coaching skills. They were good athletes who became coaches after retirement from their respective athletic careers. A well-known example of

this common progression from high level athlete to coach in Thailand was the statement of the famous twin head coaches of the Amateur Athletic Association of Thailand (Khow-Sod, 1994), that they had been in that association for 30 years, starting from being athletes and then becoming coaches. They stated that this was a long enough time for them to be involved, but before they retired they would try to persuade some of their excellent sprinters to becoming new staff coaches, and they would invite the German coach, who used to be their coach in the past, to come to teach these staff coaches in Thailand. This reflects the traditional process of coach recruitment and development in a country where coach training and accreditation did not exist.

Sport administrators and coaches in Thailand seem to believe that coaches from Western countries are more advanced in their knowledge and skills than coaches in their own country. As a consequence, many coaches from other countries, such as the USA, Germany, China, and Cuba, have been invited to visit or hired to coach Thai elite athletes for competition in major international events, such as the SEA Games, the Asian Games, and the Olympic Games. As a result of this, Thai coaches and athletes have learned new knowledge and gained more experience from those foreign coaches, and the outcome from the competitions seems to be satisfactory. This happened, for example, in the Football Association of Thailand, when

Carlos Roberto Carvalyo, a Brazilian coach, was invited by the Football Association of Thailand to coach the national football team in 1988-1989.

The main objective of importing a coach at that time was to give the opportunity for Thai coaches to learn new techniques from him.

Nevertheless, he led the team to the semi-finals of the Asian Games, in 1994, and that was the highest position in the history of football in Thailand (Khow-sod, 1995).

These seem to be the two main methods of coach “training” in Thailand. First, there is the progression from elite athlete to coach, that often perpetuates outmoded practices, based on the premise that “if it was good enough for my coach to train me, then it is good enough for me to employ in training the athletes in my charge”. Second, is the import of expert coaches from overseas, assuming that some of their knowledge and skills will be passed on to the local coaches. According to Dr. Sakchye Tapsuwan, the present Governor of the Sports Authority of Thailand (Personal communication, October 16th, 1996), there is no organisation that is officially responsible for controlling coaches’ qualifications in Thailand, as there are in many Western countries, including Australia. His view is that a “Coaching Council Incorporated” that promotes and controls coaches’ standards should be established in Thailand, in a similar way to the system in Australia, where the Australian Coaching Council Incorporated (ACC)

was an initiative of the Sport and Recreation Ministers' Council, which consists of the Commonwealth, State, and Territory Ministers responsible for sport. The ACC coordinates the development and maintenance of the National Coaching Accreditation Scheme, with its primary objectives being: (a) the establishment of a national education and accreditation scheme for all coaches in all sports; and (b) the provision of opportunities for all coaches to undertake some form of training in sports coaching (Australian Coaching Council Incorporated, 1990). The NCAS scheme has four levels of coach accreditation that apply across all sports in Australia. To attain each of these levels, progressively more extensive technical, teaching, management, and sports sciences knowledge and skills must be acquired. In the early 1990's, the ACC also introduced the High Performance Coach (HPC) Scheme, specifically for elite coaches, who already possessed the highest level of NCAS accreditation. To achieve HPC accreditation, an elite coach must conduct extensive independent project work, under the guidance of an appropriate expert, such as a sport physiologist, if the work is in the area of physical conditioning.

Similar organisations exist in other Western countries, such as the Coaching Association of Canada (CAC). This governmental body was formed to upgrade the standard of coaching in Canada. One of its components is the National Coaching Certification Program (NCCP),

through which coaches in all sports are provided with standard courses in sport organisation, teaching, and the sports sciences, including sport psychology. There are five levels of certification, each including theoretical, technical, and practical aspects. This is followed by scientific technical programs within the coach's sport with specific sport psychology input. All coaches, whether trained at university or through the club system, must be certified by NCCP certification programs. Coaches' knowledge bases expand as they move from Level 1 through Level 5. To date more than 360,000 Canadian coaches have passed through at least Level 1 of the program (Salmela, 1992).

In another leading country in sport, the USA, the American Sport Education Program (ASEP) plays a major role in providing coach education programs. Coaches must complete more requirements to get to each higher level, and that includes more sport psychology knowledge and techniques. The ASEP program consists of three levels of coach education. The first level, the Volunteer Level, is primarily focused on training youth sport coaches. The second level, the Leader Level, aims to train coaches who will work in interscholastic and club sport. The highest level, the Master Level, is for advanced and continuing education of coaches, which includes sport psychology, sport physiology, sport law, sport rehabilitation, nutrition and

weight control, teaching sport skills, sport administration, time management, sport injuries, and sport mechanics (Martens, 1997).

Although it started a little after the USA and Canada, the United Kingdom has also developed a government sponsored coach education and accreditation system. The National Coaching Foundation (NCF) was established by the UK government to develop and coordinate coach education, and to establish an accreditation scheme. The early version of the NCF program involved training for “grass roots” coaches that largely involved the development of coaching techniques for teaching the skills of the sport. This was done through the specific sport. More advanced levels of qualification, however, involved a blend of NCF courses and sport specific workshops. The courses in various aspects of the sports sciences and sports management were conducted in various centres around the country by qualified experts, who followed a tight curriculum, developed by expert advisers to the NCF. In the early 1990’s, an even more specific training system has emerged in response to the government’s requirement for all professions to have National Vocational Qualifications (NVQs), based on the competencies required to perform that job effectively. Delineating the competencies required for coaches, including sport psychology knowledge and skills appropriate to various levels of coaching, has permitted the NCF

to expand its coach education provision to achieve the aims of the NVQ system.

The Governor of the SAT and others interested in the development of coach education (e.g., Puakkaundee, 1988) realised that some form of structured training for coaches was necessary in Thailand. They also acknowledged that, as in the Western countries, in fact, perhaps more so in Thailand, there was a need for there to be one central, government sponsored body that controls, not only coach education, but also coach accreditation. At least at the higher levels of sport, sports associations must also commit to employing only coaches who have attained the national coach accreditation commensurate with that coaching position. The conception of a potentially effective coach education program seems to be in place, what is awaited now is research to support the claims and the political will to enact these ideas.

Because of the lack of sport psychologists in Thailand, coaches must shoulder much more responsibility in the delivery of this aspect of the sports sciences to their athletes. They are expected to understand and practice a range of activities in their coaching, including acquiring more knowledge in the sports sciences, and especially in sport psychology, for teaching or sharing with their athletes. Many suggestions and recommendations from senior people in sport in Thailand have supported

the idea of giving more education in the sports sciences, particularly sport psychology, to coaches. According to Boonsong (1990), no sport psychologists had been hired to work with sport associations or sport teams up to that time in Thailand. Boonsong proposed that it had to be the coaches' responsibility to attend sport psychology seminars in order to acquire at least the right basic sport psychology techniques to teach their athletes. A further recommendation was that the appropriate organisations, such as the SAT or universities, should offer applied sport psychology courses or educational seminars for coaches, especially coaches who worked with athletes at the elite level. Associate Professor Sombat Karnjanakit, the present President of the Sport Psychology Society of Thailand, suggested that it was the responsibility of coaches to prepare their athletes in terms of mental readiness for performance in competition. Coaches should teach the athletes and help them to cope with all mental problems they might have to face in competition (Karnjanakit, 1991). Professor Anun Attachu, of the Department of Physical Education, Chulalongkorn University, also supported the proposition that sport psychology had a very important role to play in enhancing the potential of athletes and helping them to achieve more success. Thus, coaches needed to know about sport psychology in order to utilise it in their coaching (Attachu, 1991). Furthermore, Sontimuang (1993) recommended, in his

doctoral thesis, that the important techniques of PST such as attention and concentration, and imagery should be taught to Thai coaches and athletes. Because the task of learning sport psychology techniques is highly demanding, education and training should be provided through the experts in sports organisations and educational institutes.

In conclusion, there seems to be agreement that there is a need for a formal coach education system in Thailand, in the style that has been developed in Australia, by the Australian Coaching Council, and in the USA, Canada, and the UK, for example. As in the Australian system, this could have three main objectives; (a) to improve the standard of coaching available to all Thai coaches, at all levels of sport; (b) to develop coaching as a profession and improve the status of coaches and coaching in Thailand; and (c) to ensure the development and implementation of a national policy and action strategies for coaching in Thailand. Part of that coach education would be training in sport psychology, especially at higher levels of coaching. This means that it is important to determine whether coaches in Thailand are competent to deliver sport psychology, whether they are receptive to doing this, and what are the most effective methods of training coaches in sport psychology, if it is confirmed that such training is appropriate.

To summarise this section on sport and the sports sciences in Thailand, it should first be noted that, while sport has been a part of Thai culture for over 100 years, it is only in the last 40 years that Thailand has become involved in major international sport on a broad front, and considerably less than that time during which there has been a substantial commitment to the sports sciences. The pattern of masters and doctoral thesis topics in physical education, which basically reflects all the research in this field in Thailand, showed that a very small percentage of academic research has been conducted in sport psychology, and only two of those theses really addressed issues of coaches' interest in and use of sport psychology. Further, sport psychology has only recently been organised nationally and the nascent group has few members, most not formally qualified in the field. It has done little to act to establish sport psychology training or service provision to elite sport. Coach education has no central, driving agency, so it is fragmented and uncoordinated. Again, there is no system of national accreditation. Elite coaches in Thailand could certainly benefit from training in sport psychology that would allow them to become the main provider of psychological support to their athletes, hopefully linked to a developing sport psychology community. To explore whether this is an appropriate approach, it is relevant to consider theory and research from Western cultures on the delivery of sport psychology by coaches at the elite level.

Psychologists' Conceptions of the Coach's Role in Sport Psychology Delivery

Review of the situation in elite sport in Thailand has indicated that the rapid development of Olympic and professional sport has not been matched by the evolution of sports sciences services, especially in the area of sport psychology. It is suggested that the delivery of sport psychology might be placed in the hands of elite coaches, who themselves are trained and supported by sport psychologists. It is, thus, relevant to consider the views of sport psychologists about the delivery of psychological skills training in particular and sport psychology material in general by coaches at the elite level. Many sport psychologists have given their views about this in applied texts and papers. These views are summarised. In addition, a number of studies have surveyed sport psychologists about their practice in elite sport, including research questions about the role of the coach. Such studies are described in more detail in the following section.

Sport Psychologists' Views

Some sport psychologists have proposed that sport psychology is a highly skilled area that requires substantial training to deliver, so only sport psychologists are really capable of presenting sport psychology training to athletes (e.g., Singer, 1984). Those who argue this view propose that sport psychologists should work directly with the athletes and must do all the

specific sport psychology training. This conception of sport psychology provision is likely to lead to sport psychology work being separated from the rest of the training of the athletes. This is probably a minority view, that most sport psychologists do not appear to espouse. In some cases, it might be associated with an attempt to establish or protect the profession.

An example of an eminent sport psychologist writing about what the sport psychologist can do for the coach was a paper by Singer (1984). Singer proposed a range of potential roles and functions for the sport psychologist. These included the roles of: (a) scientist, developing the body of knowledge; (b) scholar, transmitting the body of knowledge; (c) intermediary, between the athletes and the coach; (d) psychodiagnostician, assessing athletic potential; (e) analyst, evaluating and advising on training and practice; (f) optimiser, enhancing performance potential; (g) counsellor, in which the major role that Singer focuses on is conflict management; (h) consultant, commenting on the conduct of the program; and (i) spokesperson, representing the welfare of the athletes. Nowhere in this paper, and in particular not in the sections on optimising performance, counselling, or consulting, does Singer mention the possibility that the coach might be involved in delivery. Singer concludes the paper by stating that:

with so many athletes who drop-out of sport, who develop frustrations, who are confused and dissatisfied, and who do not realize their performance potential, sport psychologists may have a more central role in the guidance of athletes and programs than heretofore realised.

(p. 60).

An intermediate position is the view that sport psychologists should work in partnership with the athlete and the coach. This means the sport psychologist consults with the coach at all times and tries to ensure that the sport psychology training is consistent with what the coach has in mind. The psychologist's plans are developed in conjunction with the coach and the program that emerges is checked with the coach to ensure it is appropriate. As work progresses, the psychologist discusses progress with the coach and modifies the program on the basis of feedback that the coach gives. Morris (1986) described the development of such a program with the English Table Tennis Team. Initially, the national coach invited the psychologist to participate and the two had detailed discussions about what the coach expected and what the psychologist could offer. Substantial observation and interviews with the players followed, with continued regular discussions between the coach and the psychologist. Further assessment, including psychological testing, then took place, with still more coach-psychologist discussion about general strategies. This led to the

development of a program, adapted to the individual needs of each player. As the program progressed, regular coach-psychologist meetings took place, as well as some coach-athlete discussions and some coach-athlete-psychologist sessions. At all times the coach displayed a very positive attitude to the sport psychology work, but did not become involved in it at all. Many similar descriptions are to be found in the literature (e.g., Connell, 1986; Horsley, 1995; Morris & Thomas, 1995).

The third general approach to the delivery of sport psychology, that has been widely proposed, occurs when the sport psychologist is able to give expert guidance, but the coach presents much of the basic psychological skills training, based on knowledge gleaned from direct instruction by and reading recommended by the sport psychologist (e.g., Cale & Crisfield, 1994; Danish & Hale, 1983; Martin & Duffield, 1994; McCann, 1992). This approach can emerge because of a belief held by the sport psychologist, and typically shared by the coach, that the coach is in the best position to deliver the sport psychology training, because the coach already has both credibility and influence with the players. It might also be felt that sport psychology training is most effective when it is integrated with the other aspects of training and the coach is the person who can most effectively achieve this. Some might harbour the concern that when sport psychology is delivered by an external expert, the ideas are automatically segregated from technical,

tactical, and physical preparation in the minds of the athletes. In some cases, coach delivery occurs because it is not financially viable or appropriate in terms of time constraints for the psychologist to work with the athletes all the time (e.g., Howe & Gordon, 1992). A somewhat extreme version of this view was proposed by Harris and Harris (1984). They argued that coaches and athletes are able to learn the principles of coping strategies and skills, but it is much harder to teach the concepts of competitive sport to psychologists, who have been trained in behavioural strategies and skills, but who have had little or no experience in a variety of competitive sports. As a result, people who know sport, especially coaches and athletes, are in a much better position to learn and to teach mental skills and strategies to control and regulate arousal for maximising performance. Thus, the coach or the athlete is the one who should be incorporating the psychological skills and strategies in practice and preparation for competition. Only for situations such as mental therapy or social disfunction, would the professional sport psychologist be needed to work directly with an athlete. When these particular situations occur, the coach can refer athletes for professional help.

Bond (1993) has also raised the issue of coaches performing psychological skills training. In an article discussing the future of sport psychology in Australia, Bond noted that:

...elite coaches and athletes are now much more educated in terms of basic mental skills for sport. ...Any coach has the ability to read the appropriate chapter in any one of a dozen or more quality sport psychology books and run some basic skill sessions with his/her athletes. (p. 8)

Although many sport psychologists would feel that this is an extreme statement, Bond's point is appreciated. He was indicating that it is possible for coaches to be trained to present basic psychological skills training. Later in the same article, Bond added:

It is no longer appropriate for sport psychologists to hang their professional hat on, or be seen to be the teachers of, basic mental skills for sport. We must continue to do some of that work, continue to teach coaches to do some of that work, but we must practice psychology if we are to continue to advance our profession and to contribute to Australian sport. (p. 9)

Thus, Bond pointed that coaches can do much of the basic psychological skills training in a country which is sophisticated in its sports resources. At least high coaches level should be competent to present basic psychological skills training.

Danish and Hale (1983) produced an early, seminal paper promulgating the view that sport psychology delivery should be undertaken by the coach.

Following closely on a paper presented to the sport psychology community (Danish & Hale, 1981), that argued for a developmental-educational approach to the delivery of sport psychology services, Danish and Hale (1983) aimed the same argument in the direction of the physical education and coaching community. In this later paper, Danish and Hale argued that the traditional model of sport psychology had been a remedial one, where clinical services were provided for athletes with deep-seated problems. They proposed that the remedial approach had not acknowledged or included the coach's expertise in working with athletes, nor recognised the special interpersonal relationships that exist between coach and athlete. Danish and Hale stated that: "Under the specialized-expert sport psychology model, coaches are often relegated to interested but helpless bystanders. As a result, some coaches may distrust clinical sport psychologists and the special relationship they develop with some athletes." (p. 11). Danish and Hale proposed the developmental-educational perspective, in which the emphasis is on personal growth and change. They argued that adoption of this model removes the need to rely on external experts, because sport psychology techniques are viewed as skills that can be learned like physical skills, by practice. Danish and Hale refer to the Eastern European model, where coaches are educated to train athletes in psychological skills. As well as learning the theory in professional courses, they are also instructed in

practical techniques for the enhancement of performance. They concluded that the professional curriculum for coach training in the future, as well as the role of coaches, who have been trained in this way, need to be carefully examined.

Another statement in support of the view that coaches should deliver sport psychology, or at least PST, was presented by Martens (1987) in his American coach education text on sport psychology. It is not surprising, in that context, that Martens argued that PST should be presented to coaches, because coaches will provide this training to their athletes. Martens stated that coaches represent the key to the success of PST. He proposed that coaches should know, understand, and believe in the value of PST, and teach their athletes on a daily basis, just as they teach and refine the athletes' physical skills daily. Martens also believed that coaches' commitment to the PST program will increase the athletes' commitment to the program as well. He claimed that some coaches ignore PST because they lack appropriate sport psychology knowledge. This will be a disadvantage to their athletes, while other athletes acquire more benefits from PST. This has been one of the more basic messages that has encouraged coaches and administrators to embrace sport psychology, that is, the argument that the opposition is using it, so your athletes are at a disadvantage. Martens also argued that coaches who can teach PST will

help their athletes avoid the frustrations of trial and error practising in acquiring psychological skills. He claimed that developing psychological skills increases the likelihood that physical and psychological processes will peak together. Martens did, however, make the distinction between educational and clinical sport psychology. He stated that, although coaches should prepare to act as educational sport psychologists, in order to teach PST techniques to their athletes, they should avoid attempting to function as clinical psychologists with athletes who have serious psychological problems. Martens suggested that in a team sport there should be at least two sport psychologists, one being the clinical sport psychologist, who supports and counsels athletes who have serious mental problems, the other being the coach, who teaches athletes physical training, and acts as an educational sport psychologist, teaching athletes the basic skills of PST, such as imagery skills, psychic energy management skills, stress management skills, attentional skills, and goal setting skills.

Hardy and Fazey (1990) also suggested that it is as important for coaches to help athletes to develop their mental skills, as it is for coaches to help their athletes develop physical skills. According to Hardy and Fazey, a good coach plays the role of educational sport psychologist to his or her athletes. Hardy and Fazey emphasised the point that the educational sport psychologist is one of the three main types of sport psychologist. This sport

psychology role is concerned with teaching normal, healthy athletes and coaches the mental skills that will allow them to remain healthy and to perform to their highest potential. The other two types of sport psychologist are clinical sport psychologists, who deal with psychological problems and disorders, and experimental sport psychologists, who work at establishing the psychological factors that contribute to progress and performance in sport.

Loehr (1989) also argued that coaches could become effective sport psychologists. In fact, he proposed that study of the best coaches has shown that they consistently provide opportunities for their athletes to develop their psychological skills, although when asked, they are often unaware that they are doing this. Loehr felt that the formal involvement of sport psychology in elite sport lagged behind the other sports sciences, in the American system at least, because the sport psychology profession had failed to provide appropriate educational opportunities for coaches. He claimed that coaches do recognise the value of sport psychology and will implement it, if they are suitably trained.

Ogilvie (1989) also supported the idea of giving more sport psychology training to coaches, so that they know about appropriate procedures and can understand and apply these with their athletes. He proposed that the potential contribution of sport psychology had to be sold through an

educational process, as is the case with any new consumer product. Thus, he argued that coaches and sports administrators needed to be educated by providing them with documentation to demonstrate that the systematic application of established psychological theories and principles has a place in athletics.

A more recent discussion of coaches involvement in sport psychology delivery reflects the views of Cathy Martin, one of the longest-standing and most widely experienced full-time applied sport psychologists in Australia. Martin has been associated with the South Australian Sports Institute for approximately 15 years. In a recent paper with a colleague from the Institute, Martin and Duffield (1994) made a number of pertinent points from this substantial experience of sport psychology delivery and of coaches. First, Martin and Duffield noted that the majority of coaches, today, recognise the importance of psychological factors in competing successfully in sport. Nevertheless, Martin and Duffield acknowledged that there are large variations in the extent to which coaches make formal use of sport psychology, although many coaches employ some psychological preparation techniques without being aware that they are doing it. In particular, Martin and Duffield expressed the view that many coaches who are interested in the potential of sport psychology would not use it because they felt they had insufficient information to do so. Martin and Duffield

proposed a number of reasons why coaches do not maximise the use of psychological skills training. These were (a) that some coaches lack the conviction that psychological skills training can improve their athletes, based on a belief that some athletes have “it” and some do not; (b) that time is limited, there are many things to do and there is no time to add another type of training activity; and (c) that many coaches are aware of psychological skills training, but feel unsure how to actually apply the training. The main focus of this paper by Martin and Duffield was to promote a new resource for coaches, comprising a workshop and a coaching guide designed specifically to help coaches to gain the knowledge and the practical skills to deliver PST. The main characteristic of the program is that it provides a lot of practical information and examples of how coaches can actually use PST techniques. Martin and Duffield noted that the program addresses time management concerns by proposing ways in which much of the training can be incorporated in physical and skill training. Similarly, they claimed that the program included “hundreds of suggestions for alternative exercises and strategies to get across the ideas covered.” (p. 116).

Howe and Gordon (1992) argued that coaches must become more involved in presenting mental skills to their athletes, if mental training is to be effective in sport. Further, they proposed that coaches need to be

empowered with regard to the presentation of sport psychology. By this they meant that coaches need to feel competent to present the basic components of a mental training program “easily and naturally” (p. 8) to athletes. Howe and Gordon reported comments from Canadian Coaching Certification Scheme (CCCS) Level 4 and 5 coaches, who entered an advanced program that they ran. The coaches suggested that they needed to learn how to use psychological skills themselves, that they needed to learn the process, to read, plan, and consult more, and that they needed to practice delivering psychological skills, including having examples presented, so they could see how it should be done. As a result of the course, Howe and Gordon concluded that the coaches were able to present the material effectively and that the coaches felt more comfortable about applying psychological skills training within the practical coaching that they did. Howe and Gordon proposed that the course demonstrated that coaches can deliver psychological skills training, as long as they have had a systematic education in suitable applied procedures. They claimed that the coaches moved from a “cognitive acceptance of the need for mental skills to a confident presentation of the techniques” (p. 8). The coaches also perceived themselves as capable of integrating the psychological skills within their usual training programs with their athletes. Howe and Gordon stated the belief that all coaches can benefit from the type of course that they

provided, which is important, in their view, because “the professional sport psychologist cannot hope to provide direct help to all athletes who need assistance, (so) the involvement of coaches is critical to prepare athletes mentally.” (p. 9).

A view from the perspective of sport psychologists working closely with the National Coaching Foundation (NCF) in the United Kingdom was recently presented by Cale and Crisfield (1994). They noted how the introduction by the British government of National Vocational Qualifications (NVQs), requiring occupations to establish standards in terms of competencies, had influenced the approach of the NCF. The importance of highlighting the competencies coaches needed, refined the notion of what a coach should do. Cale and Crisfield stated that, from the point of view of sport psychology, these developments made it clear that coaches needed to be well educated and trained in sport psychology, as it is recognised as part of the “coaching craft” (Lyle, 1986). They reported that the NCF had adopted an Open Learning approach, involving distance education, to meet the needs. From the perspective of professional sport psychology there was now an expectation that the “specialists” (their quotes) should deliver their discipline in a manner that related it to coaches in practical terms, in ways to which they could relate. They proposed that:

With this subtle shift to practising coaches deciding on and delivering the content of these educational programmes, some of the early scepticism about the utility of this “extra knowledge” has been eroded. Now many coaches are quite happy to accept the importance of psychological preparation and, more importantly, they are prepared to invest time and effort in learning the additional skills which may be important for their athletes. (p. 562)

Cale and Crisfield reported that the NCF has devised a number of modes of delivery for its programs, based on distance learning through a combination of written and audiovisual resources, and workshops. They reported two structures that were commonly being used by the NCF. The first involves a pre-workshop package on theory of key psychological intervention strategies. Then a two-day workshop builds on the theory and provides opportunities for practical experience of the strategies, under the guidance of the sport psychologist. Cale and Crisfield suggested, with a hint of criticism, that this approach is discipline driven, providing a set of psychological strategies learned away from the sport environment. The second approach to delivery of the program that they reported is more coach centred, being based on the development of profiles of athletes by the coaches before the workshop. These are then the basis for the introduction of the sport psychology material at a one-day workshop, the sport

psychologist integrating theoretical and research knowledge into practice by helping the coach to develop suitable psychological strategies for the athlete profiles presented. The sport psychologist works with the coaches rather than directing them. Included in the activities in the sport specific workshop are practical demonstrations of the psychological skills from experienced coaches provided by the National Governing Body (NGB) of the sport. Post-workshop there is a two month practice period, where coaches take the workshop material back to their athletes. The coach is also encouraged to develop a working relationship with a practising and accredited sport psychologist. Following this a second one-day workshop is held to discuss good and bad practice, again involving NGB volunteers. Cale and Crisfield appeared to favour this approach, suggesting that it is more soundly based on what has been learned about the problems coaches have with sport psychology and the approaches that coaches find most helpful.

The experiences of working with professional and elite Olympic athletes and the motives for promulgating sport psychology vary greatly between those cited above. Nonetheless, the sport psychologists cited here, whose comments appear to provide a representative review of the literature, almost all seem to promulgate the position that sport psychologists need to educate, that is, provide knowledge, and train, that is, show coaches how to apply sport psychology knowledge in practice. Those who make a

distinction, typically focus coach delivery on educational sport psychology, rather than counselling or clinical sport psychology, or research work.

Perhaps a pragmatic position that emerges from these views is that of a combination of the partnership and the coach delivery methods, where there are certain areas in which the expert sport psychologist must work directly with the athlete, such as refutation techniques in terms of rational emotion therapy or cognitive restructuring or counselling for personal problems. Here the sophisticated techniques depend on highly specialised training and there would be ethical concerns associated with a non-psychologist performing such techniques. On the other hand, there is a wide range of training techniques, in areas like relaxation, self-talk, meditation, self-affirmation, attention control exercises, confidence building, or goal setting, where the coach could be trained quite quickly and easily to do the work with the athletes, so that they can integrate it into their general training. In terms of the partnership approach, the coach would be in constant contact with the psychologist, who would become part of the support team.

Sport psychologists have also commented on why they believe coaches do not use sport psychology much in their work. Martin and Duffield's (1994) view was reported earlier. Martens (1987) argued that coaches were often enthusiastic about sport psychology, but did not employ it because they felt they did not have sufficient knowledge. Thus, the problem,

according to Martens, lies not in lack of interest, but in the absence of an appropriate system for the delivery of sport psychology to the coaches. Again, it should be noted that this statement was made in the book that presented such a delivery system, the American Coach Effectiveness Program (ACEP). Loehr (1989) claimed that coaches knew intuitively what was important in the psychological preparation of their athletes, but did not know how to implement it systematically. Weinberg and Gould (1995) proposed three reasons for the relative neglect of sport psychology by coaches. The first was lack of knowledge, and here Weinberg and Gould specifically emphasised the absence of an understanding about how to teach PST and to practice it. The second reason was that there was a belief among coaches that psychological skills are unchangeable, so if an athlete became anxious before competition, that is how that athlete is and cannot be changed. The third reason they proposed was that a mythology has grown up around sport psychology, again probably because of the lack of education. For example, it is widely believed that sport psychology is only for those with psychological problems, or that it is only for elite performers, that it provides “quick-fix” or immediate solutions, or simply that it is not useful. The view that coaches perceive sport psychology not to be useful is not supported by most of the writing by sport psychologists reviewed earlier. In general, it seems that the lack of adequate education and training

for coaches is considered to be the primary reason why coaches do not use sport psychology techniques in their work with athletes. The views cited here were mainly presented in the early days of the now well-established coach education programs of countries like the USA, Canada, Australia, and the United Kingdom, which were reviewed in the section on coach education. Nonetheless, Weinberg and Gould proposed the same view much more recently, so it is not clear to what extent the involvement of sport psychology in coach education programs has increased the application of psychological skills training by coaches, especially at the elite level. It is possible that research can shed more light on the attitudes of sport psychologists, as well as their perceptions of coach use of sport psychology. Nevertheless, the perspective that dominates this review of the conceptions of sport psychologists is that coaches are capable of delivering a large proportion of sport psychology techniques, that coaches should implement sport psychology, and that they should be empowered to do this by greater efforts from sport psychologists to provide more accessible applied programs, including access to relevant research literature.

Research on Sport Psychologists' Attitudes

The research is limited on sport psychologists' attitudes to the role of coaches in sport psychology implementation. This might reflect a degree of reticence on the part of sport psychologists to pass on a major aspect of their

work to another profession. It might also illustrate the perception of at least some sport psychologists that coaches already have enough to cope with. In any event, while the personal views of sport psychologists abound, there is limited empirical work on sport psychologists' attitudes to coaches implementing sport psychology. Gould, Tammen, Murphy, May (1989) developed the United States Olympic Committee (USOC) survey and circulated it to 47 sport psychology consultants, who had consulted with more than 25 Olympic sports, receiving 44 returns. The survey included objective and open-ended items on demographics of the consultants, types and amounts of consultancy, and opinions on future directions, and took about 45 minutes to complete. Although it should be recognised that this survey was not focused on the relationship between sport psychologists and coaches, the report by Gould et al. is noteworthy for the scant comment made by these 44 top level sport psychologists with respect to coaches. Individual coach consultations was reported to be a category of work conducted by these consultants, but the nature of the consultations was not described. It was also noted, briefly, that some group consultations occurred with coaches. The most substantial comment was a negative one. Problems with the coach was identified as a concern by nine of the sport psychology consultants, making it their third most common concern. Gould et al. suggested that sport psychology consultants need to learn to fit in with the

system, including lines of authority. They also need to increase their credibility with coaches. As a contrast to the limited contacts and relationships that US sport psychologists enjoyed with coaches, Gould et al. cited a paper by Roberts and Kimiecik (1989) that reported that coaches in the former German Democratic Republic (GDR) were actively involved in implementing athlete mental training.

Roberts and Kimiecik (1989) presented an interview with Dr Gerd Konzag, an eminent sport psychologist from the GDR. In answer to a question concerning how sport psychologists are utilised in the GDR, Konzag indicated that they did not do much of the sport psychology work directly with athletes. He stated that:

Our teachers and coaches are actively involved in mental training within the bounds of their professional activity....That means that they must also be trained in sport psychology....the sport psychologist is responsible for the education of the students [in physical education colleges], coaches, athletes, and officials too. The sport psychologists cannot do it all alone and primarily acts as an adviser to the coaches.

(pp. 73-74)

Konzag argued that one reason for this was that one person should be responsible for training an elite athlete, not a range of different people in different areas. The person who is in the best position to do it all is the

coach. According to Konzag, coaches understood that they had a responsibility to be trained in sport psychology and that training was one of the main roles of the sport psychologist. Konzag reported that the GDR had a very thorough training for coaches at the elite level. It took about 5 years and was highly specific to their needs. In addition, Konzag argued that GDR coaches were well prepared because a major effort was made to keep them well-informed about the results of research conducted by GDR sport psychologists, as well as the relevant findings from research carried out around the world, particularly in the West. In research, sport psychologists worked with coaches and athletes to try to solve the athletes' problems. This did prove problematic at times because the coaches wanted quick answers to very applied questions, so it was necessary for the sport psychologists to educate the coaches to appreciate the value of research for the development and performance of their athletes. When asked whether there was a system of psychological skills training for young athletes, Konzag explained that, because the coaches have been trained in the sports sciences, including sport psychology, they are the best people to decide what to include in the program of their athletes, the young as well as the elite athletes.

Roberts and Kimiecik (1989) concluded that the GDR system differed from that in the USA in two main ways. First, sport psychologists in the USA, typically worked directly with the athletes, "often only minimally

involving the coach” (p. 75). In the GDR, on the other hand, the main task of sport psychologists was to assist the coach, who largely applied the sport psychology techniques. Second, Roberts and Kimiecik noted that coaches in the GDR underwent a thorough training program that included “extensive education in sport psychology” (p. 75) and then they received up-to-date research information. Coaches in Western countries were often not required to have any formal training in sport psychology or to work closely with sport psychology researchers. Roberts and Kimiecik then discussed advantages and disadvantages of coaches implementing sport psychology in the context of the sport system in the USA and other Western countries. The first disadvantage that they noted was that sport psychologists in the West have much more extensive special training in sport psychology than coaches. Put another way, Western coaches typically do not have sufficient training in sport psychology to competently deliver psychological skills training to their athletes. Another disadvantage of coach implementation of sport psychology, according to Roberts and Kimiecik, was that athletes might prefer to discuss personal issues confidentially with someone other than the coach. Roberts and Kimiecik referred to the threat to personal disclosure by an athlete, when the counsellor, who is told the problems, is the coach, who is directly concerned with deciding whether the athlete is selected or how much playing time they receive. Many athletes might

simply not disclose to a coach in those circumstances for fear of being omitted from the team or left on the bench. Although this is certainly true of the more clinical approach to sport psychology, Roberts and Kimiecik did not recognise that disclosure of problems would not affect the delivery of educational sport psychology, as described earlier in the Danish and Hale (1983) model. In that approach, there is no need for the disclosure of “problems”, because the psychological skills are considered to be positive factors that can enhance personal development, as well as performance. An advantage of coach delivery that Roberts and Kimiecik pointed out is that communication problems might develop when more than one person was giving support to the athlete, as intimated by Konzag in his interview. If the coach is also providing sport psychology support, communication is all directly between the athlete and the coach, thus reducing the potential for lapses in communication to occur. On the basis of the interview with Konzag, Roberts and Kimiecik proposed that another advantage in coach implementation of sport psychology is that sport psychologists often do not fit in well with the coach and athletes, as noted in the study by Partington and Orlick (1987). This frequently occurs because sport psychologists have limited knowledge of the subculture of sport in general or the subculture of that specific sport. Roberts and Kimiecik pointed out that Williams (1986) had suggested that coaches who were trained in sport psychology could do a

lot to help implement sport psychology. Orlick (1986) had proposed, more specifically, that coaches should become involved in the psychological skills training programs of their athletes. Gould, Giannini, Krane, and Hodge (1988), in an unpublished study, found that Olympic level coaches overwhelmingly supported the development of elite coaching conferences, where they would learn about sport psychology and how to apply it. Gould et al. stated that there was a need for long-term and systematic programs of psychological skills training to be created by coaches. The argument was also put by Roberts and Kimiecik that it was not feasible for sport psychologists to work in any systematic way with coaches at all levels, so coaches at all levels need to develop psychological skills training knowledge and expertise, in order to implement psychological skills training for athletes with whom they work. This, again, highlighted the need for a coach education program in the USA and other Western countries, like that in the GDR. Roberts and Kimiecik stated that "Not until all coaches receive adequate training in sport psychology can they be expected to initiate and maintain quality mental training for athletes" (p. 77). They also emphasised the need for dissemination of sport psychology information to coaches, but did not note the need for this to be in a form that is useable by the coaches, as has been pointed out by Gould et al. (1987), for example.

More recently, Rice and Ostrow (1994) reported on part of a doctoral thesis by the first author. They mailed a survey concerning perceptions on coaches delivering psychological interventions to 211 members of the Association for the Advancement of Applied Sport Psychology (AAASP), receiving a 67.7% response rate (n=143). Those that had responded were mailed the same questionnaire again one year later, to examine reliability. This time 106 AAASP members responded, that is, 74% of the 143 members who had responded on the first. Test-retest reliability coefficients for various sections of the questionnaire were between .40 and .57, over the period of one year. Using an approach not adopted in any of the other studies found in this area, Rice and Ostrow conducted a factor analysis on the psychological intervention items. They found three factors, that represented groupings of sport psychology topics, based on the responses of these AAASP members. These were performance enhancement interventions, personal/developmental concerns, and clinical issues. A Multivariate Analysis of Variance (MANOVA) of the ratings for the three intervention areas did not reveal that any of the three intervention topics was considered to be significantly more appropriate to be delivered by coaches. It was noteworthy that AAASP members who came from a physical education training background were more inclined to support coach administration of certain psychological interventions than were

AAASP members whose training was in psychology. Despite the absence of significance in the MANOVA, Rice and Ostrow reported that the techniques that the physical education trained AAASP members felt coaches could most readily implement included imagery, relaxation techniques, and attention training, central aspects of psychological skills training. Again, the major finding in this study was that sport psychologists seemed to be willing to support coach delivery of sport psychology to athletes, which is consistent with much of the other work discussed here. It should be pointed out, however, that the source of information for this study did not make clear the process of selection of the AAASP member sample that was surveyed. Assuming this resulted in a representative sample of all AAASP members, that is of the majority of qualified North American sport psychologists, it is still possible that those that responded were the sport psychologists that were more favourable to the involvement of coaches in sport psychology implementation.

Other sources provide indirect support for the results found by Gould et al. (1987), Orlick and Partington (1987) investigated the views of 75 Canadian Olympic athletes about their sport psychology consultants. They used semi-structured interviews of some depth. Whereas a minority of consultants were evaluated positively, many were not and a principal reason appeared to be that they lacked personality characteristics to make them

approachable. The paper does not report any mention by these athletes of either their coaches' views about the sport psychologists or the coaches taking any role in the athletes' mental training. More pertinent to the present discussion, Partington and Orlick (1987) interviewed 17 national coaches about their views of sport psychology consultation. In the semi-structured interview, they asked two questions about the coaches' role in delivering sport psychology. First, coaches were asked "What role did you and/or others play in the mental training and psychological preparation of your athletes for practice and competition?" (Partington & Orlick, 1987, p. 96). Then the coaches responded to the question "How effective was your work and/or that of the consultant with the athlete in this area of mental training and psychological preparation?" (Partington & Orlick, 1987, p. 96). Since none of the sections in the results or discussion of this study mentions coach involvement or effectiveness, it must be assumed that the coaches did not consider that they provided any mental training or psychological preparation for their athletes. This seems to be consistent with the reports of North American sport psychologists, regarding their work with Olympic athletes (e.g., Gipson, McKenzie, & Lowe, 1989; Gordin & Henschen, 1989; Halliwell, 1989; May & Brown, 1989; Nideffer, 1989; Orlick, 1989; Salmela, 1989) or with professional teams (e.g., Botterill, 1990; Dorfman, 1990; Halliwell, 1990; Loehr, 1990; Neff, 1990; Ravizza, 1990; Rotella,

1990; Smith & Johnson, 1990). There seems to be a substantial disparity between what sport psychologists, including predominantly North American sport psychologists, proclaim to be the ideal working relationship with the coach and athletes and what the few survey and interview-based studies have found that they actually do. Although a small number of sport psychologists appear to possess the personal characteristics to create a rapport with the coach, most struggle to gain acceptance and recognition for their efforts from coaches, let alone the interest on behalf of those coaches to become involved in the provision of sport psychology themselves.

This view of the way sport psychologists perceive coaches is supported by comments made in a seminal paper for the 1990's by Vealey (1988). Vealey examined the books that were available at that time in sport psychology, as a means to describe what was common practice in sport psychology and to point to future directions. She employed content analysis as her research design, examining all books published in North America between 1980 and 1988 that considered PST. Vealey reported that, of the 27 books used in the content analysis, 16 (59%) were directed specifically at athletes and 8 (30%) were aimed at both athletes and coaches. One book was considered to be for sport psychologists and another was directed to sport psychologists and coaches. Only one book specifically targeted coaches. This was the coaches guide to sport psychology written by Martens

(1987), that is discussed elsewhere in this literature review. Vealey concluded that very few of the 27 books provided specific information for coaches on the delivery of PST. She noted that the exception was a companion to Orlick's (1986) book on psyching for sport that was itself directed at athletes, but was accompanied by a coaches' manual. Vealey states that this manual provides systematic information for coaches about how to conduct PST sessions with their athletes. In considering the groups who should be targeted for sport psychology implementation to be successful Vealey concludes:

Coaches are potential consumers of PST who have been largely overlooked. They have long been viewed as a key in the PST process, as they must enthusiastically endorse the skills and techniques being taught and implemented with their athletes. In Eastern European countries, almost all coaches are trained in psychological techniques and strategies in order to incorporate PST into their regular training programs....as is evident in the content analysis...North American books on PST are almost entirely targeted for athletes. Clearly it is important that more information on psychological skills and methods be developed to help coaches implement PST with their athletes.

(p. 323)

The opinions of sport psychologists and the small amount of research on their attitudes to sport psychology being delivered by coaches certainly appear to suggest that sport psychologists favour coach involvement. There is, however, little to see in the professional activities of sport psychologists, as a group, to indicate that they are doing very much to support the development of coach implementation of psychological skills.

Coaches' Conceptions of the Coach's Role in the Delivery of Sport Psychology

Elite level coaches frequently write about sport psychology. The appearance of chapters in books, papers in journals, and articles in magazines, that address the value of sport psychology in elite sport, has grown substantially in recent times, particularly reflecting the views of coaches at the elite level (e.g., Barham, 1992; Buceta, 1993; Coppel & Bennett, 1985; Field, 1993; Goldberg, 1992; Hogg, Labarda, & Hannula, 1995; Kogler, 1994; Krueger, 1988; Palmer, 1995; Sailes, 1994; Smith, 1994; Tuffey 1996; Williams, 1995). Such material more often gives the opinion of specific coaches about the need for sport psychology, than it discusses the coach's role.

Nevertheless, there are commentaries on the coach's role in sport psychology delivery that have been written by coaches (e.g., Barham, 1992; Buceta, 1993; Coppel & Bennett, 1985; Field, 1993; Firth, 1983; Goldberg, 1992; Hogg, Labarda, & Hannula, 1995; Krueger, 1988; Sailes, 1994;

Smith, 1994; Tuffey 1996). These are summarised in the following section.

Again, the number of empirical studies of coaches attitudes to coaches delivering sport psychology is not large, but there have been more investigations of this issue with coaches than with sport psychologists themselves. Research on coaches' attitudes to coach delivery of sport psychology is considered following the review of coaches' views.

Coaches' Views

Broadly, the views of coaches have become more positive with respect to the inclusion of sport psychology in the overall preparation of elite athletes. As noted in the previous section, coaches used to be uninformed and thus were inclined not to display high levels of enthusiasm (e.g., Weinberg & Gould, 1995). In major Western countries, the proliferation of sport psychologists at the elite level of most major professional and Olympic sports is one reason why coaches at this level at least, have become more sensitive to the need for sport psychology (e.g., Barham, 1992; Coppel & Bennett, 1985; Field, 1993; Firth, 1983; Goldberg, 1992; Hogg, Labarda, & Hannula, 1995; Krueger, 1988; Sailes, 1994; Tuffey 1996). Perhaps their understanding of what sport psychology can do has been enhanced more by the coach education programs of Western countries, most of which include more sophisticated sport psychology education and training, as the coaching

level rises (e.g., ASEP, CCCS, NCAS, NCF), than it has by the fear of being left behind in preparation methods by the opposition.

Despite the substantial amount of coach education in sport psychology that is now included in the formal training of coaches in most Western countries, there is not a great deal of published work in which coaches promote the application of sport psychology techniques, although this is a growing area, as demonstrated by some recent papers in coaching journals that promote the application of sport psychology in a specific sport or discuss ways to integrate sport psychology into the training program (e.g., Barham, 1992; Field, 1993; Goldberg, 1992; Hogg, Labarda, & Hannula, 1995; Kogler, 1994; Palmer, 1995; Sailes, 1994; Smith, 1994; Tuffey 1996). Another recent line of discussion concerns the experience of occupying the dual role of sport psychologist and coach or coach and sport psychologist. This refers, not to a professional coach acting as a sport psychologist, nor to a professional sport psychologist, practising coaching with limited training, but to the relatively rare individual who has gained qualifications and expertise in both areas. Kogler (1994) a coach and sport psychologist, who had great success in Czechoslovakia, before moving to the United States, probably qualifies as a borderline example here. Buceta (1993) has worked as a sport psychologist, who was not the coach and as a sport psychologist who was also the coach. He argued that only the person who is properly

qualified in both areas should attempt this dual role. He claimed that there were few situations where it would be inappropriate and that, in most circumstances, it was advantageous to the athletes for one person to occupy the dual role. Still, the number of people who do hold dual qualifications is limited, another being Davies in the field of rugby union, as reported by Williams (1995). Thus, on the basis of much of the recent writing about sport psychology by coaches, it seems likely that coaches will not train as sport psychologists in large numbers in the foreseeable future, but that they are becoming more amenable to the integration of sport psychology techniques into their programs and might be more receptive to taking on some responsibility for sport psychology delivery.

Research on Coaches' Attitudes to Sport Psychology

Although many sport psychologists and coaches have written about coaches and sport psychology, research on coaches' interest in, attitudes to, and use of sport psychology is limited. An early study in the modern era of sport psychology was initiated by the Sport Psychology Academy of the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD). Silva (1984) reported on this study, which took the form of a national survey of high school and college coaches. The study aimed to identify the general and specific areas of sport psychology considered to be important by these coaches, to investigate the ways in which coaches saw

sport psychology being integrated into their programs, and to increase the visibility of sport psychology in the coaching community. The researchers mailed out 640 questionnaires and received 236 usable replies. Of the respondents, 90% stated that sport psychology could be of assistance in their sport and in the development of athletes' potential. Conducting clinics and consulting with individual coaches were seen as methods that had the potential to be useful, whereas consulting with players individually and being employed full-time were not seen to be so viable. Silva appeared to suggest that this might boil down to a question of money. Most coaches and their sport administrators were not in a position to pay for the more intensive types of session. Coaches were asked to rank the importance of 13 areas of sport psychology. They ranked what Silva called "traditional" areas of sport psychology, namely attitudes, motivation, and concentration, highest, then motor learning. The "currently fashionable areas in sport psychology" (p. 47), including psychological preparation, anxiety, and imagery, were not ranked highly. Silva proposed that it might be that, because they are relatively new, coaches might not have had much knowledge about those sport psychology areas, so that the coaches were unaware of the potential they possessed for psychological skills training. An open-ended question was included that asked the coaches to rank the four most critical problems that they had encountered and the problems most

often requiring their attention. For the question that referred to critical problems, the sample ranked team cohesion highest, then lack of confidence, the player not understanding their role, and underachievement. In terms of frequency, team cohesion was, again, the most important and highest ranked topic, followed by player misunderstanding role, underachievement, and coachability. In answer to an open-ended question on what work the coach would assign to the psychologist, coaches ranked general consultation highest, then developing motivational programs, optimising individual player abilities, morale and team cohesion, and, completing the top five ranked areas of work, was instituting intervention programs to overcome performance problems. The most frequent responses to another open-ended item on how the working relationship of coach and sport psychologist could be improved were to have more sport specific clinics where the relevance of scientific findings to a particular sport were presented, to publicise the areas of sport psychology to a greater extent, and for researchers to attend meetings of coaches and governing bodies.

Although most coaches expressed a desire to improve their relationship with sport psychologists, 26% had no interest in working with psychologists. The main reasons given were that the sport psychologist would hinder the coach's work, that sport psychology was an unproven area that was not adequately documented, with economic constraints and the undermining of

the coach's control ranking third and fourth as reasons. This study is of great interest in that it was of substantial scale and addressed the critical question of how coaches perceived sport psychology. Silva noted that the high school and college coaches in this sample reported being more interested in "traditional" than "current" (in the early 1980's) areas of sport psychology, which referred to most of the PST area. The majority expressed an interest in working with a sport psychologist, but 80% stated that they never had before. Most importantly for the present research, in this paper no mention was made of coaches delivering sport psychology.

In contrast to the AAHPERD study of high school and college coaches, Partington and Orlick (1987) interviewed 17 Canadian Olympic coaches. Semi-structured interviews were guided by 10 questions. Unfortunately, most of the questions related to what was or was not done by the sport psychology consultant(s), with whom the coach had been involved during preparations for the 1994 Olympics. Briefly, the results reported suggested three main criteria were used for evaluating psychologists, namely feedback from athletes and other staff, particularly about the psychologist's personal characteristics and style of working, the coach's own judgement about whether the psychologist made a positive difference, and long-term effects on competitive performance. A profile of desired psychologist characteristics emerged, the main aspects of which were being a good

listener, relating quickly and easily with athletes and staff, being energetic and hard-working, being flexible, open, and creative, having useful and relevant skills, and being willing to accept low fees. Sport psychology consultants were expected to be interested in the sport and ready to learn about it and the existing preparation program. The services that these Olympic coaches wanted sport psychologists to perform were defining mental skills required by the sport and athlete strengths and weaknesses in them, improving communication between athletes and staff through group meetings, teaching mental skills, such as appropriate goal setting, concentration, and refocusing techniques, helping athletes to solve personal problems and cope with stress by individual counselling, and assisting the coach directly by acting as a “sounding board for ideas and by giving feedback about the effects of his or her coaching behaviors” (p. 98). Two questions were asked in this study that related to coach delivery of sport psychology. The first of these was “What role did you and/or others play in the mental training and psychological preparation of your athletes for practice and competition?” (p. 96). The second question that the coaches responded to was “How effective was your work and/or that of the consultant with the athlete in this area of mental training and psychological preparation?” (p. 96). Surprisingly, no comment is made on these two questions either in the Results and Discussion section or in the

Recommendations section. It must be concluded that the coaches did not play any role in the psychological preparation of their athletes, so they could not evaluate their effectiveness. The emphasis of this study was on the evaluation of the sport psychologist role by Olympic coaches.

Nonetheless, it is noteworthy that these 17 coaches of the most elite athletes in their country did not appear to have contemplated the possibility of delivering sport psychology services themselves.

It is curious that, in the same volume of the same journal as the Partington and Orlick (1987) study, that is, the first volume of The Sport Psychologist, Gould, Hodge, Peterson, and Petlichkoff (1987) described a study of the psychological foundations of coaching in wrestling. Gould et al. examined the self-reported use and success with psychological principles and differences between coaching levels, for 101 NCAA (American college) Division 1, 2, and 3 and NAIA (American high school) wrestling coaches. As part of a larger questionnaire, the coaches were asked about a range of general psychological factors as they applied to wrestling, giving responses on a 10-point Likert rating scale. They were also requested to rate 21 psychological skills on each of four criteria, importance of the skill, frequency of problems with that psychological skill, the changeability of the skill, and the degree of success the coach had experienced with the skill. These ratings were made on 7-point Likert scales. Results indicated that

college to international level coaches rated mental skills to be more important than it was rated by other levels of coach in the sample. The most important skills, specifically in the context of wrestling, were found to be mental toughness, positive attitude, individual motivation, attention-concentration, goal setting, and pre-match mental preparation. Gould et al. noted that even the least important psychological skills were rated above 4.0 on average on the 7-point scales. For frequency of problems the top rating items were anxiety-stress control, attention-concentration, lack of confidence, mental toughness, fear of failure, and negative attitude, although problems did not occur very frequently for any items. The most easily changed psychological skills were considered to be goal setting, team cohesion, mental imagery, communication problems, poor practice behaviour, prematch mental preparation, and positive attitude, but all areas were considered to be at least somewhat changeable. The coaches considered that they were most successful in the areas of developing team cohesion, communication skills, goal setting, and modifying poor practice behaviour, whereas the areas in which they were least successful included fear of failure, lack of confidence, and anxiety-competitive stress.

Comparisons between the coaches in terms of their degree of coaching success, the NCAA Division they coached, their coaching experience in years, and their educational certification as coaches, revealed significant

differences only for certification level, and then only for the amenability to change and the degree of success ratings. Gould et al. proposed that the 26 coaches who had certification had received more formal training in sport psychology and showed greater conviction that behaviour could be changed, because of that sport psychology training. Further, Gould et al. attributed their claim of enhanced success in changing it to the same formal sport psychology training. Gould et al. concluded that the coaches were very interested in psychological skills training and that coach education was helpful to them. They also observed that the data was collected using only one method, self-report questionnaire, raising some concerns about social desirability responding and the correspondence between what coaches said they did and what they actually did. They recommended the use of observational and interview methods along with questionnaires in future research to enhance the richness and the objectivity of findings.

The studies by Partington and Orlick (1987) and Gould et al. (1987) appear to present contradictory conclusions. Partington and Orlick reported no evidence of coaches delivering psychological skills training, with 20% of Olympic coaches interviewed not interested in working with psychologists, whereas Gould et al. found considerable use of psychological principles by their college level coaches. One reason for this discrepancy might be the questions asked. Partington and Orlick focused on coaches' views of sport

psychology consultation, asking about the coach's role almost as an aside. Gould et al. did not ask about whether the coaches delivered sport psychology or whether they felt it was appropriate for them to implement sport psychology. Rather they assumed that the coaches did deliver sport psychology and asked what aspects of sport psychology the coaches delivered most effectively. Another possibility is that provision of sport psychologists to support Olympic teams is common, but there are few at the college level, so Olympic coaches can rely on experts and do not need to become involved in sport psychology provision, whereas college coaches have to deliver psychological support themselves, if it is to be provided at all. This explanation is questioned by the report of Partington and Orlick that charging low fees was an important criterion in deciding on the employment of a psychologist among the Canadian Olympic coaches. Also, many American universities run substantial sport psychology intern programs for their athletes through their athletic departments, although this might not have been so evident in the mid-1980's. One other possibility is that, on the only question that referred to what the coaches actually did, in the Gould et al. study, namely the question about the coaches' success, the topics where coaches claimed more success, that is, developing cohesion, communication skills, goal setting, and modifying poor practice behaviour, might be reasonably expected to be part of the coaches' responsibility

anyway. The areas where least success was reported included fear of failure, lack of confidence, and anxiety-competitive stress, which are issues central to PST. It is possible that the coaches were not implementing PST techniques at all, but were simply coping with their athletes general needs on the basis of experience and intuition.

Sullivan & Hodge (1991) replicated the Gould et al. (1987) study with New Zealand coaches and athletes. The participants of this study were 46 national coaches from 20 sports and 68 elite athletes from 16 sports. In each case the respondents were part of larger groups to whom questionnaires were mailed. Thus, the final sample represented those who took the time to complete and return the questionnaire. The coaches completed a questionnaire that had four sections. Following a section that covered background information, the coaches were asked to define sport psychology, using key words and to rate the importance of sport psychology in training and for success in elite sport. The second section examined the self-reported knowledge of sport psychology of the coaches. In the third section, they were asked to indicate the importance of, and the success they felt they had in changing or developing 21 psychological skills. The final section considered the actual use of sport psychology by the coaches and asked them to report on five problem areas. Coaches were also asked who provided sport psychology services and how interested they were in

working with a sport psychologist to meet the psychological needs of their athletes.

The results Sullivan and Hodge (1991) obtained from this group of national coaches in New Zealand were similar, in many ways, to the Gould et al. (1987) findings. The New Zealand coaches self-reported that to them sport psychology meant attitude, including concentration, with 47 responses in this category, confidence ($n=45$), control and coping ($n=33$), mental preparation ($n=19$), motivation ($n=17$), goal setting ($n=16$), imagery ($n=14$), and relaxation ($n=13$). On a 10-point Likert scale, the coaches gave a very high rating ($M=8.37$) to the importance of sport psychology in preparing their athletes. On knowledge, 73% of the coaches felt that their knowledge of sport psychology was not adequate. In the next section of the questionnaire the coaches rated importance and successful use of 21 psychological skills on 7-point Likert scales, with high scores reflecting greater importance or success. The most important psychological skills were: positive attitude ($M=6.44$), attention/concentration ($M=6.42$), individual motivation ($M=6.35$), pregame mental preparation ($M=6.11$), goal setting ($M=6.17$), and mental toughness ($M=6.33$). It should be noted that, as in the Gould et al. study, even the items judged to be the least important were rated quite high on the scale. The lowest rating was for overconfidence ($M=4.18$). The coaches' ratings for success in changing or

developing the 21 psychological attributes were not quite as high, but were still largely in the high to moderate range. The highest ratings were for positive attitude (M=5.64), team cohesion (M=5.59), individual motivation (M=5.50), and sportsmanship (M=5.48). The lowest ratings were for attention/concentration (M=4.80), aggression/assertiveness (M=4.78), emotional control (M=4.73), imagery (M=4.71), anxiety/competitive stress control (M=4.50), and overconfidence (4.39). Again, the lowest ratings were still above the mid-point on the scale. As in the Gould et al. study, it is noteworthy that the highest rating areas for success in changing athlete feelings and behaviour would be considered by many coaches to be part of the coach's traditional role, whereas the list of the lowest rating attributes for effective change by the coaches includes most of the skills typically involved in psychological skills training programs, namely, stress or anxiety management, imagery, attention/concentration, and confidence. The responses of the coaches for actual use of sport psychology in their programs, indicated that sport psychology was included in most of their coaching programs (95.6% of coaches), and that they spent an average of 2.25 hours per week on coaching psychological areas, but there was a large range from as little as an hour per week, up to 12 hours each week. Most of this sport psychology work took the form of individual athlete/coach consultation (91.3% of coaches used this method) and group/coach

consultation (58.7%), whereas only 6.5% of the coaches reported using either individual athlete/sport psychologist or group/sport psychologist consultation approaches. The five problem areas most frequently reported by this group of New Zealand coaches were anxiety/competitive stress control, attention/concentration, mental toughness, pregame mental preparation, and lack of confidence. Once more, the problems arose primarily in the PST area. Although 65.7% of the coaches indicated that they were comfortable handling their athletes' psychological needs, only 37.2% felt that they met those needs to an adequate degree, and 97.6% of the coaches indicated that they would be interested to have a sport psychologist work with them. Sullivan and Hodge concluded that the views expressed by the group of coaches that participated in their study were "extremely supportive of sport psychology's role in enhancing sporting success." (p. 147), but they noted that the coaches operated at the national level, so they were likely to be better informed on sport psychology than most new Zealand coaches. They also noted that, as those who returned the mailed survey, they might have been the 61.3% of the original sample, whose attitudes and knowledge were most favourable toward sport psychology, leaving questions of generalisability of the findings. One interesting point not made by Sullivan and Hodge is that the large percentage of coaches who stated that they did not have enough knowledge

of sport psychology to adequately meet the needs of their athletes might actually reflect some level of knowledge. This is because it is typically those coaches who have some appreciation of the nature of sport psychology, who realise that they need to learn more in order to be able to practice psychological skills training with their athletes.

Blinde and Tierney (1990) conducted a study on the diffusion of sport psychology into swimming at the elite level in the USA. They noted that:

...few systematic studies have analyzed the process by which sport psychology ideas and techniques are diffused into the sport community.

A key individual who often controls the type of information that actually gains entry into a sport community is the coach. Interestingly, however, we have limited information about the sources through which coaches are initially exposed to sport psychology....their level of receptivity to these ideas and techniques....(or) factors that may interfere with decisions to implement mental training techniques”

(p.131).

Blinde and Tierney examined exposure, receptivity, and implementation using a questionnaire that had six sections. These considered: (a) demographic information about the coach, (b) sources of exposure to sport psychology, (c) coaches receptivity, (d) factors interfering with receptivity, (e) implementation techniques, and (f) factors interfering with

implementation. Most questions involved rating on a 5-point Likert scale from “not at all” (1) to “a great extent” (5). From a mail out to all American Swim Coaches Association Level 5 (highest level) certified coaches in the US, a total of 165 coaches, Blinde and Tierney reported that 95 surveys were returned (57.6% response rate). Most coaches were employed at the club level, with a substantial number also in college coaching, and a smaller percentage in high school coaching. With reference to exposure, Blinde and Tierney found that the coaches reported a small to moderate amount ($M=2.80$, on a 5-point scale). Major sources were clinics and workshops, books and journals, and other coaches. Less used were personal contacts with sport psychologists and college instruction, whereas the United States Swimming sponsored coaches’ college was least used of all. Clinics and workshops, books and journals, contacts with other coaches, and personal contacts with sport psychologists were rated as most useful sources. College instruction, the United States Swimming coaches’ college, and videotapes/audiotapes were judged to be least useful. Blinde and Tierney particularly pointed to the low rating of perceived usefulness for college instruction, suggesting that there is a need to look at the nature of these courses. On exposure in general, Blinde and Tierney commented that findings “raise some concern about the degree to which coaches are actually exposed to the body of knowledge in sport psychology. Since exposure was

only moderate at best, widespread implementation cannot be expected.”

(p.134). They emphasised that clinics and workshops were not only reported to be the most common form of exposure, they were also rated as the most useful.

Blinde and Tierney (1990) found that the group of high level coaches they examined reported a moderate to high degree of receptivity to sport psychology ($M=3.61$). In particular the coaches considered that sport psychology could fit in their programs well and that they would include mental training techniques, if the resources permitted it. On this issue Blinde and Tierney observed that the “general positive attitude toward sport psychology found in this study is critical since the diffusion process would not go beyond this stage without the coaches’ support and receptivity.”

(p.135). They do suggest caution, however, because of the possible response bias, that is, the 95 coaches who responded to the survey, out of 165, who were sent questionnaires, could have been the more receptive Level 5 coaches in US swimming. To examine obstacles to receptivity, Blinde and Tierney divided the coaches into high and low receptive groups based on their earlier responses and then looked particularly at the low receptivity group, reasoning that they would be likely to report more obstacles. The two most important obstacles reported by this group were the limited resources of their organisation ($M=2.9$) and the restricted amount of sport psychology

research that was converted by researchers into a practical form, and disseminated to coaches ($\underline{M}=2.5$). It was noted by Blinde and Tierney that these obstacles are outside the coaches' control, but these low receptive coaches were also concerned about their perception that sport psychology was largely unproven ($\underline{M}=2.4$) and they admitted to not always understanding what roles sport psychology could play in the preparation of their swimmers ($\underline{M}=2.2$), as well as doubting its usefulness ($\underline{M}=2.1$). The high receptive coaches tended to agree about the limited resources ($\underline{M}=2.6$) and the lack of dissemination ($\underline{M}=2.4$), but did not perceive sport psychology to be unproven to the same extent ($\underline{M}=1.3$), nor were they as doubtful about the usefulness of sport psychology ($\underline{M}=1.2$) or its potential roles in their programs ($\underline{M}=1.6$). Again, it is important to note the level of the responses on the rating scale provided. A response of 2.0 on that scale had the verbal descriptor "small extent", so the majority of obstacles were perceived to apply to a small extent or less, with even the highest rated barriers only approaching a moderate extent. In response to an "other" category where coaches could add their own barriers, only two additional obstacles were volunteered by more than one coach. These were the barriers that athletes have limited time for psychological training ($\underline{n}=5$) and that sport psychologists and coaches are not compatible ($\underline{n}=3$), the small numbers proposing them indicating that they reflected extreme views.

Blinde and Tierney concluded on receptivity that sport psychologists need to disseminate their knowledge in forms that are more useful to coaches, in order that the coaches become better informed about the practical aspects of sport psychology that can be of use to them and their athletes.

Blinde and Tierney (1990) also examined the self-reported implementation of sport psychology by the 95 Level 5 coaches who responded to their survey. This information was collected in response to a question about the extent to which 12 specific sport psychology techniques and strategies had been incorporated into the coaches' programs. The techniques used most included goal setting ($\bar{M}=4.15$, on the 5-point Likert scale), team building ($\bar{M}=3.87$), self-confidence development ($\bar{M}=3.67$), and attitude adjustment ($\bar{M}=3.53$). Least used were retirement counselling ($\bar{M}=2.09$), psychological assessment ($\bar{M}=2.43$), and injury rehabilitation ($\bar{M}=2.60$). Falling between these extremes were techniques like relaxation ($\bar{M}=3.24$), imagery ($\bar{M}=3.46$), coping strategies for competition ($\bar{M}=3.41$), and arousal ($\bar{M}=2.83$), and attention focusing ($\bar{M}=3.29$). The high scoring topics were reported to be used to a large extent, whereas low scoring techniques were used to a small to moderate extent. As was noted in the discussion of the studies of Gould et al. (1987) and Sullivan and Hodge (1991), Blinde and Tierney themselves noted that the techniques that were used to a large extent were "traditional in nature and somewhat common to

all athletic coaching. For example, coaches may use goal setting or team building without undergoing formal training or in-depth study in sport psychology.” (p. 138). At the other extreme, sport psychology techniques for retirement counselling or injury rehabilitation are relatively recent developments and specialised, even in sport psychology practice. Between these two extremes were located the major aspects of psychological skills training, with the exception of goal setting. The ratings overall, once again appear to be quite high and might reflect an element of social desirability responding that is common in rating scale studies (Gould et al., 1987).

Blinde and Tierney concluded that for implementation of sport psychology to improve in the swimming community coaches need more formalised training in PST. To examine obstacles to implementation, Blinde and Tierney gathered ratings of 14 potential obstacles. They examined low implementation coaches first and noted three particularly high rating obstacles, that included lack of availability of qualified psychologists ($\bar{M}=3.8$), economic constraints ($\bar{M}=3.6$), and mental training taking time away from other training ($\bar{M}=3.4$). Blinde and Tierney’s interpretation was that high implementation coaches did not demonstrate the same high response to these barriers. Nevertheless, scrutiny of the table of means they presented indicates that the same items that showed higher means than any other items for the low implementation group, showed clearly higher means

for the high implementation coaches as well. In addition, the absolute levels of the means for these items in the high implementation group differed little from the means found for the low implementation coaches. It can be concluded that all the coaches felt that lack of available sport psychologists, economic constraints, and time taken from other training were major barriers to implementation.

The study conducted by Blinde and Tierney (1990) indicated that high level coaches in a major Olympic sport in the USA, namely swimming, reported that they had not received a high level of exposure to sport psychology, although they were interested in it. Further, receptivity to sport psychology was variable, with some very interested to integrate it into their programs, but perceiving that financial constraints and poor dissemination to practice by research-based psychologists limited their receptivity. With respect to implementation, coaches reported that they implemented techniques that were closely related to the traditional coach role, had attempted some implementation of more recent, but well-established psychological skills training techniques, and had little to do with counselling issues, especially those that were not directly related to performance, such as retirement and injury counselling. Again, the main blocks were economic limitations, time constraints, and the lack of available sport psychologists with suitable skills. It was also pointed out that exposure

was not necessarily enough to ensure receptivity and that receptivity itself did not guarantee implementation. For the sport psychology community, Blinde and Tierney concluded that there was a need for greater dissemination of psychological skills training concepts in practical and understandable ways. Also, it was necessary for researchers to focus more on studies of direct relevance to the practitioner and it was essential for this type of research to include evaluation of PST techniques, so that claims that sport psychology is largely unproven can be challenged, at least for effective techniques.

The research on coaches' attitudes and use of sport psychology reported so far, has largely been conducted in North America. A study that is similar in style was conducted by Moran (1993) on 30 full-time professional tennis coaches from 13 countries, including representatives from South and Central America, Asia, Africa, Europe, and Australia, as well as Canada and the USA. Despite this apparent international representation, it should be noted that there were only two coaches from Africa, one from South America, and one from Indonesia, who was the only Asian coach. This compared with 24 coaches from Western countries. In addition, those coaches that did respond were volunteers from a larger group, the response rate being "about 60%" (p. 222). Moran pointed out that a number of non-respondents did not speak English fluently enough to complete the

questionnaire, but it is possible that the results include a positive response bias, as coaches who thought favourably about sport psychology might have been more likely to volunteer to take part in the study. Moran developed a 27-item scale, measuring the coaches' views of the importance of mental skills training, the extent to which players are "trainable" (original author's quotation marks) in mental skills, the importance of these psychological skills relative to other aspects of training in tennis, and the main difficulties encountered in coaching psychological skills. Moran found that 90% of the coaches believed that mental skills were very important for success in tennis and 29 of the 30 coaches believed that these skills were trainable. Time was devoted each week to discussion and analysis of mental skills, but the main barriers to implementing psychological skills in the training program were lack of time and difficulty translating theoretical knowledge into practical drills. Moran investigated the coaches' ratings of the importance of seven mental skills, adapted from Weinberg's (1988) text on mental skills for tennis. Responses were made on 7-point Likert scales, with high scores reflecting greater importance. All the skills were regarded as important, the lowest rating being 5.3 on the 7-point scale, but three skills received notably higher ratings than the others, these being motivation (\underline{M} =6.6), concentration (\underline{M} =6.5), and self-confidence (\underline{M} =6.4). Mental preparation (\underline{M} =6.0), anxiety control (\underline{M} =5.9), and anger control (\underline{M} =5.9) were still

rated very high, with a substantial step down to the final skill, imagery ($M=5.3$). In t-tests, 14 out of 21 comparisons were significant ($p<.05$), including all those between the top three skills and any of the other four, but no Bonferroni correction for multiple comparisons was used. Moran also examined the perceived usefulness of 13 specific behavioural techniques, that were proposed to be related to psychological skills. The highest rating items, again on 7-point Likert scales, were positive self-talk ($M=6.28$), imagery of next shot ($M=6.17$), imagery of tactics ($M=6.10$), and setting performance goals ($M=6.03$). The behaviours rated lowest by the 30 elite level coaches were looking at strings ($M=4.70$), closing eyes ($M=4.66$), muscular relaxation ($M=4.62$), and blowing on hands ($M=3.76$). It is surprising to find muscular relaxation so low in coaches' ratings, as it is typically considered by coaches to be one of the more accessible psychological techniques (e.g., Gould et al., 1987; Hall & Rodgers, 1989). The other three behaviours that were rated lowest are habits that players believe help them to concentrate. The location of these "concentration habits" so low in the order of rating of specific techniques, when concentration was the second highest ranked mental skill, suggests that coaches do not think these behaviours aid concentration as much as tennis players believe that they help. Conversely, the high ranking for the two imagery behaviours seems contrary to the lowest rating given to imagery in

the ratings of the importance of mental skills. Moran noted that in the mental skill ratings the word “visualisation” was used, whereas in the ratings of specific behaviours phrases like “forming a clear mental picture of where you would like to place your serve” (p. 223) were employed. He suggested that the low rating for visualisation might have been because the coaches were unfamiliar with the term. It is noteworthy that the top ranking behaviours were all elements of psychological skills training. Finally, Moran asked the coaches in his study to “indicate their most urgent needs in the field of mental skills training.” (p. 223). Top priority was given to the need for practical guidelines for the implementation of sport psychology or mental skills training programs. Moran noted that all the data in this study represented the opinions of coaches, rather than performance measures, so the study deals with perceived importance and efficacy. Reservations were also expressed about the generality of the findings from such a small sample and finally, it was noted that the sample was to some extent self-selecting, first because attendance at the sports science seminar at which the data was collected, suggested some interest in this field, and second because the participants were volunteers from within the group of coaches who were sports science seminar delegates. Particularly notable, bearing these reservations in mind, was the high level of interest expressed, the high

rating for major psychological skills, and the great efficacy afforded to specific techniques associated with those skills.

Rice and Ostrow (1994) studied the attitudes of NCCA Division I coaches to coach delivery of sport psychology, in the same study in which they examined the views of AAASP members. The coaches came from three sports, namely baseball (n=145), softball (n=131), and tennis (n=431). The response rates to the mailed questionnaire were 37% for baseball, 60% for softball, and 65% for tennis. Rice and Ostrow gave no reasons why the baseball coaches had such a relatively low response rate. Rice and Ostrow found that only 21% of the coaches reported using sport psychology services. At the same time, 93% of the coaches indicated that they would be willing to use a sport psychologist. Three main reasons were given by these coaches for not employing the support of sport psychologists. These were the cost, the availability of qualified sport psychologists, and time limitations. Rice and Ostrow also reported that it was the more experienced coaches that administered sport psychology more to their athletes, and that it was indicated by the coaches that they presented sport psychology regardless of any professional training, that is, many of them had not had any formal training to deliver these services. The proportions of high level coaches, in this case NCAA Division I, that utilised sport psychology and the proportion that were interested to work with a sport psychologist were

very similar to other studies. The three main barriers were the same as in most of the other work reported here, suggesting some consistency and probably greater accuracy for this finding. Again, it is not clear how Rice and Ostrow sampled the coaches or whether those sent surveys were all the coaches from that category. Thus, sampling as well as response to the mailed questionnaire could have lead to a positive bias, supporting sport psychology.

Another perspective on the adoption of psychological skills training by coaches acted as the basis for a recent study by Haslam and McDonald (1993). They examined the concerns that coaches at different levels of training have with the use of PST. Haslam and McDonald adopted the Concerns Based Adoption Model (CBAM; Hall, Wallace, & Dossett, 1973). This model was developed to describe the stages of concern about an educational innovation. Hall et al. proposed seven stages, labelled 0 to 6. Stage 0, Awareness, reflects little concern about or involvement in the innovation. Stage 1, Informational, involves a general awareness and Stage 2, Personal, is associated with uncertainty about the demands of the innovation and a possible feeling of inadequacy about one's ability to meet those demands. Stage 3, Management, concerns attention on the processes and tasks of using the innovation and how best to use the available information and resources, whereas Stage 4, Consequences, refers to a focus

on the impact of the innovation on the person, in their immediate sphere of influence. Stage 5, Collaboration, reflects a focus on coordination and cooperation with others regarding use of the innovation, and Stage 6, Refocusing, concerns exploration of more universal benefits from the innovation. Haslam and McDonald examined the stages of concern of 284 Canadian coaches representing five levels of the National Coaching Certification Programme (NCCP), pre-Level 1 (n=31), and Levels 1 (n=71), 2 (n=78), 3 (n=92), and 4 (n=12), who were sampled in several ways. Some were tested when they attended NCCP Level 1 and 2 courses, while others were given questionnaires at the 12th Annual National Coaches Seminar. In both cases, testing took place after the coaches had received a PST workshop. These sampling methods together resulted in 105 participants. The second method used was to contact a random sample of Level 2 and 3 coaches from a mailing list of the Coaching Association of Canada. At each level, 150 coaches were sampled. Finally coaches at all levels were approached through the Science Periodical on Research Technology and Sport (Sport). These two methods attracted 179 participants, a response rate of 42%. These 284 Canadian coaches completed the Stages of Concern (SoC) questionnaire, a version of the original scale developed by Hall, George, and Rutherford (1977). To improve the face validity of this scale for use in the sport context, a number of minor wording and structural

changes were made. A pilot study confirmed reliability of the revised scale. Contrary to their prediction that coaches at different levels of certification and, it is assumed, training, would show different profiles of concerns, with more advanced level coaches showing more concern for the later developmental stages (Consequences, Collaboration, and Refocusing), Haslam and McDonald found remarkable similarity in the profiles for all five levels of coaches. For all groups the concern with the greatest mean intensity was Consequences, followed by Collaboration, Information, and Personal concerns. Lower intensity of concern was found for Refocusing and Management concerns, with the lowest intensity being reported for Awareness. The finding for Awareness is not surprising in view of the nature of the sample. Many of the coaches had just completed a workshop on PST, Levels 2, 3, and 4 coaches necessarily have experienced a fair amount of sport psychology in the training required to attain these levels, and readers of the SPORT journal, especially those who were willing to return questionnaires on this topic, would more than likely be relatively sophisticated in their sports sciences knowledge. It was noteworthy that, although the intensity of concern was low for all levels of coach on the Awareness concern, it was clearly lowest for Level 4 coaches and became relatively more intense as coaching level declined. This difference proved to be significant in Analysis of Variance (ANOVA). Conversely, on

Consequences, Collaboration, and Refocusing, the Level 4 coaches revealed clearly higher intensity than any other group, differences that were significant in ANOVA for Consequences and Refocusing, and approached significance for Collaboration. Although not statistically significant, the means for the five coaching levels at each stage of concern showed clear trends. For Awareness, and Information stages of concern, intensity of concern decreased systematically from pre-Level 1 to Level 4, for Personal and Management concerns, there was not much difference between levels, and for Consequences, Collaboration, and Refocusing concerns there was a clear increase in intensity from pre-Level 1 to Level 4. In an additional analysis, Haslam and McDonald found that self-reported PST knowledge and intention to use PST increased as coaching level increased. Haslam and McDonald concluded that there was a developmental pattern in stages of concern for introducing the innovation of PST into coaching, but it was not as robust as the pattern typically found in the educational domain. Higher level coaches were less concerned about Awareness and Information than beginning coaches and were more concerned about Consequences, Collaboration, and Refocusing. At the same time, the profiles across stages were similar for all levels of coaches, with Consequences, Collaboration, Personal, and Informational concerns of greater importance to all levels of coaches than Refocusing, Management, and, particularly, Awareness.

Haslam and McDonald concluded from this that, in comparison with educational innovations, “PST seems to elicit a qualitatively distinct set of concerns.” (p. 331). Haslam and McDonald suggested that the particular concern with Consequences might reflect the worry that implementing a PST program could impact negatively on the training program of their athletes and their performance, for example, they would have less time to do their other training and their competition performance might decline.

Coaches might believe that introducing a PST program could also affect their own credibility, “as the coach is coaching something new that they themselves do not feel fully comfortable with will this undermine there [sic] authority as sport experts in the eyes of their athletes?” (p. 333). Haslam and McDonald arrived at a similar implication for sport psychology as many of the studies previously reported, namely that the challenge for sport psychology coach educators is to alleviate these concerns by presenting workshops that make PST materials “as ‘user friendly’ as possible.” (p. 333). Although the approach adopted by Haslam and McDonald differs from that used in the studies previously reviewed, the findings seem to be consistent. The concern with information is likely to reflect the difficulty reported in most studies that coaches have in converting the theoretical and research knowledge of sport psychology into practical procedures that can be used with athletes. Similarly, the personal concerns of coaches in the

Haslam and McDonald study could link to the frequently reported doubts that coaches have expressed about their own knowledge and skills in the delivery of psychological skills training. Concern about the consequences of introducing the innovation might reflect, at least in part, the doubts reported by many coaches that sport psychology techniques will make a positive difference to their athletes' performance, while being aware that they would take up precious time. Finally, the other major concern with collaboration seems likely to be partly related to the high level of interest many coaches have indicated they feel about working with a sport psychologist in the preparation of their athletes.

Bloom, Salmela, and Schinke (1995) used qualitative methods to examine the recommendations of expert coaches regarding the future training of developing coaches. In-depth, open-ended interviews were conducted with 21 expert coaches in the team sports of volleyball, basketball, ice hockey, and field hockey. A reality-based "bottom-up" approach was used to inductively analyse the interview transcripts. The results revealed that expert coaches believed that more emphasis was needed in four areas. These were (a) clinics, seminars, and symposia; (b) hands-on experience; (c) passive observation of other coaches; and (d) a structured mentoring program. More specifically, coaches stressed the benefits of acquiring theoretical knowledge through seminars, clinics and

symposia, and practical knowledge through hands-on experience and observation of expert coaches. The most important recommendation related to the creation of a formalised mentoring process. It was suggested that the other three components could be integrated into such a program. On the basis of the results of this study, Bloom et al. proposed that coaches should be given the opportunity to express their opinions regarding the state of their profession, and more importantly, that standardised procedures should be implemented in coaching development programs. The results of this study are consistent with the research reviewed earlier in reflecting coaches' views that the knowledge gained from theoretical sessions, such as seminars and symposia, needs to be developed into practical drills and techniques that the coaches can practice under guidance. Whereas such guidance would often be given by sport psychology consultants, the results of this study suggested that it would be valuable to learn about the implementation of sport psychology techniques from a more experienced coach, especially through observation of that coach training athletes to perform the techniques.

There is little published research on coaches' attitudes to or delivery of sport psychology in Asian countries. In Thailand, two unpublished dissertations have been located that address coaches' attitudes to and use of sport psychology techniques. Sontimuang (1993) carried out a study of

sport psychology techniques of national team and University Games coaches that was documented in an unpublished doctoral thesis. The purpose of the study was to examine and compare sport psychology techniques used by 30 Thai national coaches and 30 Thai University Games coaches from five selected sport groups. The sport groups were accuracy sports (shooting, petanque, and archery), team sports (soccer, basketball, volleyball, and hockey), combative sports (boxing and judo), racket sports (tennis, badminton, and table tennis), and swimming and athletics. A questionnaire was developed that consisted of 14 sport psychology techniques. These included mental toughness, positive attitude, motivation, attentional focus and concentration, goal setting, mental preparation strategies, aggression and assertive behavior, emotion control, anxiety and stress control in competition, mental imagery and mental practice, coachability, negative attitude, leadership, and team cohesion/unity and harmony. These techniques were examined, based on coaches' self-reported use of, and interest in, the techniques. The coaches responded on 5-point Likert rating scales. Sontimuang found that the 30 Thai national coaches self-reported a high level of use of sport psychology techniques ($M=3.76$, on the 5-point scales). The three techniques that received the highest ratings were goal setting, mental toughness, and team cohesion and harmony. The University Games coaches also self-reported use of sport psychology

techniques at a high level ($M=3.55$), but the three highest rating techniques were team cohesion and harmony, aggression, and mental toughness. Both the national coaches and University Games coaches reported very high levels of interest to learn more about sport psychology techniques ($M=4.19$ and $M=4.09$ respectively). Both the national coaches and University Games coaches reported that they attempted to use ideal sport psychology techniques at very high levels ($M=4.17$ and $M=4.19$ respectively). There was no significant difference ($p=.05$) in the use of sport psychology techniques between national coaches and University Games coaches. From the findings of this thesis, it is interesting to note that the five sport psychology techniques for which the highest self-reported use by Thai national coaches arose were team cohesion and harmony, attentional focus and concentration, mental toughness, anxiety and stress control in competition, and mental preparation strategies. The five lowest techniques were: negative attitude, aggression and assertive behaviour, leadership, mental imagery and mental practice, and motivation. Sontimuang indicated that coaches paid limited attention to techniques, such as imagery, motivation, and attention and concentration, that are typically considered to be important by Western coaches and sport psychologists. In conclusion, he suggested that coaches need to learn more about sport psychology and that such training should be provided to coaches by appropriate organisations,

such as universities that employ qualified sport psychologists or the Sports Authority of Thailand.

Research on Sport Psychology Training Programs for Coaches

Probably the most significant study of the implementation of sport psychology by coaches to date was conducted by Hall & Rodgers (1989). Based on the belief that coaches should be able to incorporate combinations of various mental training techniques into their teaching and that this would improve their coaching effectiveness, Hall and Rodgers developed and conducted a workshop on the use of various psychological techniques for Canadian figure skating coaches. The general purpose of this study was to teach coaches how to incorporate selected mental training techniques into their coaching. The specific objectives of the study were: (a) to determine the mental training techniques currently being used by coaches and the extent to which they were being used; (b) to teach coaches how to teach various mental training techniques to their athletes; (c) to determine whether coaches subsequently utilised, over an extended period of time, the techniques that they had learned in the workshop; and (d) to evaluate how the skaters reacted to the use of mental training techniques by their coaches. The participants were 44 figure skating coaches who had been certified at least at Level 1 of the Canadian National Coaching Certification Program (NCCP). The levels at which they coached varied from advancing junior to

elite. Four brief self-report questionnaires were used in this study, three questionnaires for coaches and the fourth one for their athletes. The first questionnaire, the Use of Mental Training Questionnaire for Coaches (UMTQ), consisted of 12 items on 7-point Likert scales, that assessed the coaches' previous use of selected mental training techniques. There was also one open-ended item addressing the same issue. The UMTQ was administered at the start of the workshop, along with a sheet that elicited background information about the coach. The second questionnaire, the Mental Training Effectiveness Questionnaire for Coaches (MTEQ), comprised one 7-point Likert item, four items to which specific quantitative responses were required, and one open-ended item. It assessed whether coaches felt the mental techniques that they had been taught to use were effective, and with which group of athletes they would be effective. This questionnaire was administered approximately eight weeks after the seminar. It was sent to the coaches in a package, along with the third questionnaire. The third questionnaire was the Coaches Workshop Assessment Questionnaire (CWAQ), which required the coaches to evaluate the workshop itself. It included two 7-point Likert scale items, one item on a 5-point Likert scale, two items that required specific answers, and two open-ended items. The fourth questionnaire, the Skaters' Perception of Coaches' Use of the Mental Training Package, consisted of three items with

the common 7-point Likert format and one open-ended item. In it, skaters indicated whether they had noticed any changes in their coach's teaching techniques. Five copies of the Skaters' Perception of Coaches' Use of the Mental Training Package questionnaire were included in the package sent to each coach eight weeks after the workshop. The open-ended items toward the end of each section, allowed the coaches/athletes to elaborate on their rating scale or quantitative item responses or add information that was not covered by those items. Coaches were asked to attend one of seven workshops offered by the investigators. Each workshop was approximately two and a half hours in length. The workshop was divided into five sections: (a) a classroom discussion of the first three techniques, task focusing, use of cue words, and imagery; (b) an on-ice opportunity to practice these techniques with skaters; (c) a classroom discussion of the next three techniques, negative thought stopping, positive instructions, and verbal persuasion; (d) another on-ice session; and (e) a final classroom discussion to tie all the concepts together. The classroom discussions of specific psychological skills, sessions (a) and (c), each ended with a videotape demonstrating use of the psychological skills in that session. A particular emphasis in the workshop, that was stressed in the session listed as (c) here, as well as in the final discussion session, was the use by coaches of positive

instruction to their skaters of what to do rather than what not to do, a negative approach that can reduce confidence and motivation.

The results for the UMTQ that measured coaches use of mental training, prior to the workshop, were that, imagery was employed most frequently, followed by task focusing, competitive strategies, cue words, and relaxation. Imagery was also considered to be the most useful of the mental techniques considered, followed by task focusing, relaxation, cue words, and competitive strategies. It is somewhat puzzling why relaxation was assessed as a technique, as it does not appear to have been part of the workshop program. It is also important to note that the mean ratings for frequency of use and perceived usefulness prior to the workshop were uniformly high. For frequency of use, they ranged from the highest, imagery, (\underline{M} =5.89) to the lowest, relaxation, (\underline{M} =5.09) and for perceived usefulness they varied from the very high level observed for imagery (\underline{M} =6.46) to a level that was still very high for the lowest scoring area, competitive strategies (\underline{M} =6.05). In response to the open-ended question, 40% of coaches reported having received their first exposure to mental techniques through their own skating and coaching experiences, especially from their former coaches, whereas 18% had their first experience from various seminars and courses apart from NCCP seminars, 9% did receive their first sport psychology information from NCCP courses, whereas

another 9% reported receiving their first experience from either college or university courses. The remaining 23% did not indicate the source of their prior knowledge. Only 26 coaches responded to the MTEQ and CWAQ questionnaires that were mailed out eight weeks after the workshops. Most of these 26 coaches indicated that they perceived the techniques that had been presented in the workshop to be useful, once they had tried them for a period of time with their skaters ($\underline{M}=5.07$). They reported that they felt the techniques would be most effective with more advanced level skaters and with those over 10 years of age, although a few coaches felt that the techniques were useful with all age and ability levels. Other benefits besides enhanced performance were also reported. For example, 54% of the coaches reported that their skaters were more enthusiastic, and 14% felt that their communication with their skaters had improved. The results for the workshop assessment questionnaire, the CWAQ, indicated that coaches rated the workshop to be both informative ($\underline{M}=5.03$) and useful ($\underline{M}=5.26$). It can be observed that these values do not differ greatly from the pre-workshop usefulness rating ($\underline{M}=5.07$), but, unfortunately, that rating was given in response to a somewhat different, although related, question, in the context of a different questionnaire, making direct comparison questionable. Coaches considered that all the techniques were useful, and the most useful were cue words, mentioned by 9 of the 26 coaches and imagery, named by 8

of the coaches. Compared to NCCP courses the coaches had attended, 88% of the 26 coaches found the workshop to be the same or better, and only three coaches felt the NCCP seminars were better. The reasons given for the workshop presented by Hall and Rodgers being superior to NCCP seminars were that the workshop focused on one element of coaching and its practical application at a time, that the workshop was more informative, and that the smaller groups allowed for more discussion and comments. The two main reasons that the three coaches felt the workshop was worse than NCCP sessions were that the focus was on a few techniques, that is, not enough topics covered, and that the workshop was too short, that is, they felt there should have been more time for discussion and more practise time on ice. Interestingly, the view that increased on-ice time would enhance the workshop was the most frequent suggestion in response to the question about what would enhance the workshop, being made by eight coaches. Hall and Rodgers (1989) noted, with some disappointment, that only 24 questionnaires were returned by skaters and that these referred to the behaviour of just eight coaches. This limited sample of athletes reported that the use of the workshop mental training techniques by their coaches had shown a substantial increase. They felt that their lessons (coaching sessions) were more effective because of their coaches' use of these techniques. They noticed their coaches using more imagery and cue word procedures and

they felt that their coaches displayed more confidence in using these psychological techniques. Further, they felt that they were receiving more encouragement from their coaches and that the coaches were more involved in their lessons. Two of the skaters reported that these favourable changes were seen immediately after the workshop, but “that after a few weeks these changes gave way to the former patterns.” (p. 151). Correlational statistics indicated that both the coaches’ qualifications and the level of the skaters they coached were positively related to their self-reported use and perceived effectiveness of psychological skills training prior to the workshop, their perceptions of the usefulness of the workshop, and their use of several of the techniques, but not all of them.

Hall and Rodgers (1989) concluded, on the basis of this project, that although the skating coaches were already somewhat familiar with psychological skills training and claimed to use them with their athletes, workshops of the type they conducted were perceived to be useful by coaches. Although new information was gleaned from the workshop, it was the amount the coaches learned about how to apply the techniques more effectively that was considered by them to be most important. Hall and Rodgers recommended that the workshop time should be long enough to cover all planned activities fully. This particularly includes more time for demonstrations and practice on-ice, for skating coaches. Hall and Rodgers

noted that many coaches still seem to be unaware of the need for improving their coaching skills. This was illustrated by the fact that only about 50% of the coaches who were invited and had easy access to the workshop, chose to participate. They proposed that sport associations need to promote professional development workshops for their coaches, that coaches and athletes need to be educated about the potential benefits of such research and practical training, and encouraged to give it their support. Finally, Hall and Rodgers suggested that mental training workshops for coaches should be developed for other sports and these workshops should become readily available to all interested coaches. The participants suitable for development workshops of this kind should typically be more qualified coaches in the sport, because coaches of elite athletes are more likely to have some familiarity with the mental training techniques to be covered.

The study by Hall and Rodgers was the first to systematically examine coaches' attitudes to and use of sport psychology techniques, by examining their views prior to a program, in this case a half-day workshop, and then investigating their use of the techniques presented in the workshop in a follow-up, a substantial time after the workshop. Although a number of papers have reported evaluation of a seminar or workshop (e.g., Hall & Carron, 1990; Howe & Gordon, 1992), none have set out to study coaches' attitudes and behaviour in this way. Similarly, a number of studies, mostly

reported in the previous sections of this review, have systematically examined coaches' attitudes to various aspects of sport psychology and its delivery, but none of these actually presented coaches with a program on psychological skills, neither did any follow-up at a later time. There is clearly a need for more studies of the type carried out by Hall and Rodgers. These could avoid some of the weaknesses of that study. Those weaknesses include the use of different questionnaires to assess prior attitudes and use, versus attitudes and use at the follow-up stage. It is understandable that different questions could be asked at the later stage, particularly those specific to the evaluation of the workshop. The absence of a standard questionnaire, however, makes it difficult to directly compare pre- and post-workshop coach responses. It could be concluded that the coaches in this study were very interested in sport psychology and believed it was effective before the workshop, and, while they evaluated the workshop positively, they were still very interested and believed sport psychology could be effective after the workshop. There was also no explicit examination of the coaches' knowledge of sport psychology at any stage. All that was asked was whether the coaches used the techniques and whether they thought the techniques were effective. It is also surprising that no assessment was made at all, immediately after the workshop. Some of the small sample of skaters reported that the coaches' teaching was altered immediately after the

workshop, but returned to its former pattern by the time of the eight week follow-up. On the same lines, it is possible that the coaches' responses at the eight week follow-up had declined from their level immediately after the workshop. Only by measuring knowledge and interest immediately after a program and then again some time later can the stability of changes be determined. A half-day workshop seems rather brief to develop a representative program of psychological skills training. The topics covered seem to reflect that, not being consistent with those examined in most of the attitudinal research reported earlier, for example. Rather the topics in the workshop seem to reflect only a few specific techniques from within the wider range of PST. Nonetheless, the work of Hall and Rodgers is encouraging and deserves to be developed further.

Hall and Carron (1990) reported on the outcome of a study tour to Eastern Europe. They pointed out that countries such as the German Democratic Republic and the Soviet Union adopted a strategy for the implementation of sport psychology that differed from that in the West. Rather than look to specialist sport psychologists to deliver sport psychology to elite athletes, as in the West, these Eastern European countries employed sport psychologists to train their coaches to provide the psychological skills training for the athletes. It was felt that the recorded results of performance in major sports events, such as the Olympic Games

and World Championships in a range of sports, suggested that the Eastern European methods were particularly effective. After studying the programs that Eastern European sport psychologists had developed for coaches, Hall and Carron returned to Canada and devised similar programs in rowing and figure skating. These programs, that aimed to provide coaches with methods to motivate their athletes, included content on self-confidence, mental imagery, performance analysis, goal setting, token rewards, and variety in practice sessions. The programs discussed how these skills or techniques could be effectively used in coaching. Evaluation of the workshops by the coaches was carried out. Unfortunately, the details of the duration of the workshops, the teaching methods employed, and the results of the evaluation were not included in the abstract of this unpublished report. Hall and Carron (1990) must have been aware of the conclusions of the Hall and Rodgers (1989) study, so it is assumed that some of the recommendations from that research were integrated into these programs, one of the new programs being in the same sport as the earlier study, figure skating. Although this approach seems to be promising, it appears that it has not been taken further by the authors. When asked if he could provide any additional information on further work by his group, C. Hall (personal communication, October 20, 1997) responded quickly, but gave no

reference to additional study or applied developmental initiatives in this area.

Summary of Literature Review

This literature review has considered a number of areas related to coach delivery of sport psychology to athletes, with particular reference to the development of sport psychology in the cultural context of Thailand, as well as in the sport psychology literature of Western cultures. It is appropriate to summarise the review, in order to focus on the major issues raised and addressed.

The early sections of the literature review examined the development of sport and the sports sciences in Thailand. Thailand embraced sport well over a hundred years ago, particularly through its association with the United Kingdom at that time, through royal links. Sport for the development of character and for health were emphasised, so that elite sport was not quickly developed. Although Thailand entered the world sport area in the early 1950's through the Olympics and the Asian Games, it is only in the last 25 years that national policies and organisational structures have emphasised success in sport at this level. The Department of Physical Education and the Sports Authority of Thailand are the main national structures for the development of sport, the latter being more involved in elite sport. As the drive for success in world sport has increased, Thailand

has also embraced the Western sports sciences, in the belief that athlete preparation must involve these as well as technical and tactical training. The disciplines given more attention have been sports medicine and exercise physiology, while biomechanics has recently been given a large financial boost. Sport psychology has received less attention. It appears that its current status reflects a lack of suitably qualified and experienced personnel. There is no training structure or accreditation scheme for sport psychology in Thailand, so those who do offer such services have a range of backgrounds and are neither carefully monitored nor closely controlled. Accepting that these individuals are competent, they are few in number and often have full-time careers in universities, so it is not possible for them to provide adequate applied sport psychology support directly to Thailand's growing force of elite athletes. It has been suggested that, in order to provide such support, it is necessary to train national level coaches to provide sport psychology service to the athletes with whom they work. Examination of coach education in Thailand indicates that there is no national training and accreditation structure such as exists in many Western countries and coaches, even those at the elite level, typically receive little in the way of sport psychology education or training. It is this situation that was the stimulus for the investigation of the role of coaches in the delivery of sport psychology, particularly psychological skills training.

To help understand more fully the current status of theory and research on coach implementation of sport psychology, writing on this issue in the Western sport psychology and coaching literature was examined.

Table 2.2
Research on Coach Delivery of Sport Psychology

Authors/Date	Sample	Research Methods	Findings
		Studies of Sport Psychologists	
Gould, Tammen,	44 US Olympic sport	Questionnaire	Little comment on coach involvement; individual coach
Murphy, & May	psychology		consultations main work; 9 cited problems with coach
(1989)	consultants		as barrier.
Orlick & Partington	17 Canadian national	Semi-structured	No report of responses to role or effectiveness - assume
(1987)	coaches	interviews,	little coach comment on these.
		including role	
		played in sport	
		psychology and	

		how effective.	
Rice & Ostrow (1994)	143 AAASP Members	Questionnaire (repeated 1 year later)	Factor Analysis: Performance enhancement; personal/ developmental; clinical. Physical Education trained more supportive than Psychology trained.

Studies of Coaches

Blinde & Tierney (1990)	95 US Level 5 swimming coaches	Questionnaire: mainly rating on 5- point Likert; assessed coaches exposure, receptivity, and	Exposure - small to moderate, mainly clinics/workshops; Receptivity - moderate to high; Obstacles to receptivity - resources, little practical research, sport psychology unproven, role of sport psychology not clear, doubt useful (all small to mod); Open-ended - time available, coach-psychologist
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	implementation of	incompatible; Implementation: 12 sport psychology
	sport psychology	techniques - high for goal setting, team cohesion, self confidence and attitude, moderate for relaxation, imagery, coping, arousal, attention, and low for retirement, psychological assessment, injury rehabilitation; Obstacles: 14 rated - highest ratings for availability, cost, time.
Bloom, Salmela, &	21 Canadian expert	In depth interviews
Schinke (1995)	coaches in volleyball, basketball, ice hockey, field hockey	Needs - clinics, seminars, symposia (for theory); hands on experience, observing expert coaches (for practical), structured mentoring (most important).

Buatuan (1993)	Thai University Games coaches	Sports Sciences Questionnaire, items on sport psychology knowledge, team, anxiety, communication, motivation, goal setting, relaxation, imagery	Coaches claimed little knowledge or use, although rated sport psychology problems low (perhaps based on little knowledge).
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Gould, Hodge,	101 US NCAA Div	Questionnaire:	Imp mental skills - mental toughness, positive attitude,
Peterson, &	1, 2, 3 wrestling	rating scales; rate	motivation, attention-concentration; goal setting, pre-
Petlichkoff (1987)	coaches	21 psychological	match mental preparation, (all 21 skills over 4.0); Most
		skills on 7-point	frequent problems - anxiety-stress, attention-
		Likert scales	concentration, lack of confidence, mental toughness,
			fear of failure, negative attitude (all low frequency);
			Easily changed - goal setting, team cohesion, imagery,
			communication, poor practice behaviour; prematch
			mental preparation, positive attitude (all changeable);
			Most success changing - team cohesion, goal setting,
			prematch mental preparation; Least success changing -
			fear of failure, lack of confidence, anxiety-stress.

Hall & Rodgers
(1989)

44 Canadian skating coaches Level 1 & above - initial use; 26 - post program; 24 skaters from eight coaches - skater view

Coaches three Questionnaires: UMTQ - initial use; then 2.5 hour workshop; then MTEQ - effectiveness post program and CWAQ - evaluation of program; Skater perception of

UMTQ: Frequency of use (prior) - imagery most frequently used, then focusing, competitive strategies, cue words, and relaxation (all high - 5.09 to 5.89); Effectiveness (prior) - imagery, focusing, relaxation, cue words, and competitive strategies (all high - 6.05 to 6.46).

MTEQ: Use (post) - useful (5.07); judged that enhanced athlete performance, enthusiasm, communication.

CWAQ: Workshop was informative (5.03), useful (5.26); Most useful - cue words (9 coaches), imagery (8); 88% same as or better than NCCP; could enhance by - more time for on-ice training

coach use - Skaters: reported coaches increased use of techniques
 changes after post workshop, lessons more effective, more use of
 program imagery, cue words, coaches more confident in use,
 more encouragement received from coaches. (Two
 skaters reported coach relapse by 8 week follow-up.)

Haslam & Mcdonald 284 Canadian NCCP Stages of Concern Similar profiles for all levels of coach; Highest
 (1993) pre-Level 1 to Level Questionnaire intensity of concern - Consequences, then
 4 modified for sport Collaboration, Information, Personal; Low -
 Refocusing, Management, Awareness; Trends - higher
 level coaches more concern for Consequences,
 Collaboration, Refocusing; Lower level coaches more
 concern for Awareness, Information; PST knowledge

and intent to use increased with higher level of coach.

Moran (1993) 30 professional tennis coaches from 13 countries (24 Western) Questionnaire: ratings of 7 psychological skills and 13 specific techniques on 7-point Likert, plus specific responses

Importance of sport psychology - 90% very important; 29 out of 30 believed "trainable"; Barriers - time, converting research into practice; 7 skills - all rated important, highest motivation, concentration, confidence; 13 techniques - highest positive self-talk, imagery of shot, imagery of tactics, goal setting; Needs - practical guidelines.

Partington & Orlick (1987) 17 Canadian Olympic coaches Semi-structured interviews

Coaches evaluated sport psychology on - feedback from athletes, coaches judgement of positive effects; long-term effect on performance; Sport psychologists were

				needed for work on - defining mental skills and teaching, improving communication, helping athletes with personal problems, coping with stress; Coach role in sport psychology - no comments; coach effectiveness in sport psychology - no comments.
Rice & Ostrow (1994)	US coaches: NCAA Div I 145 baseball; 131 softball, 431 tennis	Questionnaire		21% used sport psychology services; 93% interested in sport psychology; barriers - cost, availability, time.
Silva (1984)	236 US high school & college coaches	Questionnaire: rating scales and open ended		90% interested in sport psychology; only 20% had worked with sport psychology consultant; barriers - cost; ranked "traditional" coach areas highest for sport

psych needs - attitudes, motivation, concentration; PST areas not high ranked; Problems - team cohesion, lack of confidence, role in team, underachievement; Needs - sport specific clinics, research disseminated in practical terms; Reasons coaches did not involve a sport psychologist - hinder coach, sport psychology unproven; research not disseminated.

Sontimuang (1993) 30 Thai national coaches and 30 Univ Games coaches
 Questionnaire: ratings on 5-point Likert scales for 14 sport psych techniques
 Highest rating (national coach) - goal setting, mental toughness, cohesion; Highest rating (Univ Games coach) - mental toughness, cohesion, aggression; Interest in sport psychology - very high levels; Attempt to use sport psychology - very high levels, but limited

attention to major PST techniques.

Sullivan & Hodge (1991)	46 New Zealand national coaches from 20 sports	Questionnaire: ratings mainly on 7-point Likert and open-ended; included same 21 psychological techniques as used by Gould et al. (1987)	Defining sport psych - attitude, confidence, coping, mental preparation, motivation, goal setting, imagery, relaxation; Importance of sport psychology - high rating (8.4 on 10-point Likert); Knowledge - 73% stated was not adequate; 21 psychological skills: important - highest were attitude, attention-concentration, motivation, pregame mental preparation, goal setting, mental toughness (all 21 high); most changeable - attitudes, team cohesion, motivation, sportsmanship; least changeable - attention-concentration, aggression- assertiveness, emotional control, imagery, anxiety-
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stress, overconfidence; Actual use - 96% use, 91% individual athlete/coach, 59% group/coach, 6% psychologist; Main problems - anxiety-stress, attention-concentration; mental toughness, pregame mental preparation, lack confidence; 98% interested in sport psychologist support.

Consideration of theoretical material in sport psychology suggested that, although there are different opinions, there is a substantial amount of support among sport psychologists for the view that there is a role for coaches in the delivery of sport psychology. Views on the scale of that role vary depending upon the expertise of the coach in sport psychology. Many sport psychologists would consider that coaches could be trained to deliver a number of techniques in areas including relaxation, anxiety management, confidence building, attention control, goal setting, and motivation.

Research on the attitudes of sport psychologists to coach involvement in the delivery of psychological skills training, which are summarised in Table 2.2, tend to support this view. Although there are some sport psychologists who argue that sport psychology is a specialised field, they tend to be considered protectionists, at least with respect to the majority of PST techniques, where extensive, specialist training is not generally believed to be necessary.

Theoretical writing by coaches again reflects a diversity of views. Nonetheless, the proposition that dominates the published views of coaches is that properly trained coaches are capable of providing all the physical and psychological support needed by their athletes. Critical, however, to the implementation of coach-delivered sport psychology is the view of the coaches who work with the athletes, as opposed to those who write about

the coach's role. The literature review examined research on coaches' attitudes to sport psychology and their use of sport psychology techniques in some detail. This research is also summarised in Table 2.2. In general, the research on coach attitudes to sport psychology, and particularly to psychological skills training, which has largely been done in Canada and the USA, supported the position that coaches have generally favourable attitudes toward sport psychology and are interested in learning about it.

This research base is now quite substantial and generally consistent.

Research on the use of sport psychology by coaches is less plentiful and less clear-cut. Coaches often claim to use sport psychology techniques, but closer inspection has suggested that there tends to be some overestimation in this respect. Several reasons have been suggested to account for this, including the inflation of positive responding on the commonly used rating scales, due to the operation of a social desirability response set in the research contexts; the misunderstanding of what is meant by the term "sport psychology", the phrase "psychological skills training", or the specific areas of PST, such as relaxation, confidence, or concentration; and the appropriate allocation of high ratings to use of techniques in areas like goal setting, positive attitude, and team cohesion, that are typically recognised as part of the traditional role of the coach. Barriers or obstacles to the implementation of sport psychology perceived by coaches, consistently

included financial limitations, time constraints, lack of expertise on the part of the coaches, and the belief that sport psychology researchers had not converted their work into readily applicable techniques and drills. Even in Western countries that are highly committed to sport, coaches at the elite level in Olympic sports felt that there was insufficient money to employ sport psychologists, but considered that they did not have the time or the expertise to deliver the psychological support themselves, largely because of the absence of applied material. There was also some concern raised in a number of studies and in the writing of sport psychologists, that time allocated to psychological skills training meant equal time lost from other important aspects of training. To counteract this, Martin and Duffield (1994), for example, have developed a program of psychological skills training for coaches, that mainly integrates the psychological elements into other aspects of training, so minimal extra time is needed.

The research on coach attitudes and use of sport psychology suggests that coaches, particularly those working with elite, or potential elite, level athletes are interested in becoming involved in sport psychology delivery, because they recognise its value to the performance of the athletes with whom they work, but they have not been well served by the sport psychology community, in terms of readily useable sport psychology, despite the increasing involvement of sport psychology modules in national

coach accreditation programs in the West. This message seems to have been heeded recently by the National Coaching Foundation in the UK, which has moved to a more applied, field-based approach to the delivery of coach education in sport psychology (Cale & Crisfield, 1994). Yet there is very little research on programs and workshops, although evaluations are more common. The only study of the delivery of a coach education workshop to coaches and the impact of that program on the coaches' behaviour with their athletes, that was discovered during extensive literature searches, was conducted by Hall and Rodgers (1989). The strongest implication arising from that research was, once again, that coaches need sport psychology to be presented in ways that relate directly to their work with athletes, preferably by seeing psychologists or other coaches apply readily accessible techniques with athletes. It can be concluded that, even in the West, there is a need for meaningful training in sport psychology for coaches. This would seem to be even more critical to the psychological support of athletes in Asian countries like Thailand.

Much of the research that has been reported in this literature review adopted questionnaire methods. Sometimes the questionnaires included open-ended, as well as closed items, but, in the main, responses were made on rating scales. This has the advantage that the level of importance attributed to psychological skills or their use can be directly compared. It

does, however, limit responses, and even when open-ended questions are asked, there is no opportunity to follow up to clarify responses or to enlarge on them, as is possible in interview-based research. The responses to rating scale items were typically quite high and several authors indicated that they believed there was some social desirability responding (e.g., Gould et al, 1987; Sullivan & Hodge, 1991). Future researchers would do well to take note of the suggestion made by Gould et al. that observational and interview methods should be used, in addition to questionnaires, in order to check and to enrich the quantitative data.

The Present Thesis

Acknowledging the effort being made by Thailand to develop its sport at the world and international level and the importance of the coaches' role in the delivery of sport psychology to elite athletes in Thailand, the present thesis aimed to examine the development of this Western technological innovation in the culture of the Kingdom of Thailand. Considering the lack of research on the attitudes and use of sport psychology techniques by coaches in Asian countries, the first purpose of the thesis was to examine the knowledge of, interest in, and use of psychological skills training by Thai national coaches. Further, recognising the dearth of research regarding the effects of programs presenting PST to coaches on their attitudes and use of these techniques, both in the Thai context and in Western sport

psychology, the second purpose of this thesis was to investigate the effects of the presentation of a psychological skills training program on the knowledge, interest, and use of this aspect of sport psychology by coaches of elite athletes in Thailand. Two studies were conducted on this issue, the first study used an independent groups experimental design with a follow-up six months after the program. The second study employed a repeated measures design, involving the control group coaches from the previous study, to examine the value of psychological skills training programs with another group of elite coaches. In view of the previous emphasis on questionnaire research, all three studies in the present thesis employed questionnaires to permit changes to be monitored across occasions and to allow comparison with other research, but also used interviews on every occasion in each study, to provide a check on the responses to rating scales, along with supplying richer information on issues central to the thesis. In general, it was predicted that initial knowledge and use of sport psychology by elite Thai coaches would be limited, while interest would be acknowledged. The experience of a PST program by the coaches was predicted to lead to an immediate increase in knowledge and interest, but not use, with use enhanced six months after the program, while knowledge and interest would retain their raised levels from immediate post-program, at the six month follow-up.

Chapter 3: Study of Knowledge, Interest and Use of PST by Thai Elite Coaches

This chapter presents the results of a study of the existing knowledge, interest, and use of sport psychology by a group of Thai elite coaches, representing several of Thailand's major sports. All participants were interviewed and then completed three questionnaires to assess their self perceived knowledge of, interest in, and use of sport psychology. The data from the questionnaires and interviews were analysed and the main trends are discussed in this chapter.

Method

Participants

Forty-two coaches (40 males and 2 females) of Thailand national sports squads from four selected sports, soccer ($n = 8$; Mean age = 40.25, SD = 6.04), boxing ($n = 7$; Mean age = 41.86, SD = 11.07), badminton ($n = 14$; Mean age = 32.57, SD = 6.06) and tennis ($n = 13$; Mean age = 40.15, SD = 8.91), volunteered to participate in this research. These coaches participated by permission and cooperation of the Sports Authority of Thailand. The four sports were selected based on the criteria of popularity, number of high level coaches, and potential for Olympic success. The Sports Authority of Thailand provided a supporting letter (Appendix A). The National Sport Associations facilitated contact with the elite coaches.

Coaches were invited to participate, and they were told that their involvement was voluntary and withdrawal from the study at any time was permitted. Having been told the nature of the research, participants signed an informed consent form (Appendix B) which clearly indicated that all information they provided would be confidential and they understood these points.

Design

This study of the existing perceptions of sport psychology, in particular in the area of psychological skills training (PST), by Thai coaches involved all 42 Thai elite coaches. Semi-structured interviews were first administered and three questionnaires were then administered to the 42 Thai elite coaches to assess their knowledge, their interest in learning more about, and their current utilisation of the PST aspect of sport psychology in their coaching. Means for the whole group for their ratings of 11 areas of applied sport psychology related to PST in terms of knowledge, interest, and use, along with overall means for those three areas were examined. Interview trends and their relationship to the questionnaire results were also studied.

Measures

Questionnaires and a semi-structured interview were used to assess Thai elite coaches' self perceived knowledge, interest, and use of sport psychology.

Questionnaires. Three parallel questionnaires were designed to assess knowledge of, interest in, and utilization of sport psychology by Thai elite coaches. Each questionnaire presented a similar question. The instructions for the Knowledge questionnaire included the question: *“How much do you know about the use of each of the following applied sport psychology topics/techniques in coaching?”* The instructions for the Interest questionnaire included the question: *“How interested are you to learn about each of the following applied sport psychology topics/techniques?”* The instructions for the Use questionnaire included the question: *“How much do you use the following applied sport psychology topics/techniques in your coaching?”*

Each questionnaire then presented 11 topics of PST in applied sport psychology. These topics were chosen because of their substantial role in the area of applied sport psychology. A major reference work in the field (Williams, 1986) and a number of recent applied texts (Albinson & Bull, 1988; Harris & Harris, 1984; Martens, 1987; Nideffer, 1985; Orlick, 1986; Singer, 1986; Syer & Connolly, 1987; Terry, 1989; Weinberg, 1988) were content analysed and on this basis topics which recurred in most sources were derived. The eleven topics derived were motivation, goal setting, stress management, anxiety and arousal, relaxation, imagery, confidence, self-talk, self-thought, attention and concentration, and, finally, energizing

and re-energizing. On each of the three parallel questionnaires, participants rated each topic on a seven point Likert rating scale, where 1 = “very little” to 7 = “very much”, to indicate their level of knowledge of, interest in, or utilization of that aspect of sport psychology, depending on the question which preceded that list of topics and rating scales. The final format of the set of these three questionnaires is presented in Appendix C.

The questionnaire was translated into Thai language based on the principles of cross cultural translation (e.g., Lonner, 1990), in order to ensure that the meanings of the questions and all topics listed in the questions were equivalent. A Thai Ph.D. student in sport psychology and I translated the questionnaire into Thai separately. We then compared translations and, where there was any difference or disagreement we went back to the English and resolved it. Most of the topics have equivalent words in the Thai language, which can be found from an English-Thai Psychology Dictionary. Furthermore, Thai coaches already know the meaning of most of the topics in English, for example, motivation, relaxation, and concentration, so there should not have been any problem for coaches to understand those topics in the Thai language, which also included the original English in the bracket at the end of each item in the questionnaire.

The questionnaires were pilot tested with coaches from physical education colleges, who participated in the 1991 Physical Education Colleges Games in Bangkok, none of whom were in the elite coach sample. Sixty-three coaches were given these three questionnaires in the order Knowledge, Interest, and Use. Four weeks later, the same coaches were given these three questionnaires again in the same order, Knowledge, Interest, and Use. The test-retest reliability of each of the three questionnaires, using Pearson Product Moment Correlation Coefficients, was Knowledge, $r = .92, p < .001$, Interest, $r = .92, p < .001$, Use, $r = .85, p < .001$. It was concluded that the questionnaire scales demonstrated acceptable stability, when no systematic changes were expected. As the questionnaires had face validity by virtue of direct ratings of the specific named topics and content validity based on their derivation from the applied literature, no further validation work was completed. This decision was also based on the knowledge that a substantial semi-structured interview would also be conducted for every coach on every occasion of testing in the main studies, permitting a cross-check to take place.

Interview. The main objective of using the interview was to acquire more detailed information than questionnaires permit about the participants' knowledge of, interest in, and use of sport psychology in their coaching. The more detailed information was expected to clarify the quantitative

results of the questionnaires. A secondary reason for using the interview was to develop good relationships and rapport between the Thai elite coaches and myself as a representative of Thai sport psychology. It was considered to be a crucial moment for presenting the newest sport science knowledge to Thai coaches. If their reaction to this kind of approach was positive, then sport psychology would be more welcome into Thai coaching circles. If they felt unhappy or embarrassed by any disrespectful manner presented by the researcher or by the questions in the questionnaire or in the interview, then they could possibly ignore or withdraw from the important succeeding stages of this research project, which would reflect badly on sport psychology for the future. Thus, considering this important cultural aspect, it was decided to offer the alternative to a rating scale style questionnaire of an interview. Great care was taken in constructing the content and mode of presentation of the interview to encourage open, honest, and full participation by the coaches. The interview followed a semi-structured format in which the main topics of interest were identified and questions generated and polished to introduce those topics. Following initial responses to these questions, probes and follow-up questions were used to encourage the coaches to talk more about their thoughts and feelings. Taking notes from the interviews was preferred to tape recording them after it was noticed that the coaches felt unhappy or uncomfortable

being interviewed with a tape recorder running. Participants were asked the three following questions.

Question 1: *What sport science do you use in your coaching?* The objective of this question was to find out what sport science coaches knew about, especially what they knew about sport psychology.

Question 2: *What are your feelings about using other new sport sciences from Western countries?* The objective of this question was to find out whether or not Thai coaches welcomed new sport science knowledge from countries with different cultures, such as the United States and Europe.

Question 3: *What is the daily practice routine you give your athletes?* The objective of this question was to explore whether or not there were any psychological skills training techniques in the daily practice of these coaches and their athletes?

Each main question was followed up by prompts and encouragement to elaborate on interesting parts, based on my experience and judgment. The use of these three general questions and follow-up probes permitted the exploration of these coaches' knowledge of, interest in, and utilisation of sport psychology techniques, without leading them by referring to specific topics. The interview preceded the administration of the questionnaires, so that the questionnaire topics could not be potential prompts for interview responses. If little was said about sport psychology in answer to any of the

questions, some final probes explored the coaches' experience of the field and it was noted that sport psychology was not introduced voluntarily by the coach.

Procedure

This study was executed from December 1991 to April 1992 in Bangkok, Thailand. Coaches participated in this research by cooperation of the Sports Authority of Thailand. Details of access were reported in the preceding Participants section. The 42 coaches of Thailand national sports squads from the four selected sports, soccer, boxing, badminton, and tennis, were interviewed individually. After having a break of five minutes at the end of the interview, the questionnaires were given to these coaches in the order of Knowledge, Interest, and Use. At this stage, the coaches were unaware of the opportunity to participate in the educational program, as this might have influenced their responses. They completed the open-ended response interviews first, as their answers might have been affected by concepts raised in the questionnaires.

After they had all completed the interviews and questionnaires the invitation was made for the PST program to 21 of the coaches, assigned at random within each sport. Consent forms for that study were presented to these coaches. They were told that they had the opportunity to attend a four day Psychological Skills Training (PST) program in a few months time, in

relation to which they would be asked to complete the interview and questionnaires again immediately after the program. They were also asked if they would complete the questionnaires and interviews on one more occasion (a third), several months after the PST program. The remaining 21 coaches were not told about the PST seminar, but were asked if they would complete interviews and questionnaires twice more in the future. All 42 coaches agreed and were thanked for their involvement in the first study.

Results

The results of the study of the existing knowledge of, interest in, and use of sport psychology by a group of Thai elite coaches, representing several of Thailand's major sports, are presented in this section. Forty-two Thai elite coaches (40 males and 2 females) from four selected sports (soccer, tennis, badminton, and boxing), participated in this study. The results from the three questionnaires on knowledge, interest, and use, and the semi-structured interviews were analysed and the main trends are discussed in this section, which first considers descriptive analyses of the questionnaire responses, then describes the interview results. All statistical analyses of the data from the questionnaires in this study were conducted using descriptive statistics programs of the SPSS Statistical Analysis Package for Windows Release 6.0 (SPSS Inc., 1993).

Questionnaire Results: Knowledge, Interest, and Use

Descriptive statistics were used to analyse the data from the questionnaires. Means and standard deviations of knowledge, interest, and use for each topic (motivation, goal setting, stress management, anxiety and arousal, relaxation, imagery, confidence, self-talk, self-thought, attention and concentration, energizing and re-energizing) are presented in Table 3.1, 3.2, and 3.3, respectively. The topics are presented in descending order of mean ratings, where high scores represent greater knowledge, interest, or use.

Table 3.1 presents the results of self-perceived knowledge of sport psychology of Thai elite coaches in this study. In general, the mean for coaches' knowledge overall is quite high (4.70 on a scale from 1 to 7) for coaches in a country where sport psychology has only been known for a few years and there is no formal training in it. This is not so surprising, because, although sport psychology is very new to Thai coaches, most of the topics, such as confidence, concentration, and relaxation, are familiar to all coaches.

Table 3.1
Means and Standard Deviations of Self-Reported Knowledge of Sport Psychology by Thai Coaches

Topic	Mean	SD
Confidence	5.43	1.31
Relaxation	5.24	1.19
Attention and concentration	4.98	1.41
Goal setting	4.93	1.33
Motivation	4.86	1.24
Anxiety and arousal	4.86	1.47
Self-thought	4.55	1.52
Energizing and re-energizing	4.40	1.68
Self-talk	4.38	1.64
Imagery	4.05	1.71
Stress management	4.02	1.76
Knowledge overall	4.70	1.08

The means of these general topics, which coaches meet on a regular basis, were, thus, scored highest, that is confidence, relaxation, attention and concentration, goal setting, motivation, and anxiety and arousal were given the highest means: 5.43, 5.24, 4.98, 4.93, 4.86, and 4.86, respectively, which were all above the overall Knowledge mean. Other important topics especially in the area of psychological skills training, which are not familiar within practical coaching in Thailand, were scored lowest, that is, self-thought, energizing and re-energizing, self-talk, imagery, and stress

management, had the lowest means: 4.55, 4.40, 4.38, 4.05, and 4.02, respectively, all below the overall Knowledge mean.

Table 3.2

Means and Standard Deviations of Self-reported Interest in Sport Psychology by Thai Coaches

Topic	Mean	SD
Confidence	6.50	0.80
Motivation	6.26	0.83
Attention and concentration	6.17	1.06
Energizing and re-energizing	6.07	1.24
Goal setting	5.95	1.21
Anxiety and arousal	5.95	1.10
Self-thought	5.69	1.09
Relaxation	5.69	1.16
Stress management	5.52	1.42
Self-talk	5.48	1.23
Imagery	5.33	1.48
Mean of interest overall	5.87	0.83

Table 3.2 presents the ratings for interest in sport psychology of all Thai elite coaches who participated in this study. The mean for interest overall is very high (5.87 on a scale from 1 to 7) and considerably higher than the mean for knowledge overall. The results for interest clearly show that Thai elite coaches are very interested in learning about sport psychology. It was somewhat surprising that the coaches expressed such a strong interest in learning more about these sport psychology topics, when

they had just indicated that they already knew a lot about them. It is possible that the coaches felt their knowledge was substantial, but that there was still a lot more to learn. Another possible explanation is that it was very hard for elite coaches in Thailand, who are regarded as experts, to respond with very low scores on a paper and pencil test of knowledge, indicating that they lacked knowledge in very important aspects of mental preparation, such as confidence, concentration, and motivation. When they responded to the interest questionnaire they showed very high interest in learning more about sport psychology, suggesting that they realised that they still have a lot more to learn on these topics. The highest score for interest was still confidence (6.50), followed by motivation (6.26), which was widely mentioned by coaches, who felt that they really wanted to know how to motivate their athletes effectively. That probably accounts for why motivation jumped up to the second highest score on interest. Attention and concentration was still high, with the same third rank as in the knowledge ratings (6.17). Energizing and re-energizing surprisingly rose from the fourth bottom on the knowledge scale to the fourth highest interest score (6.07). That might have reflected the coaches' desire to learn something new. Surprisingly, imagery, self-talk, stress management, and relaxation, which are very important topics in the area of applied sport psychology, were given the lowest ratings (5.33, 5.48, 5.52 and 5.69 respectively).

The mean score for imagery (5.33), which was the lowest score on the interest scale, was still substantially higher than the mean score for imagery on the knowledge scale (4.05). The other topics, goal-setting, anxiety and arousal, and self-thought were scored between these high and low scoring items (5.95, 5.95, and 5.95 respectively), but with high scores in absolute terms.

Table 3.3
Means and Standard Deviations of Self-reported Utilization of Sport Psychology by Thai Coaches

Topic	Mean	SD
Confidence	5.98	1.07
Motivation	5.74	1.13
Anxiety and Arousal	5.57	1.06
Goal setting	5.45	1.27
Attention and Concentration	5.40	1.55
Relaxation	5.17	1.40
Self-thought	5.05	1.43
Energizing and Re-energizing	5.00	1.70
Self-talk	4.81	1.44
Stress management	4.76	1.76
Imagery	4.60	1.59
Use overall	5.23	1.06

Table 3.3. presents the results of self-reported use of sport psychology of all Thai elite coaches who participated in this study. The mean for overall use (5.23) is between that for knowledge (4.70) and that for interest (5.87).

Confidence is still scored highest (5.98), the same rank as in knowledge and interest. Motivation (5.74) is the second highest, followed by anxiety and arousal (5.57), which is higher than its middle ranking in knowledge and interest. Energizing and re-energizing (5.00) which was high for interest, is the fourth lowest for use. Imagery, stress management, and self-talk were again scored lowest (4.60, 4.76, and 4.81 respectively). The other topics, namely goal-setting (5.45), attention and concentration (5.40), relaxation (5.17), and self-thought (5.05) were moderately rated in relation to the high and low rated topics.

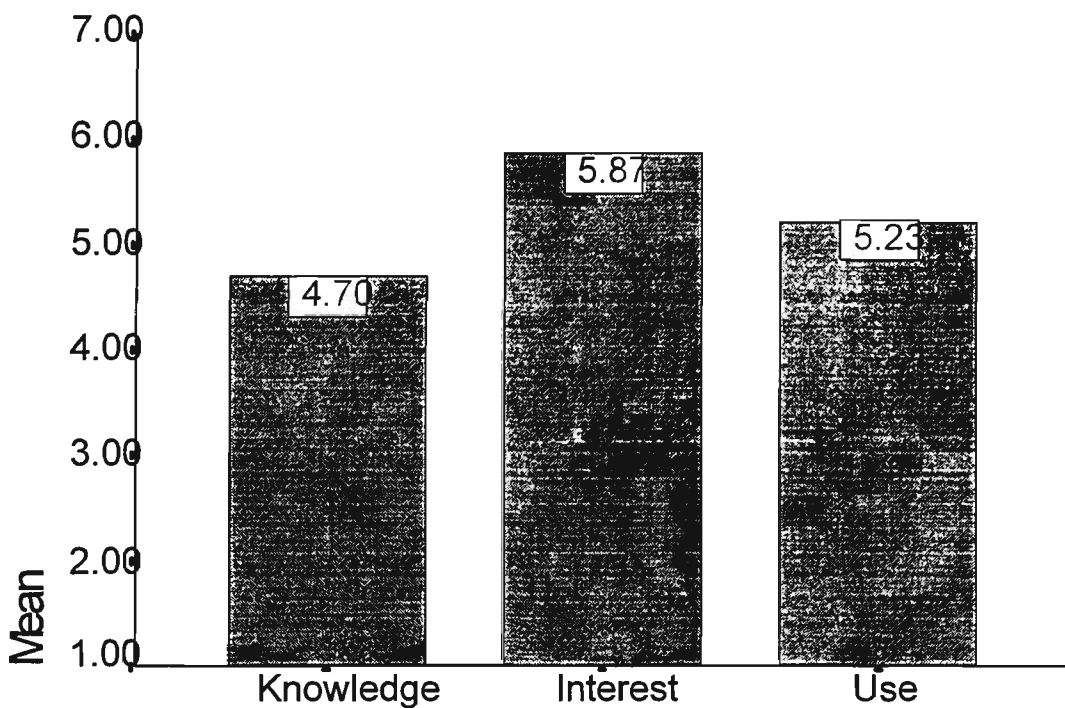


Figure 3.1. Means of knowledge, interest and use of sport psychology of all participants in study 1

The lowest overall mean was found for knowledge. Means overall for knowledge, interest, and use are presented in Figure 3.1. This figure shows very strong interest in sport psychology of the Thai elite coaches, while both knowledge and use were quite high.

Interview Results

Three interview questions were used to explore sport science and sport psychology knowledge, interest, and use with all 42 coaches in this study. The trends overall and examples of the coaches responses are presented in this section. The interviews were conducted in the Thai language. Taking notes from the interview was preferred to tape recording them, as mentioned earlier, after it was noticed in early interviews that coaches felt unhappy or uncomfortable being interviewed with a tape recorder running. The interview answers were noted down virtually word for word in the Thai language. The sentences or phrases that represent the main idea of the coaches' answers were carefully picked up and accurately translated into English with the assistance of Dr. Marc Askew, a senior lecturer in the Department of Asian Studies and Languages, Victoria University of Technology, who has conducted research and given lectures in Thailand and is fluent in both English and Thai languages. Dr. Askew and I translated the Thai notes into English separately. We then compared translations and, where there was any disagreement we went back to the Thai and resolved it.

Thus, the interview quotes that follow are Thai to English translations, they are not the actual words that the person used, they are not verbatim, but they are accurate translations of notes which were close to word for word what was said. The meaning of what the coaches were saying was retained in every case. Because they were not verbatim quotations, no quotation marks are used in the following sections that report typical responses.

What sport science do you use in your coaching? The responses of the participants to interview question number one were consistent. Most coaches, 31 out of 42, reported that they have used sport science in their coaching. Among the coaches who reported that they used sport science in their coaching, seven coaches said that they used a lot, 17 coaches said that they used some, and another seven coaches said that they only used a little sport science. The most popular areas of sport science they mentioned were physiology of exercise, weight training, nutrition, and fitness testing at the Sports Authority of Thailand (SAT) facilities. There were only two coaches who referred to sport psychology. Typical responses for this interview question were:

I use it in teaching the knowledge to my athletes and include it in the training program. For instance, physiology of exercise for building athletes' fitness, some weight training, and setting nutrition menus, especially for the training periods before a tournament.

I use exercise physiology knowledge a lot because I brought the football program from Germany.

I use a little, but I mostly teach them skills. I emphasise very much skills teaching. Athletes must have proper and firm basic skills. I also emphasise physical fitness. Players having good body fitness will perform well.

I use some, mostly I use the knowledge I have learnt from the classroom such as physiology of exercise and sport medicine.

I use a lot of weight training, and nutrition. I always have my athletes tested for their physical fitness at the Sport Authority of Thailand.

The two references to sport psychology, actually focused on specific techniques. They were:

I use a lot for physical exercise, weight training, nutrition, and psychology in training. I use self-talk by allowing my athletes to keep talking while practicing, speaking and using imagery at the same time.

Not only speaking in the competition, but also in training. Let them practice these in the same way as they practice skill training by repeating our speech.

I use meditation. My athletes train by breathing in and out rhythmically and concentrating on their breathing.

The other 11 coaches reported that they did not use sport science in their coaching. Common responses were:

I normally do not make use of sciences. I train my athletes mostly the same way as I was trained by using a training program which is concerned with techniques and skills training.

Actually we learnt quite a lot about this (sport science) when we studied at undergraduate and graduate level, but when we coach we do not use it directly. We mostly emphasize techniques and skill training.

Sometimes we use weight training, but very little. We have to talk to them (the players) a lot to motivate them and keep them concentrating on their practice.

I do not use it as I do not have time. I do not understand it fully. I mostly train my athletes by following the program which emphasises techniques and skills training.

What is your feeling about using other new sport science from Western countries? The responses of the participants to interview question number two were consistent. All 42 coaches reported that they welcomed sport science from Western countries. They were glad to learn new approaches or techniques from the West. Only eight coaches responded a little differently from the others, also noting they were glad to learn, but with the condition

that they might not simply use all techniques. They would consider them first and then choose the ones that fit them and their athletes. Typical responses from coaches were:

I am glad to welcome them. I want the knowledge that has been developed. I believe they are more advanced than us.

I am glad to use it because we have seen examples from the last twenty years where we have not used many techniques. Today is better because most of them we brought from the West. So that we should try to take all new techniques, as many as we can.

I believe that theirs are good and standard, but Thai coaches rarely use them. We cannot catch them up because we did not use or continue using them for a long time, especially knowledge from books. The updated books in this area are generally in English.

Actually, we do not read much, even in Thai, so we would forget them if they were in English.

I would say that theirs is good. Normally we have learnt from them, knowledge and sport techniques; all have been researched and accepted. We should bring it into use.

I think it must be good otherwise it will not be accepted by coaches and athletes in many countries including Thailand.

I do not mind them at all. New technology always comes from the Western countries. The most important thing is that we must use them carefully, because some may not be suitable for use with Asian people. We must try first. We will not just accept all of them, because we are Asian and they are Western. If we take everything it may be too difficult for us. I am not sure, but I will certainly listen to them. I don't mind.

What is the daily practice routine you give your athletes? The responses of the participants to interview question number three were that 37 out of 42 coaches reported that their daily practice routines were physical training in technique, skill, and fitness. There were only five coaches out of 42, who mentioned some activities in their training which were concerned with sport psychology. Typical responses were:

My training routine normally starts with loosening up, warming up, and stretching all muscle groups. Then, practicing techniques and skills following the program which tells us what we will be doing on each particular day, for example, personal skills, teamwork, physical fitness exercises and weight training. At the end of every training session the athletes will do a warm down exercise.

I normally let my athlete do some jogging first, then do free-handed exercise in the court, warm up with the racquets and footwork practice.

After warming up, she will practice hitting the ball every stroke, I myself will feed the balls to her and give some corrections and motivate her to move faster and hit the ball harder. I will emphasise some strokes, especially the ones she needs improve. I let her practice serving and give her a rest and some drink for a few minutes before moving onto the next training which is rallying with me or my assistant. We might play a few games at the end, but not a full set, and let her do some exercise, for example sit ups, which I most emphasise, and finish up the training with warm down.

Comments of the five coaches who reported using some techniques concerning sport psychology were:

I let my athletes do meditation at home for 15 minutes every day by using a breath-in and breath-out technique.

I let my athletes sit down and meditate every day before and after training.

In conclusion, my training consists of fitness, technique, and skill training, and also mental training such as self-talk and imagery.

Now I just want to know how to motivate my athletes to practice consistently with full spirit every day. Coaches want to know about this very much.

The interview not only provided clear information about coaches' feelings and activities concerning sport psychology, but also gave the researcher a very good rapport with these Thai elite coaches which was important for the future studies. The coaches generally appeared to be pleased that a researcher was interested in them and prepared to listen to their views. Most of the participants reported that they used sport science in their coaching, such as physiology of exercise, sports medicine, and nutrition, but there were very few coaches who mentioned sport psychology techniques. The coaches showed a high degree of interest in welcoming and learning about sport psychology from Western countries.

Overall, the interview data suggested that most coaches knew about sport science particularly physiology of exercise and use it in their coaching, but they did not know much about sport psychology techniques, and they used sport psychology techniques very little in their training. The interview did suggest that they were very interested to know more about sport sciences from western countries, because they believed that what has been done or researched from western countries should be good or better than their present approach alone, and it would be of benefit for them in their effectiveness as coaches to know more about the new knowledge.

Discussion and Conclusions

The following discussion considers the formal conclusions from this study in terms of the questionnaire and interview responses. It then discusses the integration of the questionnaire and interview results, and the benefit of using both questionnaires and interviews in this research. The findings from this chapter are then used to suggest some trends for future research and practice. Finally, there are some remarks on Thai elite coaches' attitudes to sport psychology.

Summary of Conclusions

This study explored attitudes to PST aspects of sport psychology of Thai elite coaches. The questionnaires and interviews were used to examine their current knowledge of, interest in, and use of sport psychology. The questionnaires and interviews demonstrated that, although there was some disagreement between the two methods, in general, the coaches did not have a great deal of knowledge of sport psychology to use in their coaching, but they were very interested to learn more, especially new knowledge from western countries. Obviously, because they did not know a lot, there was not much application of the techniques in the practice of the coaches.

Integration of Questionnaire and Interview Results

The results of the research from the questionnaires and interviews were integrated together, in order to extract the information, which would reflect

the real attitudes of the coaches most accurately. Both questionnaires and interviews seemed to work very well in a way, but they also had their specific weaknesses. Using both of them, it was felt could minimise the weaknesses of the study overall.

In this study the coaches responses to the questionnaires suggested that they had quite high knowledge of PST techniques and used them quite a lot, but in the interview the coaches mentioned very little about knowing or using sport psychology. They did mention more about other sport sciences, such as physiology of exercise, which some of them use in their coaching. There might be several reasons why they scored high on the questionnaires. It could have been that they did not feel the responses they made were high, because the highest scores given for interest, were much higher than those for use and the knowledge means reflected the lowest scores or the three questionnaires. The questionnaire responses overall were higher than would be expected from Western people. This might also have a cultural basis. Thai people place great emphasis on politeness and they believe that saying no is impolite. While there is no doubt that there was great interest in the sport psychology area, it is likely that the results of the questionnaires are inflated by the Thai propensity to agree or concur out of politeness. It is also possible that because of being a coach, who is regarded as a teacher, which is a very high status position in the Thai culture, it was too hard to write

down on the paper that they knew very little about something that they felt they needed in their own profession. From these considerations, it can possibly be conceived that the coaches had limited knowledge and use of sport psychology as the interviews suggested, but responded in culturally influenced ways to the questionnaires. There was no contradiction on the interest measures. The coaches scored highest in the questionnaire and this was supported by the interviews, where all coaches expressed considerable interest to learn new sport sciences from western countries.

Relationship to Theory and Research

The coaches examined in the present study reported a high level of knowledge of sport psychology in their responses to questionnaire ratings of 11 aspects of psychological skills training. This was surprising, because there is no formal sport psychology training in the coach education system in Thailand. Other researchers have also found high levels of knowledge reported on rating scales (e.g., Gould et al., 1987; Sullivan & Hodge, 1991), although Sullivan and Hodge also found that 73% of their New Zealand coaches felt that their level of knowledge was not adequate for their athletes' needs. In the Thai context Sontimuang (1993) found that attempted use was high among national and University Games coaches. On the other hand, Buantuan (1993) found low self-reported knowledge in a group of University Games coaches. An advantage of the present study over all the

previous work was the inclusion of an alternative mode of assessment, the semi-structured interviews conducted with coaches before they completed the questionnaire. Most of the questionnaire studies, although largely based on rating scales did use some open-ended items (e.g., Gould et al., 1987; Hall & Rodgers, 1989; Sullivan & Hodge, 1991), but these tended to focus on specific issues, rather than cover the same ground to confirm rating scale results. In the interviews, most of the coaches made it clear that they did not know much about sport psychology. This discrepancy was accounted for in terms of the Thai culture, where an expert cannot admit a lack of knowledge in writing, a form of communication that is perceived to be more public than verbal communication, even though the coaches were ensured of anonymity in both cases. It is likely that there was also a general effect of social desirability responding, as suggested in their studies by Gould et al. and Sullivan and Hodge.

The results of the present inquiry into interest of elite coaches in sport psychology indicated that the Thai coaches of elite athletes were very interested to learn about sport psychology. All of the 11 areas of sport psychology received high ratings, the highest being found for motivation and for attention and concentration. These results are consistent with those found in other studies. The early study of US high school and college coaches reported by Silva (1984) found a high level of interest in sport

psychology, as did that of Gould et al. (1987), specifically with wrestling coaches. Sullivan and Hodge (1991) found a high level of interest in New Zealand national level coaches, as did Moran (1993), using an international group of professional tennis coaches, Rice and Ostrow (1994) with a sample of NCAA Division I baseball, softball, and tennis coaches in the US, and Sontimuang (1993) for high level coaches in Thailand. In the case of interest, the interview responses of coaches in the present study supported the questionnaire ratings, with these coaches expressing a high level of interest. Thus, the present study is certainly consistent with previous research on the level of interest of coaches in sport psychology.

Self-reported use of sport psychology techniques by the Thai coaches in the present study was also moderately high in terms of questionnaire responses. When interviewed, however, the coaches reported little personal use of psychological skills training techniques. It should be noted that in the interviews, coaches had to generate the names of the techniques they used, so their responses would be limited if they knew little about sport psychology. In completing the questionnaires, which happened after the interview, the names of the techniques were provided, so that all that was necessary was a rating. The questionnaire finding is consistent with some previous research, such as that of Gould et al. (1987), which by eliciting responses on success of change of behaviour with various psychological

techniques, suggested by implication that the coaches used such sport psychology techniques. It is not clear from the study whether the lower ratings observed for PST items on success, than for other areas of sport psychology, means that they were used frequently, but were rarely successful, or that they were not used much, so there was not a large amount of success with them. In the study by Sullivan and Hodge (1991), 96% of the coaches said they used sport psychology techniques, but it should be noted that these were national coaches. Hall and Rodgers (1989) reported that responses to their Use of Mental Training Questionnaire (UMTQ) by Canadian Level 1 and above figure skating coaches were high across the range of items they included. Coaches rated a small and somewhat idiosyncratic group of techniques, the items comprising imagery, focusing, use of cue words, competition strategies, and relaxation, techniques to be used in a two and a half hour workshop. Sontimuang (1993) found that expert coaches in Thailand reported a high level of “attempted use” of PST techniques. Blinde and Tierney (1990) found that implementation of PST techniques was moderate. Techniques, including goal setting and team building, that might be perceived to be part of the coaches’ traditional role, were rated higher than PST techniques, whereas areas like retirement counselling and injury rehabilitation were rated lower than PST. Haslam and McDonald (1993) found that self-reported use, as well as knowledge,

increased as the level of the coach went up. This is consistent with a relatively high level of use by coaches at the national level, but Haslam and McDonald did not specify the amount of knowledge at each level, just that there was a positive relationship. More consistent with the interview responses in the present study is research that found limited use of sport psychology by coaches, such as that conducted by Rice and Ostrow (1994). Their NCAA Division I coaches reported little use of psychological services, but Rice and Ostrow also found that experienced coaches used PST more with their athletes, than did less experienced coaches. Indirect evidence comes from the semi-structured interview research of Partington and Orlick (1987) with Canadian Olympic coaches. They asked what role the coaches played in sport psychology delivery and how effective was their contribution, but reported nothing in their results, discussion, or recommendations on these issues. It must be assumed that the coaches played little or no role. In contrast to the report by Sontimuang, cited earlier, Buantuan (1993), studying similar expert Thai coaches at about the same time, found that they made little use of sport psychology with their athletes. The literature seems to be confused on the issue of coach use. It is possible that the pattern found by Haslam and McDonald and Rice and Ostrow might explain this, that is, it could be that coaches at higher levels, who would typically be more experienced, use sport psychology more than

inexperienced coaches. This is contradicted by the results of Partington and Orlick, however, with Olympic coaches. At this stage, it seems more likely that variations might be accounted for in terms of the way in which use of sport psychology was addressed, that is, the wording of the question, or perhaps, more precisely, the way in which the wording was interpreted by the particular coaches in each study. One specific example of the way in which wording can affect response is reported by Moran (1993). He found that visualisation was rated the lowest of a set of psychological skills for effectiveness, but imagery of shot and imagery of tactics were rated at the top of a list of specific techniques. Moran proposed that this discrepancy arose because the coaches in his study were not very familiar with the term visualisation. Further studies of use of sport psychology techniques are needed, examining coaches at different levels and in a range of sports, but using a consistent and carefully devised terminology.

Overall, it can be concluded that the present study is consistent with previous research. The most consistent finding is that coaches express a high level of interest in sport psychology. Knowledge and use are more variable, but typically quite low in Western, as well as Thai samples. Further, the study of Thai elite coaches throws light on the social desirability responding of previous work, as well as the potential for Thai cultural reactions to questionnaires given to experts. As researchers

including Gould et al. (1987) and Sullivan and Hodge (1991) suspected, the interviews in the present study confirmed that rating scale responses produced overestimates of knowledge and use of sport psychology techniques.

Methodological Considerations

The questionnaires seemed to work well in terms of accessing the quantitative information and the interviews also were effective in acquiring more detailed information. Further, they provided a very good opportunity for getting to know the coaches better. When comparing the questionnaires to the interviews on this occasion, it was clear that there was some inconsistency, with the questionnaires and the interviews not giving the same results in all cases. There was the reflection of questionnaire responses in the interviews that the coaches were interested in sport psychology, but there was also the indication that they did not know much about sport sciences, especially sport psychology and they did not use sport psychology very much, whereas they typically scored quite high on these issues in the questionnaires. Therefore, there is some concern about the discrepancy. It might be explained in the terms that, for written responses, the coaches were more nervous or less relaxed, and, thus, more defensive. In the Thai culture, it was very hard for coaches, who are regarded as the specialists in this field to admit in writing that they know very little about issues

considered to be associated with their expertise. As noted in the previous section, other studies that have used rating scales with Western, as well as Thai samples have found apparently inflated self-reported knowledge and use (e.g., Gould et al., 1987; Sontimuang, 1993). While a cultural effect cannot be ruled out, there does also seem to be a general element of social desirability responding, as questionnaires are typically worded in such a way that they refer to how much or how often something is done, perhaps signalling that it is a desirable thing to do. As noted earlier, the description of the study by Gould et al. suggested that they assumed that the coaches used sport psychology techniques, asking instead, how successful the coaches rated their use of such techniques to be. This potential bias was not present in the interviews, as the interviewer simply asked the coaches to talk about their use of sport science; in the first instance, sport psychology was not even mentioned and the coaches had to generate their own sport psychology techniques. The outcome was that few sport psychology techniques were mentioned.

Although the responses on the questionnaires were high for initial, untreated conditions, whereas it was known that the coaches had received little or no formal training within the Thai coach education framework, it was decided that it was not appropriate to modify the rating scales as this would affect comparisons between the present data and that reported by the

coaches after they had received information on these aspects of PST. It was recognised that this would limit substantially the margin for coach responses to move in a positive direction, with less than one scale point on a seven-point scale available on interest, for example. Still, it was felt that the requirement for the questionnaires to be directly comparable was paramount.

Considering the questionnaires themselves, the conclusion was that they were effective. They were clear and straightforward. The coaches did not need clarification of the instructions, not did any coaches produce inappropriate responses. Scoring was also direct and simple. The rating scale questionnaire approach has been the most popular in research on coach involvement in sport psychology, despite the drawbacks already noted. Different numbers of items have been employed in the studies to date, from as few as five (Hall & Rodgers, 1989) to as many as 21 (Gould et al., 1987; Sullivan & Hodge, 1991). Some studies have made a distinction between items that refer to psychological skills and those that refer to psychological techniques (e.g., Moran, 1993), probably based on their discrimination by Vealey (1988), but most studies have not made that distinction, including the present one. That seems to be a weakness, that could be overcome in future studies, but it was felt that it was not appropriate to restructure the items or the instructions to the questionnaires

at this stage. The use of 7-point Likert scales for the examination of knowledge, interest/importance, use/effectiveness of psychological skills training is consistent with most of the questionnaire research in this field (e.g., Gould et al., 1987; Hall & Rodgers, 1989; Moran, 1993; Sontimuang, 1993; Sullivan & Hodge, 1991), whereas Blinde and Tierney (1990) employed 5-point rating scales. Grove and Hanrahan (1988) opposed the use of rating scales, following a pilot study that showed how initial ratings by athletes on the Self-Analysis of Mental Skills (SAMS) questionnaire produced a ceiling effect. Grove and Hanrahan noted that the ceiling effect arose because most athletes were “giving themselves consistently high ratings across most of the skills” (p. 229). For their main study, they preferred items to be ranked, so that players had to assess each skill relative to the others. In the present research, it is predicted that ratings of knowledge, interest, and use of all the psychological skills will increase as a result of intervention, the important issues being whether they do increase and, if so, by how much each rises. Certainly, the high levels of ratings in the present study limit the extent of potential increase following an intervention, but this approach is still considered to be necessary for the purposes of comparison. Using the ranking approach, actual knowledge, interest, or use could decrease, but this would not be evident, as what would be shown is relative shifts in ranks.

The interview process operated smoothly. The coaches generally appeared comfortable and talked without a great deal of prompting. Their responses to the questions were relevant and little clarification of the meaning of the questions was needed. Although their main focus was different in each case there have been two informative studies that used interview methods. Partington and Orlick (1987) used a semi-structured approach, as was used in the present study, in their work with Canadian Olympic coaches, but found little that is strictly relevant to the present research. Bloom et al. (1995) adopted an open-ended interview technique, based on a grounded theory methodology, to identify major areas of support that coaches thought they needed. Thus, none of the studies of knowledge, interest, use, importance, or effectiveness have employed interview techniques until now. Nonetheless, these qualitative methods have certainly provided rich information, especially when a skillful follow-up probing of initial responses is used. It was, thus, considered that the questionnaire and interview techniques were suitable for use in the succeeding studies.

Also, while the two measures did provide some contradictions, it is valuable to have two sources of information, because between them a clearer picture can emerge. It was decided to retain these two techniques, so that in the future studies in the thesis it would be possible to make direct comparisons with the original attitudes of the coaches. It was also noted that

using the two methods would permit results to be cross-checked between the different sources, an approach that proved valuable in the interpretation of the results of the present study.

Implications for Future Research

Although the present research indicated that the coaches had high levels of knowledge, use, and interest in the questionnaires, the interviews suggested that there was little knowledge and very little use of sport psychology by the Thai elite coaches. They were very interested in looking for new sport science, such as sport psychology and biomechanics, but they did not know how to get access to sources of information on this field.

Consistent with much of the previous research, it was found that coaches of elite athletes in four major sports in Thailand had little knowledge of sport psychology skills and reported little use of such skills in their work with athletes (e.g., Buntuan, 1993; Partington & Orlick, 1987; Rice & Ostrow, 1994; Silva, 1984). At the same time, these coaches expressed a high degree of interest in sport psychology, again, as has typically been the case in previous research (e.g., Gould et al., 1987; Moran, 1993; Rice & Ostrow, 1994; Silva, 1984; Sullivan & Hodge, 1991). Based on these conclusions, it was suggested that there is great potential for examining the value of coach education programs for developing areas like sport psychology or for the greater inclusion of sport psychology training in existing coach education

programs in Thailand. Future research should investigate the value of presenting various coaching education programs to elite coaches to make them better informed about the potential for the application of sport psychology. It is clear that many coaches do not really have much awareness of sport psychology. They said that they were really interested in finding out more knowledge, but they do not have a clear conception of what sport psychology is about. Thus, presenting coaches with an introductory coach education program on sport psychology, especially PST, that could help them to learn about the nature of sport psychology and see the potential in it for their athletes would be likely to increase the use of sport psychology techniques made by those coaches in their practice.

Implications for Practice

Many people now propose that sport psychology is an important element of preparation for elite athletes. Today all elite athletes have a high level of technical proficiency and physical conditioning, so, often, the difference between winners and losers in big events is based on psychological readiness or preparedness, as elite performers like Chris Evert (Loehr, 1994), and Jimmy Connors (Weinberg & Gould, 1995) have pointed out. The present study has shown that there is a high level of interest in learning about sport psychology in elite level coaches in Thailand, at least in the four sports represented in this study. That interest

should stimulate the motivation to learn about sport psychology, provided that the opportunity presents itself. It is important for the future of Thai sport that Thai elite coaches, and even sub-elite, and junior level coaches are made more aware of sport psychology, and especially psychological skills training, through coach education programs, so that they have the information to apply in their work with elite athletes. This coach education must involve those with the expertise in sport psychology to train coaches in its implementation with their athletes. Thus, the development of training and accreditation for coaches and sport psychologists should be closely linked.

Concluding Remarks

This study showed that the coaches' responses to the questionnaires reflected much higher levels of knowledge and use, compared with the comments they made in the interviews about the sport psychology that they knew and used. The interviews seemed to more accurately reflect the real situation, at that time. It is clear that there was a lack of knowledge and little use of techniques. The expression of substantial interest appeared to be genuine, although the interest was limited because the coaches did not know enough about sport psychology to express informed opinions on those aspects of the field that interested them. There was, however, a willingness to learn about new aspects of athlete preparation. The discrepancy between

the questionnaires and interviews might partly reflect social desirability responding, as in Western studies. Also, it could be explained in terms of the cultural behaviour of Thai people. On one hand, experts in Thailand would be reluctant to admit lack of knowledge and use of techniques that might be expected to be part of their expertise. On the other, Thai people love to learn and try new things, especially those coming from America or European countries. The presentation of a PST education program to such elite coaches, followed by further examination of their attitudes and behaviour, thus, seems to be warranted.

Chapter 4: Study of the Effect of a PST Program on Knowledge, Interest, and Use of PST by Thai Elite Coaches

The review of literature in chapter 2 and the results of the study reported in chapter 3 of this thesis were consistent in indicating that elite, as well as less advanced level, coaches are very interested in the potential of sport psychology to provide support for their athletes. They are also willing to become involved in the delivery of sport psychology training to athletes. The evidence for this comes from a wide range of sports and from Western countries, as well as from Thailand. Furthermore, the research on coaches' attitudes and self-reported behaviour, including the results of the study reported in chapter 3, suggest that most coaches do not have sufficient knowledge to implement sport psychology training, nor do they currently use sport psychology techniques to a great extent with their athletes. It is proposed that these conclusions are now clear, especially in the light of the results of the combination of questionnaire and interview methods employed in the previous study. Thus, it is important for research to examine the effects on coaches, especially at the elite level, of programs designed to train them to deliver psychological skills training to their athletes.

This chapter considers the immediate and delayed effects on knowledge, interest, and use, resulting from presenting a PST program to Thai elite coaches. It compared knowledge, interest, and use of those who received the program to knowledge, interest, and use of the control group of Thai elite coaches who did not. The 42 coaches from the previous study were divided into two groups, the experimental and the control group, at random within sport, so that there were equal numbers of coaches from each sport in the experimental and the control groups. Then a PST program was given to the experimental group. After the program, assessment was executed by giving a similar interview and the same three questionnaires to the participants in both groups, in order to find out whether there were any changes in knowledge of, interest in, or utilisation of sport psychology in coaches in these two groups as a result of the program. The study also considered the influence of the PST program on knowledge, interest, and use six months after the program was presented. Similar interviews and the same questionnaires as before were administered to the coaches in both the experimental group and the control group, in order to assess whether there were any further changes in their self perceived knowledge of, interest in, and utilisation of sport psychology.

Methods

Participants

The 42 coaches from four selected sports, soccer, boxing, badminton, and tennis, from the previous study (see Participants section in chapter 3) were assigned at random, within each sport, to the experimental and the control group.

Design

Using a between groups design, half the participants, namely the experimental group, were given an applied sport psychology program and the other half, namely the control group, acted as controls. A planned, four day applied sport psychology program was given to coaches in the experimental group, while the control group continued with their usual program. An immediate assessment was conducted after the experimental group finished the applied sport psychology program, by giving similar semi-structured interviews and the same questionnaires as in the previous study, to coaches in the experimental group. Coaches in the control group were given the same interview and questionnaires as on the first occasion, as soon as possible after the experimental group completed the program, in order to assess whether there had been any change in their self-perceived knowledge of, interest in, and utilisation of sport psychology, due to factors other than the PST program and to compare their responses with those of

the experimental group with minimal variation in time. A delayed assessment was then executed six months after the experimental group finished the applied sport psychology program, by giving similar semi-structured interviews and the same questionnaires as before, to coaches in both the experimental group and the control group, in order to assess further whether there had been any change in their self-perceived knowledge of, interest in, and utilisation of sport psychology.

Measures

Questionnaires and interviews were used in a manner similar to that of the study of initial attitudes to sport psychology reported in chapter 3.

Questionnaires. The same questionnaires on self-reported knowledge of, interest in, and use of sport psychology were used as in the previous study (see Questionnaires sub-section in chapter 3).

Interviews. The same interview questions were asked as in the previous study, except that three additional direct questions were added to the end of the interview schedule for the experimental group immediately after the program, which was regarded as Occasion 2 that all coaches were assessed. The control group was only presented with the same three main interview questions as in the previous study .

The first additional question was: *What is your feeling about this applied sport psychology program?* It was included to find out whether coaches were satisfied with the information presented in the PST program.

The second additional question was: *What would you think if this applied sport psychology program was presented to all coaches in Thailand?* It was presented to find out whether or not the coach felt that the program was of value to Thai coaches in general.

The third additional question was: *Do you have any plans to utilize psychological skills training in your coaching?* It was asked to find out the coaches' intention of using psychological skills training in their future coaching. Again, these general questions were followed up by prompts and encouragement to elaborate on interesting parts, in order to explore relevant themes being expressed.

A similar, semi-structured interview was presented to the experimental group, in the delayed assessment which was executed six months after the seminar. The three questions which were added in the semi-structured interview in the assessment immediately after the seminar were omitted, as they were only relevant to the immediate post-program interview. Two additional questions were added, instead, to the end of the interview. The additional questions were: *Have you used sport psychology in your coaching for the last six months?* and *Do you have any suggestions and any*

problems in using sport psychology techniques? These questions aimed to find out how coaches were now using sport psychology techniques in their coaching and their assessment of their experiences with the techniques. The control group again received the same interview questions as in the original assessment. The detail of the interview questions are presented in Appendix D.

Treatment

A Psychological Skills Training (PST) Program was developed by compiling the main techniques of PST, which were most referred to in current/contemporary applied sport psychology texts. The program, thus, prioritised the topics included in the questionnaires, as these were originally determined from a content analysis of a range of sport psychology texts. These topics were motivation, goal setting, stress management, anxiety and arousal, relaxation, imagery, confidence, self-talk, self-thought, attention and concentration, and, finally, energizing and re-energizing. The program was presented to coaches in the form of an educational seminar, which used a combination of lecture, discussion, and workshop teaching methods. A summary of the program, referring to session-by-session content, is presented in Appendix E. In that Appendix it can be seen that the topics were grouped into themes, representing related issues.

The PST program was developed under expert sport psychology supervision at Victoria University of Technology, Melbourne, Australia. In the meantime, I gained more experience in this area by working as an assistant in several sport psychology workshops and Applied Sport Psychology classes at Victoria University of Technology.

Procedure

Continued access to the 42 coaches who had participated in study 1 was arranged through their sports organisations. Dates and location of the four day seminar were arranged with the support of Srinakharinwirot University (support letter in Appendix F). Letters were sent to the 21 experimental group coaches and follow-up telephone contact was made to assure that they would be attending the PST seminar, that they knew where it was to be located, and the time at which it would start.

The experimental group coaches (n=21) attended the PST program on four consecutive days in February 1993. The first morning involved a general introduction to PST followed by discussion of stress management. In the afternoon, discussion of the basic model of PST was followed by a goal setting workshop. On the second day, the morning lecture was on anxiety and arousal, followed up with some tests of state and trait anxiety. In the afternoon, there was a workshop on relaxation and meditation. On the third day, the morning session was a lecture/workshop on imagery. In the

afternoon discussion on attention and concentration was the focus of the session. On the fourth day, the morning discussion was on the topic of confidence. On the final afternoon and the whole of following day the coaches were assessed by interview and questionnaires, as in the first study, which was presented in chapter 3, except that three questions were added to the end of the interview for the experimental group, as described in the Interview sub-section of the Measures section of this chapter. The control group coaches (n=21) were assessed shortly after the program using the original interview and questionnaire.

Six months after the seminar, in September 1993, a delayed assessment was executed by giving similar, semi-structured interviews and the same questionnaires as before to coaches in the experimental group. The three questions which were added in the semi-structured interview in the assessment immediately after the seminar were omitted, as they were only relevant to the immediate post-program interview. Two additional questions were added, instead, to the end of the interview, and these are detailed in the Interviews sub-section. The control group once more received the same questionnaire and interview questions as in the original assessment at approximately the same time.

Debriefing of the experimental group took place after they had completed the questionnaires and they were thanked for their participation.

In the course of the debriefing, any questions were answered and the purpose of the study was fully explained. Any further comments of the coaches in this group were noted. Because of their 18 month involvement with no benefit up to this point, the control group coaches were offered the opportunity to complete the PST program, in the near future. They all accepted, so their involvement was structured into a repeated measures study, which is presented in the next chapter, chapter 5. They were not debriefed at this point, because of their continued involvement.

Results

For the questionnaire and the interview data, three stages of analysis were conducted. First, the original data from 42 Thai elite coaches, that was collected and reported on as a whole group in the previous chapter, was divided into the experimental group (n=21) and the control group (n=21). This questionnaire data was tested for any significant difference at the pre-treatment stage, that might have arisen by chance. Similarly, the interview comments of the coaches assigned to the experimental group and those assigned to the control group were compared for any differences in overall patterns between the groups several months prior to the PST program. Next, the interviews and the questionnaires, for the experimental and control groups, immediately after the former had completed the four day program, were analysed. Finally, the knowledge, interest, and use responses to the

questionnaires of the experimental and control groups six months after the program, were analysed, along with their responses to the interview questions.

For the purposes of comparison, the data is presented here first for the results of the questionnaire analyses on all three occasions. The interview comparisons are then considered. All data were analysed by the SPSS Statistical Analysis Package for Windows Release 6.0 (SPSS Inc, 1993). All testing was at the 0.05 significance level.

Questionnaire Results for Preprogram Differences

The overall means for knowledge, interest, and use of the 42 coaches, at the preprogram stage, divided into the experimental group (n=21) and the control group (n=21) are illustrated in Figure 4.1.

Figure 4.1. indicates that the differences between the experimental and control groups on Knowledge, Interest, and Use at the preprogram stage were small, when considered across all 11 items. For the Knowledge category the control group scored marginally higher, whereas the experimental group had slightly higher overall means for Interest and Use.

Because the overall means could be artificially drawn together, being the average of 11 specific item means, further examination of the preprogram scores for the experimental and control groups was carried out at the level of individual items.

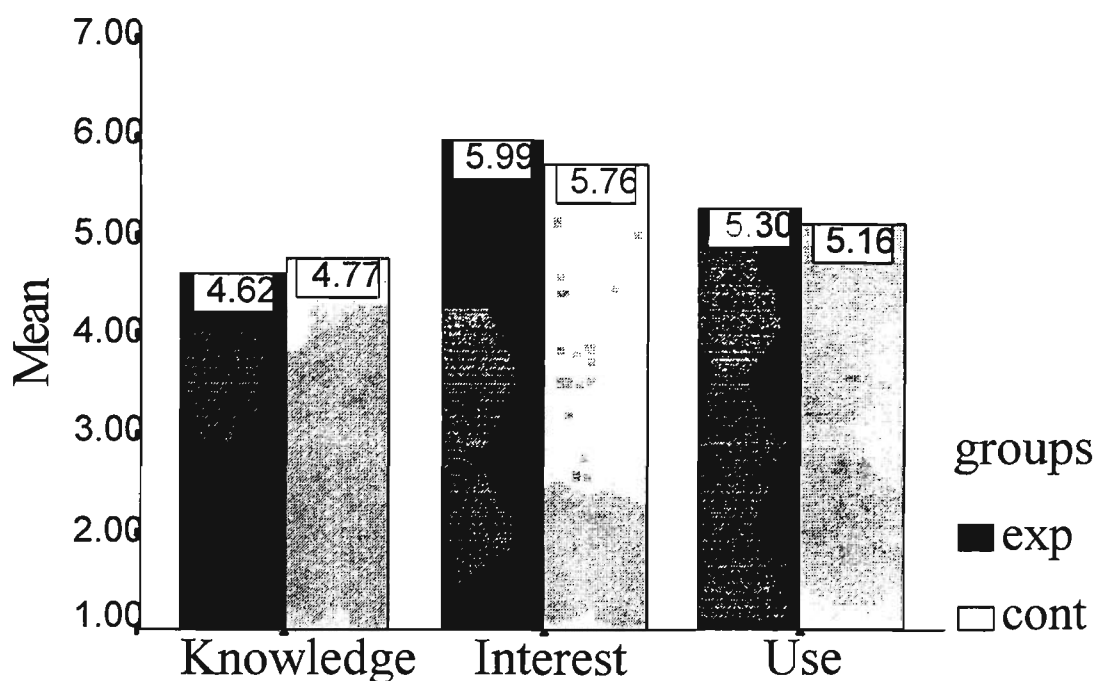


Figure 4.1. Means of knowledge, interest, and use prior to the PST program.

Means and standard deviations of individual questionnaire items for Knowledge in the experimental and the control groups at the preprogram stage are presented in Table 4.1.

Means typically varied by only a small amount between groups for individual items. Usually the mean differences for the experimental and the control groups were relatively small, often around .3, with standard deviations of 1.0 to 1.5, occasionally approaching 2.0 within groups.

Table 4.1
Means and Standard Deviations of Subjective Assessment of Knowledge of Sport Psychology by Thai Coaches in the Experimental Group and the Control Group Prior to the PST Program

Topic	<u>experimental group</u>		<u>control group</u>	
	Mean	SD	Mean	SD
Motivation	4.90	1.09	4.81	1.40
Goal setting	5.00	1.10	4.86	1.56
Stress management	3.86	1.62	4.19	1.91
Anxiety and Arousal	4.76	1.41	4.95	1.56
Relaxation	5.43	1.08	5.05	1.28
Imagery	3.86	1.59	4.24	1.84
Confidence	5.14	1.24	5.71	1.35
Self-talk	4.43	1.40	4.33	1.88
Self-thought	4.43	1.47	4.67	1.59
Attention and Concentration	4.81	1.25	5.14	1.56
Energizing and Re-energizing	4.24	1.76	4.57	1.63
Knowledge overall	4.62	0.92	4.77	1.24

For seven of the 11 items, the mean knowledge reported by the control group coaches was higher than that of the experimental group coaches. A One-Way Analysis of Variance (ANOVA) showed that there was no significant difference between the means for the experimental group and the control group, $F(1, 40) = .20, p > .65$.

Means and standard deviations of individual questionnaire items for Interest in the experimental and the control groups at the preprogram stage are presented in Table 4.2.

Table 4.2
Means and Standard Deviations of Subjective Assessment of Interest of Sport Psychology by Thai Coaches in the Experimental Group and the Control Group Prior to the PST Program

Topic	<u>experimental group</u>		<u>control group</u>	
	Mean	SD	Mean	SD
Motivation	6.24	0.77	6.29	0.90
Goal setting	6.14	0.96	5.76	1.41
Stress management	5.71	1.31	5.33	1.53
Anxiety and Arousal	6.00	1.22	5.90	1.00
Relaxation	5.90	1.14	5.48	1.17
Imagery	5.52	1.12	5.14	1.77
Confidence	6.38	0.86	6.62	0.74
Self-talk	5.81	1.03	5.14	1.35
Self-thought	6.14	0.85	5.24	1.14
Attention and Concentration	5.90	1.09	6.43	0.98
Energizing and Re-energizing	6.10	1.04	6.05	1.43
Interest overall	5.99	0.77	5.76	0.89

Again, there was some variation between the experimental group and the control group means. It was a bit larger here, typically between .4 to .5, with two differences of .7 to .8. Standard deviations within the groups were lower on the whole. The biggest differences were for self-talk .6, self-thought .9, both being higher in the experimental group. There were two particularly noteworthy points about this data. First, as reported in chapter 3, the means were consistently high for initial interest. The relatively small standard deviations indicate that individual ratings were also consistently

high. Second, for interest, means for all but three of the items were higher in the experimental group. Nonetheless, a One-Way Analysis of Variance (ANOVA) showed that there was no significant difference between the means for the experimental group and the control group, $F(1, 40) = .76$, $p > .35$.

Means and standard deviations of individual questionnaire items for Use in the experimental and the control groups at the preprogram stage are presented in Table 4.3.

Table 4.3
Means and Standard Deviations of Subjective Assessment of Use of Sport Psychology by Thai Coaches in the Experimental Group and the Control Group Prior to the PST Program

Topic	<u>experimental group</u>		<u>control group</u>	
	Mean	SD	Mean	SD
Motivation	5.62	0.97	5.86	1.28
Goal setting	5.76	0.77	5.14	1.59
Stress management	4.95	1.60	4.57	1.94
Anxiety and Arousal	5.57	0.98	5.57	1.17
Relaxation	5.48	0.98	4.86	1.68
Imagery	4.62	1.43	4.57	1.78
Confidence	6.00	0.95	5.95	1.20
Self-talk	4.81	1.17	4.81	1.69
Self-thought	5.14	1.28	4.95	1.60
Attention and Concentration	5.38	1.43	5.43	1.69
Energizing and Re-energizing	5.00	1.55	5.00	1.87
Use overall	5.30	0.84	5.16	1.27

The means for use showed less variation between the experimental group and the control group. The only noticeable differences were for goal setting (.62) and relaxation (.64). The means were typically lower than those for interest, but a little higher than those for knowledge. There was greater variation in the means between items. These points were noted in chapter 3 for the whole sample, but they were repeated for the two groups here.

Although the differences were often marginal, six items had higher means for the experimental group, two control group means were higher than the corresponding Experimental values, and, for three items, the experimental group and the control group means were identical. A One-Way Analysis of Variance (ANOVA) showed that there was no significant difference between the means for the experimental group and the control group, $F(1, 40) = .20, p > .65$.

Questionnaire Results for Immediate Postprogram Differences

This assessment considers the immediate effects of presenting a PST program to elite Thai coaches, comparing questionnaire responses of those in the experimental group, who received the program, to the responses of those in the control group, who did not. The same three questionnaires were administered to the participants in both groups in order to find out whether there were any changes in knowledge of, interest in, or utilisation of sport psychology, following the PST program.

The overall means of knowledge, interest, and use of the experimental group and the control group immediately after the PST program was given to the experimental group, are illustrated in Figure 4.2. From this figure, it is clear that there was a substantial difference between the knowledge of the two groups and a moderate difference on interest, but only a small difference for use.

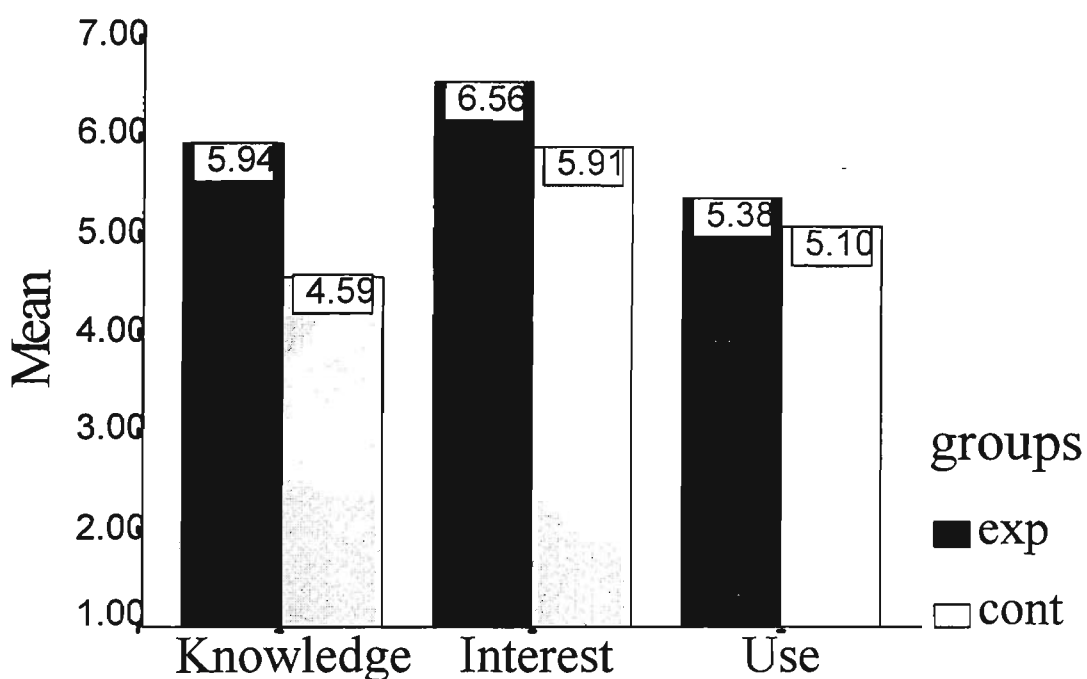


Figure 4.2. Means of knowledge, interest, and use immediately after the PST program for the experimental group and the control group.

Means and standard deviations of individual questionnaire items for knowledge in the experimental and the control groups immediately after the PST program, are presented in Table 4.4, along with the results of t-tests conducted to determine any differences for specific items. The p values associated with those t-tests are also presented in the table. To control for

multiple comparisons, a Bonferroni correction was applied to the comparisons for each questionnaire. Thus, the conventional α level of .05 was divided by 11 to give an α level of .0045, which was used to test for significance on each questionnaire.

Table 4.4
Means and Standard Deviations of Subjective Assessment of Knowledge of Sport Psychology by Thai Coaches in The Experimental Group and the Control Group Immediately After the PST Program

Topic	<u>Expt grp</u>		<u>Cont grp</u>		<u>t-test</u>	
	M	SD	M	SD	t	p <
Motivation	6.05	0.87	4.52	1.33	4.41	.001
Goal setting	6.24	0.77	4.71	1.23	4.81	.001
Stress management	5.52	0.81	4.05	1.83	3.38	.002
Anxiety/Arousal	6.24	0.70	4.86	1.56	3.70	.001
Relaxation	6.24	0.70	4.95	1.12	4.47	.001
Imagery	5.57	1.17	4.00	1.64	3.58	.001
Confidence	6.33	0.73	5.19	1.25	3.62	.001
Self-talk	5.67	1.02	4.33	1.71	3.07	.004
Self-thought	5.81	0.93	4.71	1.65	2.65	.012
Attention/Concentration	6.10	0.70	5.00	1.30	3.39	.002
Energizing/Re-energizing	5.52	1.37	4.14	1.32	3.34	.002

One-way ANOVA was used to compare the means for the experimental and the control groups overall. It showed a significant difference, $F(1, 40) = 23.63$, $p < .001$. In addition, the t-tests calculated to compare the experimental and the control group knowledge scores on each psychological skill showed that the experimental and the control groups were significantly

different on every psychological skill except self-thought. As predicted, the experimental group reported having significantly more knowledge of each skill than did the control group.

Means and standard deviations of individual questionnaire items for interest in the experimental and the control groups immediately after the PST program are presented in Table 4.5, along with t-test results and p values.

Table 4.5
Means and Standard Deviations of Subjective Assessment of Interest of Sport Psychology by Thai Coaches in the Experimental Group and the Control Group Immediately After the PST Program

Topic	<u>Expt grp</u>		<u>Cont grp</u>		<u>t-test</u>	
	M	SD	M	SD	t	p <
Motivation	6.52	0.51	6.19	0.93	1.44	.160
Goal setting	6.76	0.44	5.95	1.16	2.99	.006
Stress management	6.38	0.67	5.67	1.24	2.33	.027
Anxiety/Arousal	6.62	0.59	6.05	0.92	2.40	.021
Relaxation	6.52	0.60	5.71	0.90	3.42	.001
Imagery	6.67	0.58	5.48	1.33	3.77	.001
Confidence	6.67	0.48	6.52	0.68	0.97	.437
Self-talk	6.33	0.58	5.48	1.03	3.33	.002
Self-thought	6.67	0.58	5.43	0.93	5.20	.001
Attention/Concentration	6.48	0.60	6.33	0.91	0.60	.553
Energizing/Re-energizing	6.52	0.60	6.19	1.12	1.20	.238

One-way ANOVA, used to compare the means for the experimental and the control groups showed a significant difference, $F(1, 40) = 12.47$,

$p < .001$. The t-tests comparing the experimental and the control groups on individual items were significant for four of the 11 psychological skills, having applied the Bonferroni correction. These were relaxation, imagery, self-talk, and self-thought. For all of these items the experimental group scored significantly higher than the control group. It should be noted that, with the exception of motivation ($p > .15$), which ranked third highest at the preprogram stage, these were the skills that scored highest for the control group at the preprogram stage, with confidence, attention, and energizing also above 6.0 even then. In fact, confidence, at 6.62 on the preprogram test, had come down by the time of immediate postprogram testing. Such high values as shown there and here, where those four items all had means over 6.0, for the control group, limit the potential to produce significant differences, even when the values for the experimental group are higher, reaching more than 6.5 on a scale where the maximum score was only 7.0.

Means and standard deviations of individual questionnaire items for use in the experimental and the control groups immediately after the PST program are presented in Table 4.6, accompanied by t-test results and p values. One-way ANOVA, used to compare the means for the experimental and the control groups, showed no significant difference in use, $F(1, 40) = .72$, $p > .4$.

Table 4.6

Means and Standard Deviations of Subjective Assessment of Use of Sport Psychology by Thai Coaches in the Experimental Group and the Control Group Immediately After the PST Program

Topic	<u>Expt grp</u>		<u>Cont grp</u>		<u>t-test</u>	
	M	SD	M	SD	t	p <
Motivation	5.90	1.00	5.90	1.09	0.00	1.00
Goal setting	5.48	0.75	5.10	1.22	1.22	.230
Stress management	5.14	1.01	4.52	1.78	1.39	.175
Anxiety/Arousal	5.48	1.17	5.24	1.38	0.61	.549
Relaxation	5.43	1.17	4.71	1.52	1.71	.095
Imagery	4.90	1.30	4.62	1.63	0.63	.533
Confidence	5.76	1.26	5.90	1.00	0.41	.686
Self-talk	4.86	1.28	4.71	1.77	0.30	.765
Self-thought	5.38	1.28	4.86	1.68	1.13	.263
Attention/Concentration	5.62	1.02	5.48	1.54	0.35	.725
Energizing/Re-energizing	5.24	1.55	5.00	1.61	0.49	.628

Consistent with the ANOVA across all items, t-tests for the individual items revealed no significant difference between the experimental and the control groups for any item.

Questionnaire Results for Six Month Delay Differences

The overall means for knowledge, interest, and use of the experimental group (n=21) and the control group (n=21), when they were re-tested after the six month delay are illustrated in Figure 4.3.

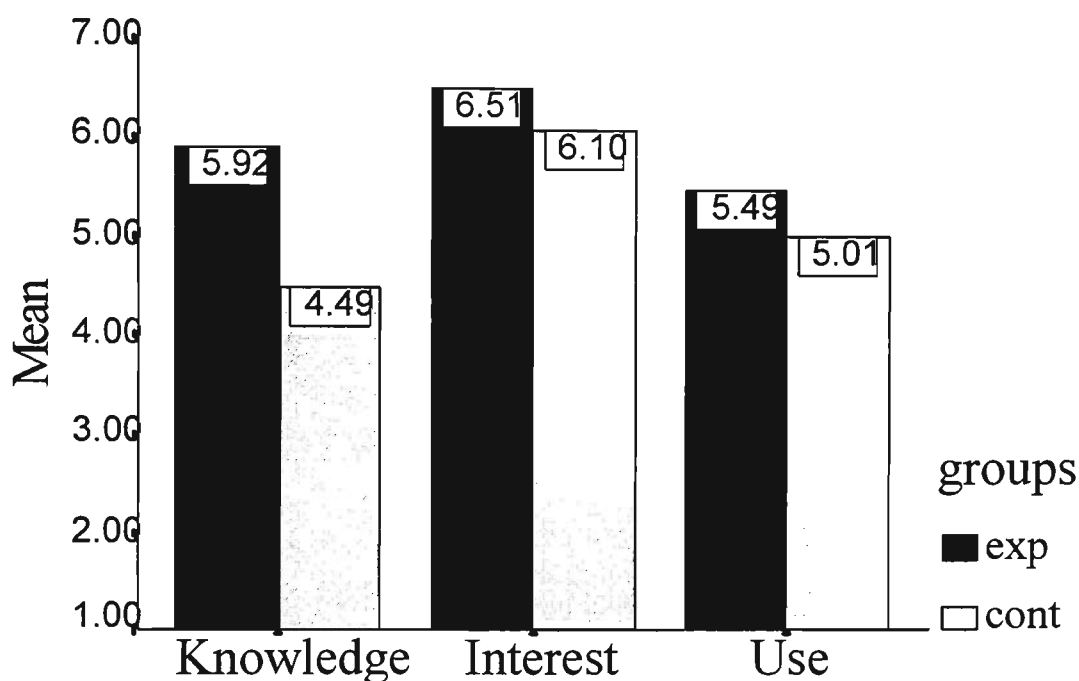


Figure 4.3. Means of knowledge, interest, and use for the experimental group and the control group at the six month delayed posttest.

Means and standard deviations of individual questionnaire items for knowledge in the experimental and the control groups, at the six month delayed stage are presented in Table 4.7, along with t-test values and p values for individual items.

One-way Analysis of Variance (ANOVA), used to compare the means for the experimental and the control groups showed a significant difference for knowledge, $F(1, 40) = 35.40$, $p < .001$. As at the immediate postprogram stage, the Bonferroni correction was applied to the comparisons for each questionnaire, so a significance level of $\alpha = .0045$ was employed. The

t-tests showed that the experimental group reported significantly more knowledge than the control group for every psychological skill, except confidence.

Table 4.7

Means and Standard Deviations of Subjective Assessment of Knowledge of Sport Psychology by Thai Coaches in the Experimental Group and the Control Group at Six Month Delayed Posttest

Topic	<u>Expt grp</u>		<u>Cont grp</u>		<u>t-test</u>	
	M	SD	M	SD	t	p <
Motivation	6.05	0.87	5.05	1.20	3.09	.004
Goal setting	6.00	0.63	4.71	1.15	4.50	.001
Stress management	5.90	0.89	3.90	1.14	6.35	.001
Anxiety/Arousal	5.95	0.67	4.38	1.28	4.97	.001
Relaxation	6.00	0.76	4.90	1.04	3.86	.001
Imagery	5.76	0.94	3.76	1.48	5.22	.001
Confidence	6.14	0.73	5.48	0.98	2.50	.017
Self-talk	5.95	0.92	4.29	1.45	4.44	.001
Self-thought	5.95	0.67	4.33	1.20	5.41	.001
Attention/Concentration	5.67	0.86	4.57	1.21	3.39	.002
Energizing/Re-energizing	5.76	0.94	4.00	1.10	5.58	.001

Means and standard deviations of individual questionnaire items for interest in the experimental and the control groups, at the six month delayed stage are presented in Table 4.8, accompanied by t-test values and p values.

One-way ANOVA, used to compare the means for the experimental and the control groups showed a significant difference for interest overall,

$F(1, 40) = 4.70, p < .04$. Interestingly, only the t-test values for self-talk, and self-thought remained significant. In all cases, means for the experimental group were still higher than the equivalent for the control group, except for energizing where the means for the two groups were identical.

Table 4.8

Means and Standard Deviations of Subjective Assessment of Interest in Sport Psychology by Thai Coaches in the Experimental Group and the Control Group at Six Month Delayed Posttest

Topic	<u>Expt grp</u>		<u>Cont grp</u>		<u>t-test</u>	
	M	SD	M	SD	t	p <
Motivation	6.57	0.60	5.95	0.81	2.83	.007
Goal setting	6.62	0.74	6.43	0.75	0.83	.411
Stress management	6.38	0.87	6.19	0.68	0.79	.432
Anxiety/Arousal	6.48	0.81	5.95	0.87	2.02	.050
Relaxation	6.57	0.60	6.38	0.67	0.97	.336
Imagery	6.62	0.59	6.05	0.97	2.30	.027
Confidence	6.62	0.67	6.52	0.60	0.49	.630
Self-talk	6.48	0.75	5.48	0.93	3.84	.001
Self-thought	6.43	0.68	5.62	1.02	3.02	.004
Attention/Concentration	6.48	0.75	6.14	0.79	1.40	.169
Energizing/Re-energizing	6.33	0.73	6.33	0.66	0.00	1.00

Comparison of means here with those in Table 4.5 indicates that the loss of significance for those items where a previous significant difference no longer emerged is largely due to a substantial increase in the means for the control group, at the six month delayed stage. While fluctuation did occur for other items, such large increases were not typical for the control

group. In fact the motivation item, showed a significant difference in favour of the experimental group, that was not observed in the immediate post program tests, and this appeared to be largely attributable to a reduction at the six month delayed stage, for the control group.

Means and standard deviations of individual questionnaire items for use in the experimental and the control groups, at the six month delayed stage are presented in Table 4.9, along with t-test results and p values for each item.

Table 4.9

Means and Standard Deviations of Subjective Assessment of Use of Sport Psychology by Thai Coaches in the Experimental Group and the Control Group at Six Month Delayed Posttest

Topic	<u>Expt grp</u>		<u>Cont grp</u>		<u>t-test</u>	
	M	SD	M	SD	t	p <
Motivation	5.52	0.81	6.14	0.73	2.60	.013
Goal setting	5.71	0.64	5.43	1.33	0.89	.380
Stress management	5.14	0.73	4.48	1.47	1.86	.070
Anxiety/Arousal	5.67	0.66	4.38	1.28	4.08	.001
Relaxation	6.24	0.63	4.52	1.40	5.12	.001
Imagery	5.81	0.75	4.38	1.16	4.74	.001
Confidence	5.67	0.91	6.00	0.84	1.23	.225
Self-talk	5.24	0.83	4.71	1.52	1.38	.174
Self-thought	4.95	0.87	4.76	1.45	0.52	.607
Attention/Concentration	5.38	0.81	5.67	1.46	0.79	.438
Energizing/Re-energizing	5.10	0.83	4.67	1.32	1.26	.214

Comparison of the experimental and the control group means for use six months after the experimental group received the PST program, indicated that, for eight of the 11 areas of PST, the experimental group showed higher self-reported use than the control group. For three areas, anxiety, relaxation, and imagery, these differences were well in excess of one scale point, while, for stress management and self-talk, they exceeded half a scale point. Three topics, motivation, confidence, and attention showed control group means that were higher than the experimental group means for these items. Comparison of these means with the corresponding means in Table 4.6, which reflect self-reported use immediately after the PST program, indicated that, while the control group values increased marginally, the means for each of those three topics in the experimental group declined notably. One-way ANOVA comparing the means for all items in the control group with those for the experimental group showed a trend toward significance, $F(1, 40) = 3.49, p = .07$. The results of t-tests, comparing the experimental and the control group means for each item separately, showed that the means for the areas of anxiety, relaxation, and imagery in the experimental group were significantly larger than the corresponding means in the control group, while the difference between the experimental group and the control group means for motivation approached significance in that direction.

Preprogram Interview Results

The interview results at the preprogram stage were the results from the study of initial knowledge, interest, and use, where all coaches responded to the first three interview questions, before they were divided into the experimental and the control group. Details were presented in chapter 3, where it was concluded that most of the coaches reported that they used sport science in their coaching, such as physiology of exercise, sports medicine, and nutrition, but there were very few coaches who mentioned sport psychology techniques. The coaches showed a high degree of interest in welcoming and learning about sport psychology from Western countries. There were no noteworthy differences between the experimental and the control group coaches at this stage.

Immediate Postprogram Interview Results

At post-program, the same interview questions were asked as in the previous study, except that three additional direct questions were added to the end of the interview schedule for the experimental group. The control group was presented with only the same three main interview questions as in the previous study. The responses of the coaches in both the experimental and the control groups for the first three interview questions, remained similar to what the coaches had reported in study 1, almost a year earlier. This would appear to be because the experimental group coaches responded

to the interview questions immediately after the seminar. The first three questions focused on use of sport science and these coaches had no opportunity to change their use of sport psychology, based on the knowledge they had acquired from the seminar, so their responses to the first three interview questions were not different to those in the previous study.

The responses of the experimental group for the three additional interview questions reflected the influence of the PST program. These are now considered in turn.

What is your feeling about this applied sport psychology program? All coaches responded with positive feelings, typically giving comments, which reflected their perception that they had more understanding about sport psychology knowledge. Typical responses were:

It is good. I learnt a lot more knowledge and have an opportunity to exchange ideas with other coaches.

It is better than I thought. I see and learn a lot of new knowledge.

It is a good program. Coaches have an opportunity to learn new techniques. If we do not come to the seminar, we will not have the opportunity to learn the knowledge like this.

I think it is very useful. To me I think it is definitely useful, not only for sport, but also for using in daily life.

I like it. I think I have more knowledge and experience although something are quite difficult to understand, but mostly are good and useful.

It is a good program. I think it is useful to coaches and athletes. I want to have the seminar separately for each sport, I think it will be more useful.

Very good, I give 90 from 100 points. The reason that I do not give 100 points is because I want to have more time for the seminar, so that we can have more deep discussion. I am glad to take the knowledge and use it.

What would you think if this applied sport psychology program was presented to all coaches in Thailand? All coaches responded to this interview question in the same direction that the program should be presented to all coaches. Common responses and comments were:

We should do very much. I believe that other sport associations will also support.

I very much agree. If coaches know more, the athletes' standard will be higher developed.

We should do very much. We will have more knowledge. And we should do outside Bangkok as well, and do it regularly.

It will be good to Thai sport if we can do it as soon as possible. We know about this very little.

I agree with this one hundred percent because there is only good result, there is not any bad at all. But doing this must cost a lot of money.

It is very good, if this can be done. Should be very well supported.

And I would like athletes to come to the seminar too.

Do you have any plans to utilize psychological skills training in your coaching? Most coaches showed interest in developing sport psychology with athletes in their coaching, but, also there were a number of conditions about using the techniques, which were concerned with some aspects of Thai culture.

I will see if it is suitable I will let my athletes try to practice, but I am not sure how much this program will be accepted by the athletes.

I will certainly use it especially the techniques for reducing anxiety and relaxation. I think they will help my athletes a lot.

I will bring these techniques and share them with my athletes as much as I can. But I do not know how much they will be accepted. Actually, if you could also organize the seminar like this for athletes when you finish your study, I think these techniques will be very much accepted. However, I will try first.

I will see how it is suitable. I have to discuss with my staff first, and see my athletes' readiness whether they are ready to accept or not. It will be very much easier if you could come to help.

I can not tell you at the moment. I have to see readiness of the team and discuss with my superior first. However, I think I will use it because I found it very useful.

The athletes I have been training at the moment are very high advanced skill players. I am afraid if I add PST, my athletes might feel that they are at the beginning again. I have to be careful about where and how to add PST in order to not make any bad result to my athletes. I do not feel it is difficult if they are new athletes. I will add PST for them.

The first technique I intend to use is goal setting, the others are imagery and other techniques which will be necessary to my athletes. I think I will use it. I am not sure when I will start. I have to see the readiness first to ensure that it will not affect my athletes in competition.

I will try the techniques myself, and in the meantime I will let my athletes try the techniques as well.

I have to discuss with my superior and the athletes' parents first. But personally, I think I will certainly try to let my athletes practice this.

Six Month Delay Interview Results

Six months after the PST program, the three main interview questions from the previous study were again presented to coaches in the control group, and the results were, not surprisingly, that most coaches responded with no differences from their responses on the first two occasions. The coaches in the experimental group were asked the same first three main interview questions as the control group, plus two additional questions, which were appropriate to their application of sport psychology techniques in their coaching. The responses of the experimental group for the first three questions slightly changed from the previous occasions, as they reported more use of sport psychology in their coaching. Typical responses reported by the experimental group coaches were:

What sport science do you use in your coaching?

I train my athletes the same as usual. I add some sport psychology practice, but not much because of lack of opportunity.

I emphasize techniques and skills training. I let them do fitness exercise regularly. I also emphasize on food, milk. And I let them practice sport psychology as well.

During these days, I have temporarily stopped coaching. I have other important work to do.

What are your feelings about using other sport sciences from Western countries?

Their sport science is very good. It might be quite difficult to use because we have to spend lots of time to prepare and work on it with the athletes. But, if we can do it will be very effective.

Their sport science is good. We have to learn from them until we can investigate our own technology.

What is the daily practice routine you give your athletes?

I let my athletes try to practice relaxation and imagery before and after training and practice some more at home. Some of my athletes are interested in the practice but some of them pay very little attention.

I think it might be effective in the long run or it might be better with youth athletes.

I let my athletes do meditation 15 minutes per day and practice relaxation and imagery during the training period.

I practice the techniques myself and then try with my athletes. They pay little attention, maybe it is too new for them and is not a challenge like a tennis game. If you could give a seminar for athletes the same as you gave to coaches I believe that they will understand and have faith to practice much more than it was.

Have you used sport psychology in your coaching for the last six months? Do you have any suggestions or any problems in using sport psychology techniques? (Note: questions 4 and 5 combined) The responses of the coaches to the two additional questions that focused on current use of sport psychology produced similar responses. These are now exemplified.

I let my athletes practice centering breathing for concentration which is similar to our meditation. I let them practice imagery, for reviewing the skills they have learned. I have just started. I am not sure it will work or not but I will keep on going.

I have tried some techniques with my athletes, such as relaxation and imagery, including meditation, which they practice regularly. I let them keep practicing when they have the chance or practice at home. I notice that there are some changes, in a good way, in my athletes.

I let them try practicing relaxation and imagery. They laugh a lot at first and were not much interested to practice. But later on they got better. The techniques might have affected them. I still do not find an opportunity to use other techniques.

I try using it with myself and my athletes. To me, I think it is very useful, but for my athletes it is hard to tell. Some pay lots of attention, some pay little attention. I think, I have to invite you to help me to give them some teaching.

I mostly tried with myself first, I found it was good and useful. I will find an opportunity to train this to my athletes. The last passing few months I was very busy with my routine work, I then let them practice the program as usual.

In that period of time, I have had someone looked after my athletes for me, because I have to allot my time for my business and I have to prepare myself for a competition. However, I have already tried some techniques, it was good, especially relaxation.

I did not coach for the last six months because I have other work to do. I use PST with myself. I feel I have more confidence, more concentration, and good mood control when I do my job, as a Thai boxing referee.

The results of the interviews showed some interesting insights into the reactions of the 21 Thai coaches to the PST program, particularly in terms of their application of the new knowledge gained. These are summarised and discussed in the next section.

Discussion and Conclusions

The following discussion considers the formal conclusions from this study, considering the questionnaire and interview responses for knowledge, interest, and use by Thai elite coaches between the experimental group and the control group. The section then discusses the integration of the

questionnaire and interview results and goes on to relate the present findings to previous research. Methodological issues are then considered. The findings from this chapter are then used to suggest recommendations for future research and practice. Finally, there are some remarks on the benefit of presenting the PST program to coaches in Thailand.

Conclusions for the Self-Report Questionnaires

There were no differences in self-perceived knowledge, interest, or use of PST between coaches in the experimental group and the control group, at the preprogram stage, when coaches had not yet experienced a PST program.

In the immediate postprogram stage, after the experimental group had been presented with the PST program, there were clear differences for all items in knowledge, small, but noteworthy, differences in interest, but no significant differences in use. The experimental group self-ratings were significantly higher on knowledge and interest.

After six months delay, the experimental group's significantly higher ratings in the results for knowledge, and interest still remained, although less so for interest. For use, some new differences occurred in the areas of anxiety and arousal, relaxation, and imagery, indicating that the experimental group considered that they were utilizing these psychological skills more with their athletes, than were their control group counterparts.

Conclusions for Interviews

Most of the coaches in the experimental group and the control group, at the preprogram stage, reported that they used sport science in their coaching, such as physiology of exercise, sports medicine, and nutrition, but there were very few coaches who mentioned sport psychology techniques. The coaches showed a high degree of interest in welcoming and learning about sport psychology from Western countries. There were no noteworthy differences between the experimental and the control group coaches at this stage.

In the immediate postprogram stage, after the experimental group had been presented with the PST program, the responses of the coaches in both the experimental and the control groups for the first three interview questions, remained similar to what the coaches had reported in study 1. The responses of the experimental group for the three additional interview questions reflected the influence of the PST program. Coaches responded with positive feelings, typically giving comments, which reflected their perception that they had more understanding about sport psychology knowledge. All coaches also recommended that the program should be presented to all coaches.

Six months after the PST program, the three main interview questions from the previous study were again presented to coaches in the control

group, and the results were that most coaches responded with no differences from their responses on the first two occasions. The coaches in the experimental group were asked the same first three main interview questions as the control group, plus two additional questions, which were appropriate to their application of sport psychology techniques in their coaching. The responses of the experimental group for the first three questions slightly changed from the previous occasions, as they reported more use of sport psychology in their coaching. The results of the two additional interview questions showed some interesting insights into the reactions of the coaches to the PST program, particularly in terms of their application of the new knowledge gained.

Integration of Questionnaire and Interview Results

At the preprogram stage, the results from the questionnaires, showing no significant difference in knowledge, interest, and use, were supported by the interview responses, in which there were similar responses of the coaches in both groups.

At the immediate postprogram stage, coaches in the experimental group reported in the interviews, after participating in the PST program, that they had gained much more knowledge in sport psychology and were interested to learn more about the area. They still acknowledged limited use of sport psychology in their coaching. Although the original scores from the

preprogram stage left little room to score higher, the questionnaire results still clearly showed that, the experimental group coaches significantly increased their knowledge and interest compared to the control group, but also that there was no difference in use. Thus, the interview and questionnaire results presented a consistent picture at this stage.

Results at the six month delayed stage, showed that the overall responses were in the same direction. Thus, coaches in the experimental group remained at higher levels of knowledge and interest than coaches in the control group, as reported immediately after the PST program. Although there was no significant difference for overall use in the questionnaire responses, this contrasted with the interview results, in which coaches reported using some sport psychology techniques that they had not employed before the PST program. Considering the differences between individual items, coaches in the experimental group self-rated significantly higher on differences on anxiety and arousal, relaxation, and imagery items. This was similar to their responses in the interviews, where the experimental group reported greater use than the control group. Interestingly, coaches in the control group scored higher on motivation, while the scores on motivation, and confidence in the experimental group declined from the previous occasions.

There are some possible reasons why the use score on some items of the control group was as high as or higher than the experimental group at the delayed stage. According to Sontimuang (1993), Thai elite coaches with their athletes were preparing to participate in the 17th South East Asia (SEA) Games, in Singapore, in 1993. This preparation occurred at about the time of the testing for the six month delayed stage. In that SEA Games preparation, they were given seminars in sport science, which included sport psychology. Some coaches in the control group might have been involved with those preparations and gained some sport psychology knowledge and used it with their athletes. Also, some coaches in the control group might have attended the seminar held by the Sport Psychology Society of Thailand in April 1993, which included a Keynote presentation on “Psychological Skills Training for Enhancing Sport Performance”.

One reason that the scores in the areas of motivation, confidence, and attention declined in the experimental group, might be that, after the program, coaches were able to reflect on their current practices more carefully on the basis of their new knowledge, and realized that what they used with their athletes in the past and had classified as motivation, confidence, or attention, was really not sport psychology techniques. Then, when they responded again at the six month delayed stage, they rated their use lower, because, based on their new knowledge, they were more aware

of what that area really referred to. It is even possible that actual use went up, because of the information learned in the PST program but, the rating of amount of use went down, because the scale of the overestimate on the previous occasions was large. One factor that might lend credence to such an explanation is that the effect was observed for the three areas where the terms are more commonly in everyday use and often the lay use is not consistent with the psychological interpretation (e.g., Gould, Murphy, Tammen, & May, 1989).

Relationship to Theory and Research

The main emphasis of the discussion in this section is on the effects of the PST program on knowledge, interest, and use of the experimental group relative to the control group. This is because the pre-program status of knowledge, interest, and use, to which post-program values are compared, refers to the material discussed in detail in chapter 3. It is not necessary to repeat that discussion, but it should be remembered that the levels of questionnaire response for knowledge, interest, and use were all high, making increases difficult to attain at the post-program stage. Nonetheless, the questionnaire results indicated that knowledge was self-reported to have increased at the administration immediately after the PST program. Despite the very high initial level of responses on the interest items, they too increased after the PST program. Furthermore, these increases were

sustained after six months, whereas the level of responses for the use items, which had not increased immediately after the PST program, did increase after six months. It is difficult to compare these results with any other research. The only study that considerable searching located that is remotely like the present one was conducted by Hall and Rodgers (1989).

Unfortunately, they did not perform an evaluation immediately after the workshop they presented to Canadian figure skating coaches, making it impossible to know whether attitudes or use had changed at that time, compared with their pre-workshop levels. The workshop that Hall and Rodgers presented to the coaches was of two-and-a-half hours duration, not three days, the length of the PST program in the present study. Also, their follow-up occurred after 8 weeks, as opposed to six months in the present study. More surprising perhaps, Hall and Rodgers used a different questionnaire to assess coaches reactions after the 8 weeks, the Mental Training Evaluation Questionnaire (MTEQ) to the one they used prior to the workshop, the Use of Mental Training Questionnaire (UMTQ), making direct comparison between pre- and post-workshop ratings inappropriate. In addition, because they did not measure the coaches' reactions immediately after the workshop, it was not possible for Hall and Rodgers to state conclusively whether any changes had occurred over the 8 weeks following the workshop. This would have been particularly interesting, as they do

record that some of the admittedly small number of skaters who commented on their coaches' behaviour after the workshop, suggested that there were changes immediately, but that they had dissipated well before the 8 week follow-up was conducted. Hall and Rodgers did include some open-ended items in their questionnaires, but they did not conduct any interviews, let alone repeat them pre-program, immediately post-program, and at the delayed follow-up, as was done in the present study. Although there were, thus, many factors that differentiated the two studies, some aspects of Hall and Rodgers' work do bear on the present study. Hall and Rodgers found that responses to their initial questionnaire, the UMTQ, which addressed use and effectiveness, were consistently high, mostly between 5.5 and 6.5 on a 7-point Likert scale, making them very similar to the initial responses of the participants in the present study. Responses to the questionnaire administered 8 weeks after the workshop were also high, but in the case of the Hall and Rodgers study, it was not possible to make direct comparisons between the two sets of ratings because the delayed follow-up was assessed on a different questionnaire, the MTEQ, to initial use and effectiveness. Nonetheless, there did not appear to be an increase in the level of the follow-up ratings in the Hall and Rodgers study, as there was in the present study, immediately after the PST program for knowledge and interest and at the six month follow-up for use of PST. A further questionnaire, the

Coaches Workshop Assessment Questionnaire (CWAQ) revealed that the coaches in the study of Hall and Rodgers evaluated the workshop positively. The most noteworthy finding from this instrument was that the coaches particularly valued the on-ice time, that is, the time when they could practice the psychological techniques with skaters and see other expert coaches using the techniques, all under the guidance of the sport psychologist. The coaches requested more time be spent on this aspect of the workshop. This is consistent with the comments of coaches in the present study that they needed more time working on the application of the ideas presented in the PST program, with the sport psychologist alongside to provide guidance and feedback. Hall and Rodgers also acquired data from another source, skaters who worked with the coaches. Unfortunately only 24 skaters responded to the Skater Perception of Coach Use of Mental Training questionnaire and these skaters related to the behaviour of just eight coaches, limiting the generalisability of this data. Nevertheless, it is interesting that, although a small number of skaters reported that their coach changed behaviour in positive ways immediately after the workshop, but regressed to previous behaviour before the 8 week follow-up, most of the skaters who did respond reported that the change in coach behaviour was retained by the time of the 8 week follow-up. This is consistent with the quantitative and qualitative results of the present study, which indicated that

the increases in knowledge and interest that were observed immediately after the PST program were still evident six months later, in the follow-up. One other interesting point is that, using a mailed questionnaire approach, Hall and Rodgers experienced a reduction from 44 to 26 participants during their 8 week study. The present study involved Thai national level coaches for almost 2 years, with the 42 coaches who started the study all still involved at its conclusion. Despite all of this, undoubtedly the most notable distinction between the present study and the research of Hall and Rodgers or any other work that it proved possible to find, is that the present study is the only experimental research on coach education programs in sport psychology. Hall and Rodgers really conducted two studies with a subset of the participants from their first study in their second inquiry. The first study was a questionnaire study of initial levels of self-reported use and effectiveness of sport psychology, whereas the second was a study that evaluated the workshop. In the first study, like the one reported in chapter 3 here, all the participants gave their initial views of sport psychology. In the second study, all the participants attended the workshop and were assessed on its usefulness. Following the examination of the initial knowledge, interest, and use of sport psychology techniques by all the 42 Thai coaches in the study reported in chapter 3 of this thesis, the coaches were divided at random, within each sport, into a control group and an experimental group.

The experimental group participated in the four day workshop, whereas the control group participants were simply interviewed and then given the questionnaires to complete, at a time corresponding to the end of the PST program for the experimental group . A major strength of the results of the present study is that they demonstrated that there was no change for the control group, even a small decline on some measures, whereas the experimental group showed an immediate increase in self-reported knowledge and interest and an increase in use at the six month follow-up. Although there is certainly a place for evaluation research, especially with respect to educational processes, more controlled studies are necessary, especially those that manipulate central aspects of the educational experience, in order to identify those aspects of coach education sport psychology programs that are most effective in developing coaches' behaviour with respect to the implementation of sport psychology with their athletes.

Methodological Considerations

The questionnaires again showed clear-cut results, for the most part. Although the responses were generally very high in the first study, they increased further for knowledge and interest, where they were expected to, on the second occasion, the immediate postprogram stage. They also rose on the third occasion for use, although they were high to start with, which

reduces their sensitivity, that is, the opportunity for upward movement. It is important to note that there was no significant change in the experimental group's questionnaire responses on use from the pre-program questionnaire measurement to the immediate post-program ratings, but there was a very clear change for several items at the six month delayed stage, that could be explained on the basis of either general acquiescence or a more specific desire to support the PST program, based on the development of rapport. The selective changes in use reported at the six month delayed stage for the experimental group, but not shown for the control group provides further support for the view that the coaches responded to the questionnaires honestly, following their rather inflated responses on the first occasion of testing. A note of caution should be sounded here, with respect to all of the questionnaire data. The information refers to self-reported knowledge and use, rather than any objective assessment of these. Knowledge could be assessed by an objective test, although this would be likely to be perceived as threatening by volunteer elite coaches, or by observation of the coaches presenting the material. Similarly use can perhaps best be assessed by observation of the coaches working with their athletes. Aside from the problem that coach behaviour might change, if coaches know that they are being observed, the observational approach was logistically out of the question, as the 42 coaches in this study usually worked in locations all

around Thailand. They were tested away from their athletes at convenient times, such as when they attended centrally located meetings. Moran (1993) also noted that his work and the other rating scale questionnaires used in the research on coach knowledge, interest, and use of sport psychology only assessed the coaches' opinions of their knowledge and use or related variables, such as importance and effectiveness. Although self-report questionnaires were used in the present research, this was within the context of a controlled study, involving an experimental group and a control group. It must be pointed out that the control group did nothing except fill in the questionnaires on three occasions, each time after an interview. Thus, there was no control for the effects of attention on the Experimental participants. It could be that the Experimental participants gave more positive responses on the rating scales and even in the interviews, because they thought that something must happen as a result of the attention from a specialist in sport psychology.

The interviews were very useful in many aspects. They reflected several items of information that the questionnaires could not or should not ask coaches directly, due to cultural considerations and in order to keep a good relationship for future cooperation between the coaches and sport psychology educators. These were resolved by using the interviews, in which the coaches were asked, indirectly, questions that linked or reflected

research issues. For example, when most coaches responded that they learnt a lot from the PST program in the knowledge questionnaire, it might have been possible that the coaches did not know much about sport psychology, as they also scored quite high in the preprogram stage when their knowledge was clearly very limited, but their open-ended interview responses were more convincing, adding detail of the ways in which they felt they had developed through the PST program. Again, it should be reiterated that the interviews occurred before the questionnaires were completed on each occasion. This meant that for the initial interview, the coaches had no idea what the interview was about. On the second occasion, although the interview was conducted first, it is possible that participants remembered some of the items, or at least the psychological skills in the items, that they had rated in the questionnaires six months previously. It seems more parsimonious and probable to conclude that the coaches had learned the terms in the PST program during the program that immediately preceded the second interview.

The additional interview questions on the second and third occasions, which were added to examine those situations, provided a lot of information, especially showing coaches' awareness of the importance and the needs of sport psychology to coaching and sports development in Thailand. Clearly, it was not possible to compare the responses of the

experimental group on these questions, with the control group, who had not experienced any intervention on which they could comment. Thus, it is as an elaboration on the differences shown between the experimental and control groups in questionnaire responses and their replies to the first three interview items, that the answers of the experimental group coaches to those additional interview items must be considered. In providing such illumination and extension of their earlier comments, those interview questions were of great value. Although there were problems with the rating scale approach to the questionnaires that was used in Study 1, the results of the present study seem to justify using the same items in this study as were used in Study 1. This allowed direct comparison of the ratings at the immediate post-program stage and the ratings provided by the coaches in the initial study, reported in the previous chapter. It was noted that, despite being high on the first occasion, the ratings for knowledge and interest rose on the second occasion. This did not appear to be the case in the study by Hall and Rodgers, where the ratings did not appear to rise between administration of the UMTQ and the MTEQ, although, again, it is acknowledged that these are different questionnaires.

Once again, it was found that the combination of closed questionnaire responses to specific PST issues and open interview answers to broader questions provided clearer reflection of the thoughts, feelings, and

behaviour of the coaches than could have been gleaned from either alone.

As it was considered to be more effective to use both the questionnaires and the interviews in this study, it was decided to use both the questionnaires and the interviews in the next study, the repeated measures analysis, reported in chapter 5.

Implications for Future Research

This study demonstrated that the 21 Thai elite coaches, who experienced the PST program, did increase their knowledge, interest, and, after a time to be able to go back and develop their programs, their use of sport psychology techniques with their athletes. This indicates that a coach education program on PST can enhance knowledge and lead to increased use of those sport psychology methods in the coaches' programs with athletes. No other experimental study has been found that has shown this to be the case. Hall and Rodgers (1989) conducted an evaluation study of a short workshop, in which questionnaires about the effectiveness of the coaches use of sport psychology and the value of the workshop, that were administered 8 weeks after the workshop, suggested that coaches felt more competent to deliver sport psychology to athletes as a result of attending the workshop. In addition, a small sample of the skaters they coached reported improvements in a number of relevant coach behaviours. There was no control in this evaluation study and the absence of measures of effectiveness

immediately after the workshop make it difficult to determine what effects the workshop had directly and what developed over the 8 weeks that followed it. The present study demonstrated the value of a longer PST program with a control group for comparison to the coaches that participated in the PST program and with measures immediately after the program, as well as six months later.

This study involved a relatively small group of elite coaches from four sports, so it is important to replicate the study with a wide range of other elite coaches and also to examine the value of similar programs with junior and sub-elite coaches. There is a need for a great deal more of this type of research to be done, not only in Thailand or even in Asian countries in general, but also in the West. As was shown in the literature review, there is a dearth of such research in Western countries, where sport psychology is typically more strongly represented in coach education programs. Of all the research reviewed, only that by Hall and Rodgers presented a psychological skills workshop or program and then evaluated it. There needs to be more research about which are the most important aspects, that is, which are the aspects of PST or other sport psychology topics that coaches go back to use with their athletes. In particular, it is important for research to determine whether certain aspects of PST, and sport psychology more broadly, are

harder for coaches to understand, to accept as part of their programs, or to put into operation once having learned about them.

The selective application of aspects shown by the experimental group coaches, who primarily reported using goal setting, imagery, and relaxation at the six month follow-up, certainly suggested that some factors influenced the conversion of knowledge gained during the PST program into practice by the coaches with their athletes. The topics selected tended to reflect those areas reported as the ones most frequently used, both by athletes and by coaches, in previous work in the West (e.g., Gould, Tammen, Murphy, & May, 1989; Jowdy, Murphy, & Durtschi, 1989). This suggests that the coaches selected the topics that they felt were most important. At the same time, the topics not addressed by the time of the six month delayed follow-up, seem to be those that were less accessible, either because they were more abstract and harder to understand, or because their application might have required more complex procedures. At this stage, these observations are no more than speculative, representing an interesting and important area for future study.

A number of attitudinal studies have identified the main barriers that coaches perceive to their implementation of sport psychology. Widely cited in this context is the perception of coaches that sport psychology theory and research is not made accessible to them, that is, it is not converted into

practical methods that are directly applicable by coaches with their athletes (e.g., Blinde & Tierney, 1990; Bloom, Salmela, & Schinke, 1995; Hall & Rodgers, 1989; Moran, 1993; Silva, 1984). The present study certainly reiterates the need for research that examines the most effective ways of informing coaches about psychological techniques, as well as examination of the conversion of sport psychology theory and research into methods that are directly applicable by coaches and immediately meaningful to athletes.

Several suggestions emerged from the present study in combination with the previous literature. The Thai coaches of elite athletes studied here indicated in the final interviews that although the PST program was very useful, they believed that it would be particularly effective if the sport psychologist could then come and work with them in their specific coaching context, to give them guidance and feedback about their implementation. Hall and Rodgers found that the most valued aspect of their workshop in figure skating was on-ice time, during which the coaches worked on the psychological techniques with skaters under the guidance of the sport psychologist. Bloom et al. reported that coaches particularly want hands-on training, as well as opportunities to observe experts performing with athletes the skills that they are developing. Bloom et al. also found that the training method that was most strongly endorsed by the coaches they interviewed was the use of mentors, who could advise them on a continuous

basis. Although the coaches in the study by Bloom et al. were referring to coaches as mentors, in a broader study of coach education methods, the involvement of both experienced coaches and sport psychologists in ongoing mentoring relationships seems to be an approach that is worthy of further research. Methods of introducing and demonstrating psychological skills and techniques that are integrated into practice would seem to be another important direction for future research. Workshops and programs need to examine the effectiveness of using a much larger component of practical demonstration. This seems to be even more effective if it is actually undertaken by experienced coaches, rather than the sport psychologist, as suggested in the description of National Coaching Foundation methods in the United Kingdom by Cale and Crisfield (1994), where expert coaches from the sport for which the coaches workshop is organised, present demonstrations of the techniques, so the training coaches can see that coaches can implement the techniques. This is another approach that should be formally evaluated.

In future research, it is important to adopt the follow-up strategy employed by Hall and Rodgers, who examined self-reported effectiveness of coach implementation of the sport psychology techniques from their workshop 8 weeks after the workshop took place. In the present study, the follow-up occurred after 6 months. In fact, it would be particularly

interesting to follow-up on several occasions over a period of time like 6 months, to observe whether use of psychological techniques is static or whether techniques evolve with practice. Observational techniques would also be effective in this type of research, as an adjunct to coach interviews and questionnaires. Further, it would be valuable to access the perceptions of athletes about their coaches' behaviour over a period after the coaches have participated in a psychological skills training workshop. Hall and Rodgers adopted this approach, but the information they obtained from it was limited, because their data was collected by mail-out and only eight of the coaches in their study returned athlete questionnaires, amounting to 24 questionnaires from the athletes of those eight of 26 coaches in the study, making generalisability suspect. There are certainly many directions for this type of research to take, because so little has been done to examine what appears to be a crucial issue in the effective delivery of sport psychology to athletes, ostensibly the essence of applied sport psychology.

Implications for Practice

Having carried out this study, it is clear that elite coaches can gain a lot of knowledge and experience from learning about sport psychology in seminars and workshops customised to their needs and presented by experts in the field. Clearly, this is likely to apply also to coaches at other levels and in a wide range of sports. It is important that coach education programs are

structured to include a substantial contribution from sport psychology, focusing on the most relevant issues and topics, presented in a format and context that can be readily applied by the coaches. Although this conclusion could apply to groups of elite and sub-elite coaches in many countries, there does seem to be a special need in Thailand, where little sport psychology is typically included in coach education at present. Further, the reactions of the coaches in the present study, who were certainly among the most experienced and distinguished in Thailand, suggested that elite coaches are quite willing to learn and to selectively apply sport psychology procedures and techniques that have been developed and used in Western sport. There was little or no negative reaction expressed by the coaches, only some tempering of the ideas to their sport and athletes. One important point that emerged from the interviews with the coaches was that they felt that it would be valuable to maintain a continuous relationship with the sport psychologist, who could act as a mentor. In this role the sport psychologist could advise the coaches on issues that they found of concern. The psychologist could also, periodically, observe the coach performing psychological skills training with athletes and give feedback about the coach's approach. It is encouraging that coaches volunteered this desire to develop a partnership with sport psychologists, and that they appreciated that there was much to be gained from working with a psychologist. This

should give impetus to the efforts to develop sport psychology provision in Thailand, in order to provide such support for coaches at the elite level at least. Integration of Western sport psychology, especially, but not only, PST, into initial coach education programs and coach continuing education is certainly supported by the present study. Once again, this seems to imply the need for the development of a more integrated coach education system. It is to be hoped that sport psychologists are willing to play their part in such a development in the interests of sport in Thailand.

Concluding Remarks

This study addressed an important issue for coaches at all levels in Thailand, as well as for the provision of sport psychology support, as an essential element of the preparation of athletes for maximum effectiveness and enjoyment of competitive sport. The combination of questionnaires and interviews completed by a group of the most experienced and expert coaches in the country effectively demonstrated that such experts were initially very interested to find out about sport psychology, were able to gain knowledge from the PST program and to use at least part of it with their athletes. In addition, they increased their interest even further, as a result. The conduct of the study was smooth and efficient and the findings were clear-cut, that is, sport psychology can be of value to elite coaches in Thailand. One concern with the evaluation of this study is that it was

heavily dependent on one previous published piece of research, namely the study of a psychological skills workshop for Canadian figure skating coaches, undertaken by Hall and Rodgers (1989). A clear signal from this observation, however, is that, because that study and the present research are the only published, formal investigations of the effects of coach education programs in sport psychology, there is great scope for future research.

Chapter 5: Repeated Measures Study of the Effect of a PST Program on Knowledge, Interest, and Use by Thai Elite Coaches

The conclusions to the study reported in chapter 4 emphasised the need for more research on the topic of coach education in the delivery of sport psychology to athletes. The discussion of issues raised by that study recognised that there were many issues that required examination and that there was a range of methods that could be used, particularly to enrich the information gleaned from such research. These issues include investigation of priorities among psychological skills and techniques, determination of the most effective mode of training coaches in sport psychology, identification of the most appropriate distribution of training sessions, and examination of the progressive effects of such training. Additional or alternative methods include observation of coaches working with athletes on psychological techniques and examination of comments from athletes about changes they observed in their coach's behaviour. Although these present many exciting research projects, the final study of this thesis did not embrace them. Of the 42 Thai elite coaches who volunteered to take part in this research at its start, 21 coaches (the control group in the previous study) had been committed for 18 months or more. During this time, they had completed the same set of three questionnaires on three separate occasions and answered the interview questions at three different times. Yet these very

busy individuals, who worked with some of Thailand's top athletes, had received no advice or training in sport psychology. On the basis of the ethics of the conduct of research within the real work context, it was considered appropriate that, once all procedures were completed for the study reported in chapter 4, an offer be made to the control group coaches from that study to present the same PST program to them that the experimental group in that study had experienced. In the event all 21 coaches indicated their desire to participate in such a program. Because the same program was to be presented, it seemed to present an opportunity to continue the testing as well. Thus, the coaches were asked about their willingness to complete the interview and the questionnaires on two more occasions and, upon their agreement, a repeated measures study was put in place. It was considered that it was necessary to maintain the same treatment and measures in order that there was continuity and that it was possible to make direct comparisons across occasions within the original control group. It was also possible to make direct comparisons with the results obtained for the 21 coaches in the experimental group in the previous study, especially with respect to the interview and questionnaires completed immediately after the PST program was presented and those presented six months later. Thus, a replication of the previous study was conducted, but using a repeated measures design. This design, based partly on opportunity

and partly on a recognition of the need for replication, meant that none of the issues or methods generated in discussion of the previous study could be implemented in this study. This was acknowledged to be a disappointment, but the duty that was felt toward the control group coaches prevailed.

The control group coaches, from Study 2, were offered the same PST program, including all activities during and after the program, as experienced by the experimental group coaches in that study. This included a four day seminar program on Psychological Skills Training (PST), an immediate assessment after the program, and a further assessment six months later. As all 21 coaches in this group wished to take part in such a PST program, and they were all willing to complete further questionnaires and interviews, the program and those assessment processes were conducted formally, so that the procedure constituted a repeated measures study of the effects of a PST program on the knowledge, interest, and use of PST by Thai elite coaches. All questionnaire data that the Study 2 control group participants produced, from the first occasion onwards, which consisted of five occasions, were analysed and then integrated with the interview information for those five occasions. This approach was adopted in order to investigate whether there were any changes in knowledge of, interest in, or utilization of sport psychology in coaches in the Study 2 control group as a result of the PST program or related to the passage of time and other

experiences during the two and half years during which they were involved in the program.

Methods

Participants

Coaches in the Study 2 control group ($n = 21$) participated in this study. Having been told the nature of the study, all 21 coaches (who will continue to be called the “control group”) signed informed consent forms, that clearly indicated that they understood the new (PST program) and repeated procedures and were willing to participate. Their details are presented in the Participants section of chapter 4.

Design

In recognition of the ethics of conducting research in real world contexts, the control group coaches, who had participated in the first three phases of this research, for one and a half years, responding to three interviews and three sets of questionnaires, with no treatment, were offered the opportunity to participate in the PST program, after all the procedures for Study 2 were completed. Using a repeated measures (within group) design the control participants from the previous study were given the PST program to examine changes from Occasions 1, 2, and 3, that is, the three phases of the previous study, to Occasions 4 and 5, that is, immediately following the PST program and six months later. After the PST program

had been given to the control group coaches, an immediate assessment was executed by giving similar semi-structured interviews and the same questionnaires as were given to the experimental group participants immediately after they completed the program in Study 2. Thus, this phase was equivalent to the immediate post-program phase experienced by the experimental group in that study. Another delayed assessment was executed six months after these 21 coaches in the control group finishing the PST program, by giving similar semi-structured interviews and the same questionnaires as before, to coaches in the control group, in order to assess whether there had been any change in their self-perceived knowledge of, interest in, and utilisation of sport psychology. This phase corresponds to the six month delayed phase for the 21 coaches in the experimental group, in Study 2 described in chapter 4.

Measures

The same assessment instruments that had been completed by the experimental group in stages 2 and 3 of Study 2 were repeated with the control group in this study. The three questionnaires and the semi-structured interviews were used to assess the self-perceived knowledge of, interest in, and use of sport psychology.

Knowledge, interest and use questionnaires. The knowledge, interest, and use questionnaires were identical to those completed by the

experimental group and the control group participants on the first three occasions. The questions in the interview immediately following the presentation of the program were the same as those completed by the experimental group participants after they had received the PST program. These are described in the Measures section of chapter 4.

Interviews. The questions in the interview completed six months after the PST program were identical to those completed by the experimental group participants six months after their PST program. They are reported in the Measures section of chapter 4. Again, on each occasion, the pre-determined general questions were supported by follow-up questions and probes, which varied from coach to coach, depending on their initial responses.

Treatment

The Psychological Skills Training Program (PST program), which was presented to coaches in the experimental group in Study 2, was again given to coaches in the control group in the present study, the sequence and the content being identical with that in the previous study. The treatment for this study is summarised in the Treatment section of chapter 4 and presented in more detail in Appendix E.

Procedure

Continued access to the 21 coaches was negotiated through their four sports organisations, after the coaches had accepted the offer of the PST

program. This offer was made to every coach after each had completed all procedures for Study 2, including the debriefing. The coaches then signed informed consent forms, indicating that they understood the nature of the PST program, the questionnaires and interviews, and the six month delayed follow-up. The facilities and resources for the PST program were once again provided by Srinakharinwirot University. The coaches were contacted by letter, informing them of the dates of the program and associated testing, and they were contacted by telephone closer to the date of the seminar, to check that they would be attending. The 21 control group participants then completed the PST program. This was during October 1993, when all 21 coaches attended a four day workshop on the PST program that was the same as the one in the previous study. After the program had been given to coaches in the control group, an immediate assessment was executed by giving similar semi-structured interviews and the same questionnaires as were given to the experimental group immediately after they completed the PST program in Study 2. Another delayed assessment was executed in April 1994, by giving similar semi-structured interviews and the same questionnaires to coaches in the control group, as were administered to the experimental group after the six month delay in Study 2. Debriefing of the control group coaches then took place and they were thanked for their participation in all five phases of the study.

The data in this study was analyzed for changes on consecutive occasions, from the first to the last occasion, which involved all five assessments of the control group, using paired t-tests, via the SPSS Statistical Analysis Package for Windows Release 6.0 (SPSS Inc., 1993), with Bonferroni corrections for multiple planned comparisons.

Results

The results section first addresses the questionnaire data. The scores on knowledge, interest, and use overall on each of the five occasions are examined first. Then changes from one occasion to another for each item or topic are considered. Interview responses are then discussed, again across all five occasions, but recognising that responses for the first three occasions were discussed in chapters 3 and 4. Thus, the emphasis is on changes observed in the fourth and fifth interviews, those immediately following the PST program and six months after the program respectively.

Questionnaire Results

Knowledge. The levels of self-reported knowledge of the topics overall for the five occasions are illustrated in Figure 5.1.

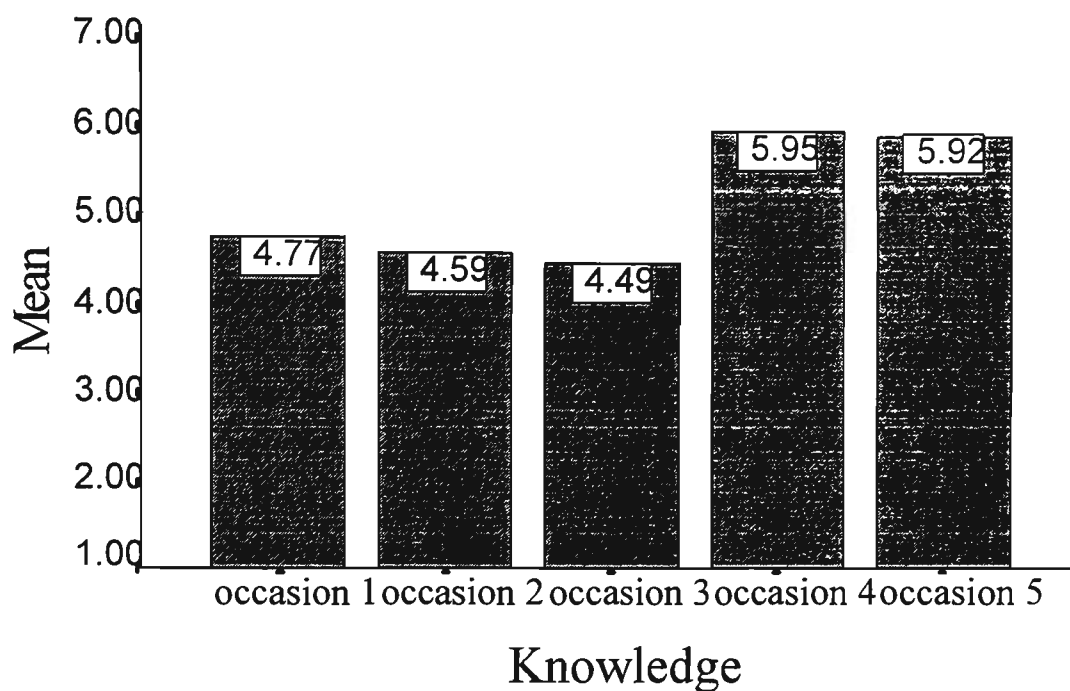


Figure 5.1. Overall mean scores for knowledge of the control group for Occasions 1, 2, 3, 4, and 5.

Figure 5.1. clearly shows that these were similar levels of mean self-reported knowledge in Occasions 1, 2, and 3, perhaps showing a small decline in self-professed knowledge, but for Occasion 4 the level of knowledge went up to a high level, almost six on a seven point Likert scale, which was maintained on Occasion 5.

Table 5.1 presents means and standard deviations for self-perceived knowledge of sport psychology of coaches in the control group for five occasions. The overall means for knowledge show moderate levels on Occasion 1 to 3, that decreased slightly from Occasion 1 to 2, and 2 to 3. There were some individual item fluctuations, such as for Motivation and

Table 5.1
Means and Standard Deviations of Subjective Assessment of Knowledge of Sport Psychology by Thai Coaches in the Control Group for Five Occasions

Topic	Occ 1		Occ 2		Occ 3		Occ 4		Occ 5	
	M	SD	M	SD	M	SD	M	SD	M	SD
Motivation	4.81	1.40	4.52	1.33	5.05	1.20	5.86	0.79	5.81	0.75
Goal setting	4.86	1.56	4.71	1.23	4.71	1.15	6.33	0.58	6.14	0.66
Stress management	4.19	1.91	4.05	1.83	3.90	1.14	5.52	0.75	5.62	0.59
Anxiety/Arousal	4.95	1.56	4.86	1.56	4.38	1.28	5.76	0.83	5.48	0.60
Relaxation	5.05	1.28	4.95	1.12	4.90	1.04	6.62	0.50	6.67	0.48
Imagery	4.24	1.84	4.00	1.64	3.76	1.48	6.48	0.60	6.29	0.64
Confidence	5.71	1.35	5.19	1.25	5.48	0.98	6.10	0.77	6.14	0.48
Self-talk	4.33	1.88	4.33	1.71	4.29	1.45	6.10	0.89	6.19	0.75
Self-thought	4.67	1.59	4.71	1.65	4.33	1.20	5.62	0.67	6.00	0.71
Attention/Concentration	5.14	1.56	5.00	1.30	4.57	1.21	5.76	0.77	5.62	0.74
Energizing/Re-energizing	4.57	1.63	4.14	1.32	4.00	1.10	5.33	0.66	5.19	0.60
Knowledge overall	4.77	1.24	4.59	1.10	4.49	0.92	5.95	0.51	5.92	0.44

Confidence, which both dropped from Occasion 1 to 2 and then rose from Occasion 2 to 3, and Anxiety/Arousal and Attention/Concentration, which dropped substantially from Occasion 1 to 3, but generally there was not too much variation of levels of ratings over the three occasions. Occasion 4 in comparison to the preceding occasions shows a substantial increase in the overall mean value with all means for the 11 items displaying higher values. The same trends were observed for Occasion 5. The biggest mean increases from Occasion 3 to 4 were: Imagery (2.72), Self-talk (1.81), Relaxation (1.72), Goal setting (1.62), Stress management (1.62). It may be noted that the smallest difference from Occasion 3 to 4 was for Confidence (0.62).

This item was by far the highest on Occasions 1, 2, and 3, so the smaller scale of increase is not too surprising.

Planned comparisons for differences between individual questionnaire items on consecutive occasions, for knowledge in the control group for five occasions of the repeated measures design are presented in Table 5.2, in the form of paired t-tests and the p values associated with those t-tests.

Table 5.2

Values for t-tests and their Significance for Subjective Assessment of Knowledge of Sport Psychology by Thai Coaches in the Control Group Examining Changes Between Consecutive Occasions

Topic	<u>Occ 1 to 2</u>		<u>Occ 2 to 3</u>		<u>Occ 3 to 4</u>		<u>Occ 4 to 5</u>	
	t-value	p	t-value	p	t-value	p	t-value	p
Motivation	1.37	.186	-3.99	.001*	-4.56	.001*	.29	.771
Goal setting	.57	.576	.00	1.00	-7.25	.001*	1.28	.214
Stress management	.77	.452	.59	.561	-8.58	.001*	-.62	.540
Anxiety/Arousal	.81	.428	2.91	.009	-6.87	.001*	2.34	.030
Relaxation	.40	.693	.20	.847	-8.22	.001*	-.37	.715
Imagery	1.10	.286	1.23	.234	-9.50	.001*	1.16	.258
Confidence	2.33	.030	-1.41	.267	-2.44	.024	-.29	.771
Self-talk	.00	1.00	.25	.803	-5.40	.001*	-.81	.428
Self-thought	-.21	.833	1.56	.134	-5.35	.001*	-2.96	.008
Attention/Concentration	.59	.561	3.29	.004	-4.86	.001*	.83	.419
Energizing/Re-energizing	1.57	.131	.62	.545	-4.78	.001*	.90	.379
Knowledge overall	1.37	.187	1.49	.151	-9.72	.001*	.53	.603

Note: Using a Bonferroni correction at $\alpha = .05$, for 44 comparisons significance is $p < .0011$. Significant p values are signified by * above.

It should be noted that only one significant change in knowledge rating was found for Occasion 1 to 2, and 2 to 3. This was for rating of knowledge of motivation between Occasion 2 and 3.

Means of self-reported knowledge relating to 10 of the 11 items increased significantly from Occasion 3 to Occasion 4. The only item that did not show a significant increase is confidence. The significant increase applies to motivation even though it had just increased significantly from Occasion 2 to 3. Again, it should be noted that there are no significant changes from Occasion 4 to 5.

Interest. The levels of self-reported interest for the topics overall for the five occasions are illustrated in Figure 5.2.

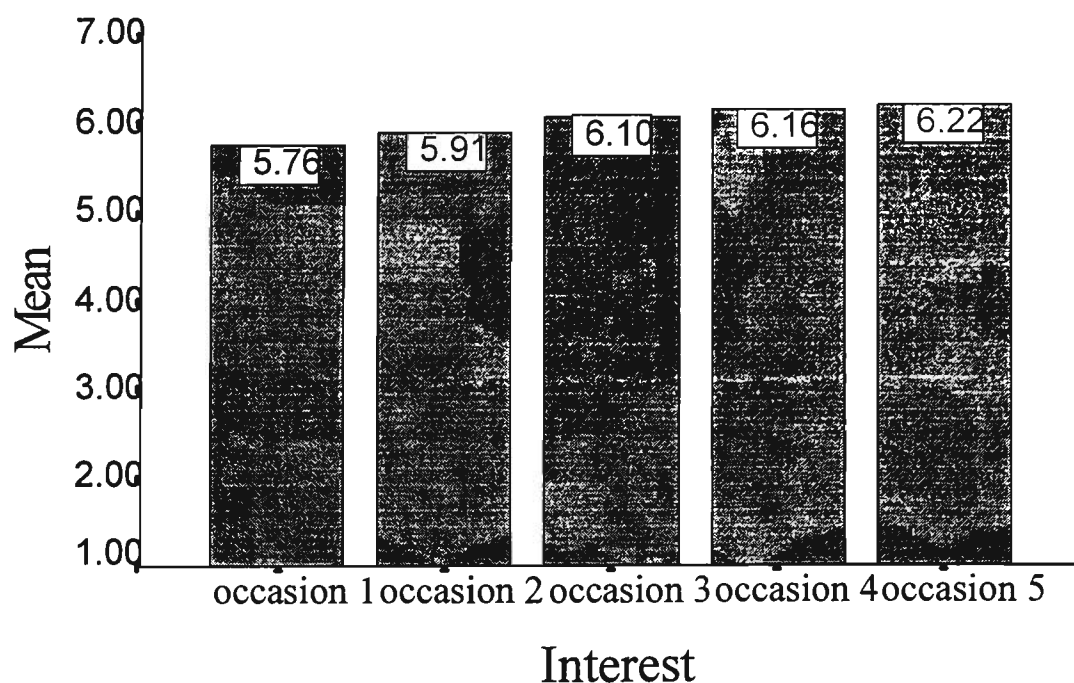


Figure 5.2. Overall mean scores for interest of the control group for Occasions 1, 2, 3, 4, and 5.

The graph clearly shows a slight but progressive increase in mean values of self-reported interest from one occasion to the next all through the five occasions. The graph also shows the high level of means at the start, so that the difference from Occasion 1 to Occasion 5 is only an increase of 0.46 from that high baseline.

Means and standard deviations of individual questionnaire items for interest in the control group for five occasions of the repeated measures design are presented in Table 5.3.

Table 5.3
Means and Standard Deviations of Subjective Assessment of Interest in Sport Psychology by Thai Coaches in the Control Group for Five Occasions

Topic	Occ 1		Occ 2		Occ 3		Occ 4		Occ 5	
	M	SD	M	SD	M	SD	M	SD	M	SD
Motivation	6.26	0.90	6.19	0.93	5.95	0.81	6.19	0.68	6.00	0.71
Goal setting	5.76	1.41	5.95	1.16	6.43	0.75	6.67	0.58	6.48	0.60
Stress management	5.33	1.53	5.67	1.24	6.19	0.68	6.29	0.64	6.24	0.70
Anxiety/Arousal	5.90	1.00	6.05	0.92	5.95	0.87	6.05	0.67	6.57	0.75
Relaxation	5.48	1.17	5.71	0.90	6.38	0.67	6.57	0.60	6.52	0.60
Imagery	5.14	1.77	5.48	1.33	6.05	0.97	6.19	0.68	6.43	0.68
Confidence	6.62	0.74	6.52	0.68	6.52	0.60	6.48	0.60	6.43	0.51
Self-talk	5.14	1.35	5.48	1.03	5.48	0.93	5.71	0.78	5.67	0.86
Self-thought	5.24	1.14	5.43	0.93	5.62	1.02	5.71	0.78	5.62	0.81
Attention/Concentration	6.43	0.98	6.33	0.91	6.14	0.79	6.00	0.78	6.05	0.59
Energizing/Re-energizing	6.05	1.43	6.19	1.12	6.33	0.66	5.95	0.74	6.38	0.59
Interest overall	5.76	0.89	5.91	0.74	6.10	0.61	6.16	0.53	6.22	0.49

The means for interest show high initial levels with a sustained gradual increase from Occasion 1 to 5. Standard deviations are low, especially on

later occasions, signifying more and more agreement across coaches. There is little change in means when comparisons are made on any two consecutive occasions.

Planned comparisons between consecutive ratings for interest in the control group for the five occasions are presented in Table 5.4, in terms of paired t-tests conducted to determine any differences for specific items. The p values associated with those t-tests are also presented in the table.

Table 5.4
Values for t-tests and their Significance for Subjective Assessment of Interest in Sport Psychology by Thai Coaches in the Control Group Examining Changes Between Consecutive Occasions

Topic	<u>Occ 1 to 2</u>		<u>Occ 2 to 3</u>		<u>Occ 3 to 4</u>		<u>Occ 4 to 5</u>	
	t-value	p	t-value	p	t-value	p	t-value	p
Motivation	.49	.629	1.75	.096	-1.56	.135	1.71	.104
Goal setting	-1.00	.329	-2.12	.047	-1.42	.171	1.16	.258
Stress management	-1.67	.110	-2.75	.012	-.70	.493	.44	.666
Anxiety/Arousal	-.65	.526	.81	.428	-.62	.540	-2.95	.008
Relaxation	-1.31	.204	-3.84	.001*	-1.45	.162	.33	.748
Imagery	-1.38	.184	-2.68	.015	-.83	.491	-1.42	.171
Confidence	.81	.428	.00	1.00	.33	.748	.29	.771
Self-talk	-1.38	.184	.00	1.00	-1.31	.204	.37	.715
Self-thought	-.89	.384	-.94	.358	-.49	.629	.81	.428
Attention/Concentration	.70	.493	1.28	.214	1.00	.329	-.29	.771
Energizing/Re-energizing	-1.00	.329	-.72	.480	2.17	.042	-2.63	.016
Interest overall	-1.19	.248	-3.10	.006	-.84	.412	-.75	.460

Note: Using a Bonferroni correction at $\alpha = .05$, for 44 comparisons significance is $p < .0011$. Significant p values are signified by * above.

There were no significant changes from Occasion 1 to 2. Only one significant change was shown from Occasion 2 to 3. This was for Relaxation, which increased in interest. There were no significant changes on Occasions 3 to 4, and 4 to 5.

Use. The levels of self-reported use of the topics overall for the five occasions are illustrated in Figure 5.3.

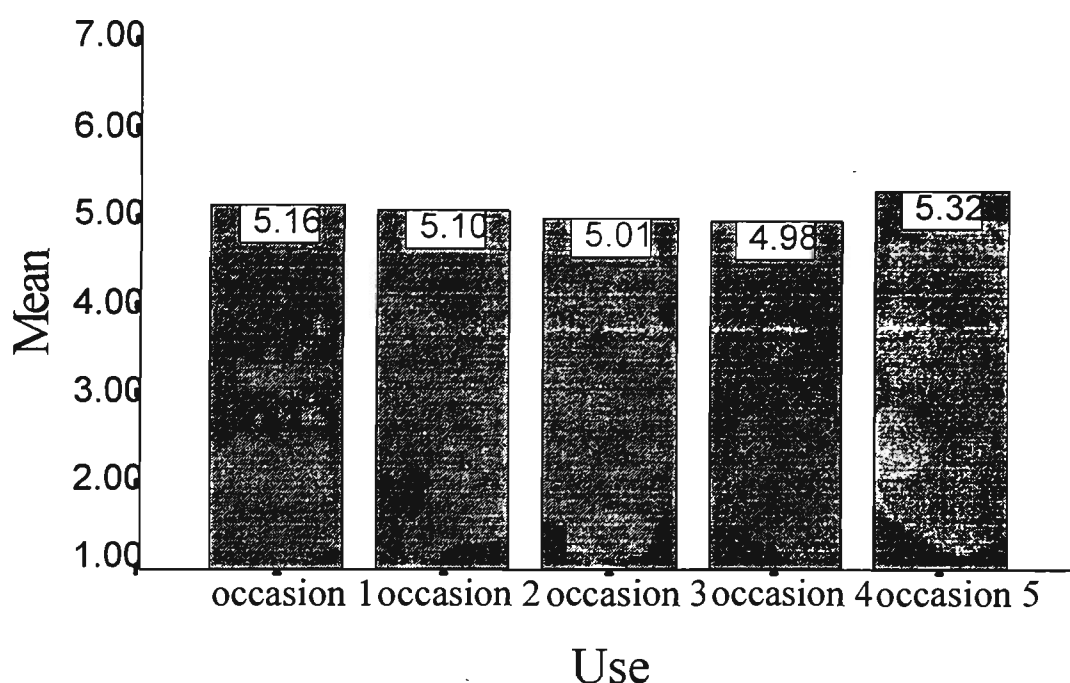


Figure 5.3. Overall mean scores for use of the control group for Occasions 1, 2, 3, 4, and 5.

The graph clearly shows that, on Occasions 1 to 4, there were very small reductions on each occasion, whereas from Occasion 4 to 5 there was an increase, but it was not large (.34).

Means and standard deviations of individual questionnaire items for use in the control group for all five occasions of the repeated measures design are presented in Table 5.5.

Table 5.5
Means and Standard Deviations of Subjective Assessment of Use of Sport Psychology by Thai Coaches in the Control Group for Five Occasions

Topic	Occ 1		Occ 2		Occ 3		Occ 4		Occ 5	
	M	SD	M	SD	M	SD	M	SD	M	SD
Motivation	5.86	1.28	5.90	1.09	6.14	0.73	5.90	1.00	5.76	0.83
Goal setting	5.14	1.59	5.10	1.22	5.43	1.33	4.67	1.02	5.67	1.02
Stress management	4.57	1.94	4.52	1.78	4.48	1.47	4.57	1.03	4.62	0.92
Anxiety/Arousal	5.57	1.17	5.24	1.38	4.38	1.28	4.48	1.03	4.57	0.98
Relaxation	4.86	1.68	4.71	1.52	4.52	1.40	4.67	0.80	6.33	0.80
Imagery	4.57	1.78	4.62	1.63	4.38	1.16	4.43	0.93	6.10	0.83
Confidence	5.95	1.20	5.90	1.00	6.00	0.84	6.00	0.71	5.67	0.80
Self-talk	4.81	1.69	4.71	1.77	4.71	1.52	5.10	1.18	4.52	1.17
Self-thought	4.95	1.60	4.86	1.68	4.76	1.45	5.10	1.26	5.00	1.14
Attention/Concentration	5.43	1.69	5.48	1.54	5.67	1.46	5.38	1.28	5.76	0.89
Energizing/Re-energizing	5.00	1.87	5.00	1.61	4.67	1.32	4.48	0.98	4.48	0.93
Use overall	5.16	1.27	5.10	1.20	5.01	1.04	4.98	0.81	5.32	0.71

There are some fluctuations, but most of them are not large enough to be of note. Several larger fluctuations were: for Occasions 2 to 3 Anxiety/Arousal drops, .86; for Occasions 3 to 4 Goal setting drops, .76; for Occasions 4 to 5 Goal setting increases, 1.0, Relaxation increases 1.66, Imagery increases 1.67, Self-talk drops .58. There were no other changes greater than .5. It is interesting to note that the overall means of use decreased from one occasion to the next on Occasion 1 to 4 (5.16, 5.10, 5.01, and 4.98), and went up to their highest level (5.32) on Occasion 5.

Planned comparisons between consecutive ratings for use in the control group for the five occasions of the repeated measures design are presented in Table 5.6, in terms of paired t-tests conducted to determine any differences for specific items. The p values associated with those t-tests are also presented in the table.

Table 5.6
Values for t-tests and their Significance for Subjective Assessment of Use of Sport Psychology by Thai Coaches in the Control Group Examining Changes Between Consecutive Occasions

Topic	Occ 1 to 2		Occ 2 to 3		Occ 3 to 4		Occ 4 to 5	
	t-value	p	t-value	p	t-value	p	t-value	p
Motivation	-.25	.803	-1.42	.171	1.56	.135	.90	.379
Goal setting	.22	.825	-1.92	.069	3.51	.002	-3.87	.001*
Stress management	.20	.841	.27	.789	-.46	.649	-.25	.803
Anxiety/Arousal	2.23	.031	6.85	.001*	-.57	.576	-.46	.649
Relaxation	1.00	.329	.75	.463	-.72	.480	-7.71	.001*
Imagery	-.25	.803	1.04	.309	-.37	.715	-7.51	.001*
Confidence	.33	.748	-.57	.576	.00	1.00	2.09	.045
Self-talk	.62	.540	.00	1.00	-1.63	.119	3.51	.002
Self-thought	.49	.629	.42	.680	-1.58	.130	.37	.715
Attention/Concentration	-.37	.715	-1.07	.296	1.30	.208	-1.28	.214
Energizing/Re-energizing	.00	1.00	1.50	.149	1.00	.329	.00	1.00
Use overall	.67	.513	1.12	.274	.37	.714	-2.61	.017

Note: Using a Bonferroni correction at $\alpha = .05$, for 44 comparisons significance is $p < .0011$. Significant p values are signified by * above.

There was only one significant change for all items over the first four occasions. This was a decline for use of anxiety/arousal to the equal lowest level of any rated use across all five occasions. There is no particular reason

evident for this substantial reduction in use of anxiety techniques by the coaches. From Occasions 4 to 5, three items showed significant self-reported increases. These were goal setting, relaxation, and imagery. None of the other eight topics showed any change.

Interview Results

It should be noted that the interview specific to the period immediately after this group of participants had gone through the four day PST program was the fourth occasion on which these individuals had responded to similar interview questions. Again, several months later when they were re-tested it was for the fifth time. These participants had, thus, gained substantial experience of the interview process and most of the questions, even though consecutive interviews were separated by six month breaks. Nonetheless, the comments made by the control group participants in the interview immediately after they experienced the PST program showed substantial similarity to those comments made, immediately after the PST program, by the participants in the experimental group, who experienced the PST program, in the study reported in chapter 4.

Six months after the PST program, the first three main interview questions from the previous study were again presented to coaches in the control group, plus two additional questions, which were appropriate to their application of sport psychology techniques in their coaching. Their

responses were similar to those reported by coaches in the experimental group at the six month delay interview results, in chapter 4, whereas their responses for the first three questions slightly changed from the previous occasions, as they reported more use of sport psychology in their coaching. The control group participants responded to the two additional questions in a consistent manner. Typical responses to questions reported by coaches in the control group were:

What sport science do you use in your coaching?

I mostly use physiology of exercise, weight training, Yoga, and occasionally use some sport psychology.

I let my athletes practice some sport psychology techniques, such as relaxation, self-talk, and meditation. Apart from this it is technique, skill and fitness training as usual.

Apart from using physiology of exercise, I have been using some sport psychology.

What are your feelings about using other sport sciences from Western countries?

It is very good for coaches who will bring this knowledge to use for enhancing the athletes' performance. However, coaches have to know how to choose the suitable techniques for their athletes.

I like their sport science because they have a good system in their study research and they can use it effectively. We can see from their success in world championships, that they win a lot more than us. So that we better learn the good parts from them.

What is the daily practice routine you give your athletes?

I train my athletes as the normal program and sometimes add sport psychology techniques when I have the opportunity. I let my athletes practice meditation and relaxation before going to bed.

I help my athletes set goals for themselves, practise relaxation and imagery after training and practise at home if time is available.

I still mostly emphasise technique and skill training and add some psychological skill training when I have the opportunity, such as meditation, relaxation and imagery.

Have you used sport psychology in your coaching for the last six months? Do you have any suggestions or any problems in using sport psychology techniques? (Note: questions 4 and 5 combined) The responses of the coaches to the two additional questions that focused on current use of sport psychology were similar across most of the 21 participants. These are now exemplified.

I have just started using the techniques with my athletes. At first they did not pay much attention. They felt the techniques were quite strange

and should not be concerned with badminton skills. I had to have long talks with them. After that they practised more seriously. If you could come to give them some advice, they might pay more attention because they might trust you in this field much more than me.

I let my athletes practice easier techniques first, such as self-talk, relaxation and practice meditation at home. They are quite interested in practising the techniques. There is no problem, my athletes are very disciplined, they do everything as I teach.

I have used some sport psychology but not much. I think I need some more time to make my athletes feel more confident in the techniques.

I still have no opportunity to train my athletes with sport psychology techniques. The problem is I have no time and the athletes are not ready. I might wait for your help. It would be very good if you could set the training system for us. I will have more confidence than I do by myself.

The results of the interviews showed some interesting insights into the reactions of the 21 Thai elite coaches in the control group to the PST program, particularly in terms of their application of the new knowledge gained. These are summarised and discussed in the next section, along with the questionnaire results.

Discussion and Conclusions

The following discussion considers the formal conclusions from this study. It examines the questionnaire and interview responses for knowledge, interest, and use by this group of 21 Thai elite coaches, who had responded to the interview questions and the questionnaire rating scales three times in the control conditions. Those responses are compared to their responses immediately after they studied the four day PST program and, again, six months later. The section then discusses the integration of the questionnaire and interview results. Methodological issues are then considered. The findings from this chapter are then used to suggest recommendations for future research and practice. Finally, there are some remarks on the benefits of Thai elite coaches being given the PST programs in the light of the experiences of these coaches who were monitored for two years before they studied the PST program.

Conclusions for the Self-Report Questionnaires

From the results of self-reported knowledge for the 21 coaches in the control group, it was concluded that the coaches' self-reported knowledge had not increased until they were presented with the PST program, that self-professed knowledge increased significantly immediately after the PST program, and remained at the new, higher level after the six month delay, as happened to the experimental group in Study 2, reported in chapter 4.

There were no significant changes for the overall means for interest, and use from Occasion 1 through Occasion 5. It is interesting to note that, ratings for interest were slightly higher from one occasion to the next, but, that the ratings for use were consistently, slightly lower from Occasion 1 to 4, and went up their highest level on Occasion 5. It can be argued that this suggests that the coaches were more and more interested in learning sport psychology, and they used sport psychology techniques more in the period of six month after the PST workshop. Although there were no significant differences for overall means of use, the means for three specific items increased significantly from Occasion 4 to 5. These items were Goal setting, Relaxation, and Imagery.

Conclusions for the Interviews

The responses of coaches in the control group to the interviews on the first three occasions showed little change. It is likely that the coaches had not previously been presented with any formal sport psychology training, or that sport psychology had not gained wide acceptance in Thailand, during the period in which this study was conducted. The responses of the coaches to those questionnaire items were that, they used sport science in their coaching, such as physiology of exercise, sports medicine, and nutrition, but there were very few coaches who mentioned sport psychology techniques. The coaches showed a high degree of interest in welcoming and learning

about sport psychology from Western countries. There were no noteworthy differences from one occasion to the next at this stage.

On Occasion 4, after they had been presented with the PST program, the responses of the coaches in the control group for the first three interview questions, remained similar to what the coaches had reported on the first three occasions. The responses for the three additional interview questions reflected the influence of the PST program, being similar to the responses of the coaches in the experimental group after they had been presented with the PST program. The responses were that the control group coaches had positive feelings about the program, and they typically gave comments that reflected their perception that they had more understanding about the value of sport psychology after the program. These 21 coaches also recommended that the program should be presented to all coaches of elite athletes in Thailand.

The coaches in the control group were interviewed again, six months after the PST program, with the same first three main interview questions plus two additional questions, that were appropriate to their application of sport psychology techniques in their coaching. The responses for the first three questions changed slightly from the previous occasions, as the coaches reported more use of sport psychology in their coaching. The responses for the two additional interview questions suggested that they used some

techniques with their athletes, typically the most basic and straight forward. They were, however, somewhat cautious, because they felt that they needed more help from experts in this field, and also they needed additional time to become more confident in the use of those techniques.

Integration of Questionnaire and Interview Results

The results from the questionnaires for Occasions 1 to 3 showed no significant differences in knowledge, interest, and use. These findings were supported by the interview responses, in which there were similar responses of the coaches in the control group on Occasions 1, 2, and 3. The 21 coaches in the control group reported in their interviews immediately after they had been presented with the PST program, on Occasion 4 of this study, that they had gained much more knowledge in sport psychology and were even more interested to learn about the area. They still reported limited use of sport psychology in their coaching. The questionnaire results clearly showed that, the control group coaches significantly increased their knowledge, but also that there was no difference in interest and use although the previous scores from the first three occasions left little room to score higher on interest. Thus, the interview and questionnaire results presented a consistent picture at this stage, with the exception of interest, for which questionnaire results could not increase greatly because they were already so near the top of the scale.

At the six month delayed stage, the questionnaire results showed that, the overall responses remained at a similar, high level for knowledge and interest, whereas those for use increased a little to a moderately high level. Thus, there were no significant differences for knowledge, interest, and use from Occasion 4 to 5. Although there was no significant difference for overall use in the questionnaire responses, this contrasted with the interview results, in which coaches reported using some sport psychology techniques that they had not employed before the PST program. In particular, they reported that they used relaxation, meditation and imagery techniques. Closer consideration of the differences between individual items from Occasion 4 to 5, indicated that the coaches self-rated significantly higher on goal setting, relaxation, and imagery items on Occasion 5. Thus the questionnaire responses of the coaches were consistent with their statements in the interviews.

Relationship to Theory and Research

The results of this repeated measures study indicated that knowledge overall and for all but one specific area of PST examined rose significantly immediately after the PST program, as was found in the previous independent groups study for the experimental group. This is also consistent with the findings of Hall and Rodgers (1989), accepting the limitations of drawing precise conclusions from their results based on the design problems

of that study, in particular, the use of different questionnaires before and after the psychological skills workshop, the absence of a test immediately after the workshop, and the limited range of psychological skills included in that workshop. Importantly, from an educational viewpoint, the self-reported knowledge of the 21 coaches in the present study was maintained at this higher level at the follow-up, as much as 6 months after the PST program was presented. Again, because Hall and Rodgers did not measure the self-reported level of psychological skills immediately after their workshop, it is not possible to know whether the level 8 weeks later was the same, or whether it had increased or decreased from that just after the workshop. The interview results supported this self-perceived increase in knowledge at the immediate post-program stage and 6 months later, once more demonstrating the value of using more than one type of measure of the same variable. Interest in sport psychology, especially the 11 elements of psychological skills included in the questionnaires, rose consistently, but by small amounts on all occasions of measurement. Thus, the significant effect observed in the previous study for the experimental group was not repeated. It can be observed that the overall level of interest for the control group on the occasion of testing prior to their participation in the PST program (Occasion 3) was somewhat higher (6.10) than that of the coaches in the experimental group prior to their involvement in the PST program (5.99).

This very high level operated against the determination of a significant effect of the program. Nevertheless, the level of interest continued to rise at immediate post-program (6.16) and 6 month post-program stages (6.22), thus showing a distinct trend. Such a pattern cannot be compared with other studies since none has measured interest at so many stages. In fact, no previous study has even measured just interest on three separate occasions without any sort of intervention. This makes the three control measures of some significance, not only for the measurement of interest, but also for knowledge and use. Whereas the overall means for Occasions 1, 2, and 3 for the coaches in the present study rose slowly, certainly retaining a level a little over a scale value of 6.0, those for knowledge dropped marginally from 4.77 to 4.59 and then to 4.49. Then they showed a dramatic increase after the PST program to 5.95. The values of overall means for use on Occasions 1, 2, and 3 also declined slightly from 5.16 to 5.10 to 5.01. perhaps the most striking point illustrated by the values cited here for all three variables, knowledge, interest, and use, is their stability in absolute terms. Over a period of 6 months between any two consecutive measures and one year between the first and the third readings, changes were of the order of less than .2 of a scale point for knowledge and use and less than .4 of a scale point for interest. Thus, it appears that the overall measures of knowledge, interest, and use were relatively stable over at least a year with

no intervention in the present study, a finding that does not correspond with any research found in the published literature. At the same time, it must be acknowledged that there were changes in mean ratings for specific items from one occasion to the next. These cannot be accounted for by any factors that were present in the context, so they must be considered to be most likely to reflect random fluctuations.

The results for use indicated that this variable declined slightly immediately after the PST program was presented, by an amount so small as to make it for practical purposes the same as the overall value on Occasion 3. An increase that was the largest change for use at any time arose for the follow-up level, as compared to the level immediately after the presentation of the PST program, but this was not significant. Examination of the changes for specific items revealed that three items did show significant increases in self-reported use from immediately post-program to the 6 month follow-up. These three items were goal setting, relaxation, and imagery. The interviews indicated that coaches found the practical exercises that they were shown in the PST program to be directly transferable to their athletes, whereas, in other areas of PST presented in the program, the material was more theoretical and they could not easily see how to apply it. Thus, the interviews support and elaborate on the questionnaire results for use. These findings are also consistent with previous research. A number of

studies have asked coaches about barriers or obstacles that they have experienced to the implementation of sport psychology with their athletes. One of the most common responses is that sport psychology material is too theoretical, that research in sport psychology is not often translated into terms that coaches can use as the basis for application (e.g., Blinde & Tierney, 1990; Bloom, Salmela, & Schinke, 1995, Hall & Rodgers, 1989; Moran, 1993; Silva, 1984). The coaches in the present study began to use those techniques for which they perceived that they had been provided with directly applicable techniques, putting aside those that were too theoretical, just as coaches in previous studies have claimed. In the only study that has introduced psychological skills and examined their use, that by Hall and Rodgers, the follow-up questionnaire on use, that was administered 8 weeks after the workshop, showed that relaxation and imagery were particularly identified as areas where effective use had increased for their sample of Canadian figure skating coaches, providing further support on this issue. One other issue arose in the present study that is clearly consistent with previous research. The Thai elite coaches in this study felt that they could benefit more from continuing contact with a sport psychologist. They did not yet feel confident to implement much of the material covered in the PST program without such support. Hall and Rodgers, as well as Bloom et al. have found similar responses in groups of Canadian coaches, who had

experienced some sport psychology training in the course of their coach education. Broadly, the present study shows substantial consistency with previous research, as far as that research goes. It is important to acknowledge that the present study and the previous one in this thesis develop research on coach education in sport psychology much farther than it has been taken by researchers either in Thailand or in the West, according to the published research to date.

Methodological Considerations

The decision to use a combination of questionnaire and interview techniques to assess self-perceived knowledge of, interest in, and use of sport psychology for coaches in the control group in this repeated measures study, proved to be sound. These two methods provided consistent results on the whole, with each source of data complementing the other on specific issues. Although the questionnaire responses were generally very high on the first three occasions, they increased further for knowledge and interest (a non-significant trend), where they were expected to, on the fourth occasion, immediately after the coaches had been presented with the PST program. They also went up on the fifth occasion for use, from a moderate to a moderately high level, although again the overall trend was not significant. It is important to note that there was no significant change in interest, or use overall from one occasion to the next from Occasion 1 to 5,

but there were some significant changes on specific items, that were clearly indicated in the questionnaire results. Nonetheless, bearing in mind the cultural pressure on “expert” coaches to know and use information and techniques valuable for their practice, there is a need for future studies to use technical aids to ensure that inflated ratings on initial testing of knowledge and use do not arise. These might include even greater efforts to gain strong rapport with participants in such studies right from the start, even more emphasis on the confidentiality of the information, and the use of an orientation administration of the questionnaires before the actual pre-intervention presentation, accompanied by most explicit discussion of the questions and the scale. Other possibilities might be to extend the Likert scale to nine or eleven points and to add more descriptors, so that a score of seven still reflects a very high rating, with nine referring to extremely high and eleven to exceptionally high. Again, it should be noted that the production of inflated responses by coaches on similar rating scales is common in this type of research, where coaches are required to rate their own knowledge or behaviour (e.g., Gould et al., 1987; Moran, 1993; Sullivan & Hodge, 1991).

Another concern that was more specific to the present study is that the repeated administration of the same questionnaires and interviews over five occasions, for three of which there were no systematic changes on which to

comment, might have lead to habituation on the part of the coaches. It is possible that the coaches lost interest in the questions and took less care in making their respective responses. Although this might explain the lack of substantial increases in response on the interest and use questionnaires after the PST program, it is interesting to note that in this repeated measures design, 21 coaches started and finished a program that involved five sets of questionnaires and interviews and lasted for well over two years. This zero attrition rate over such an extended period and with such long breaks between testing suggests that the coaches were highly motivated. The zero attrition rate can be compared to the drop-out in the study by Hall and Rodgers (1989), who experienced a reduction of 41% (44 down to 26) over an 8 week period. That study involved a mail out at the 8 week follow-up, that might account for the large proportional attrition. In the present study, the 21 coaches were nurtured throughout the 2 years and more that they were involved, with regular contacts by letter and telephone, including a telephone call to make a specific date to meet prior to each interview. The questionnaires were administered during the meeting, after the interview.

Analysis of the individual questionnaire items was important to the understanding of the thoughts and behaviour of the coaches in this study. Whereas the overall pattern for the use questionnaire in Session 5, for example, suggested no change from Session 4, significantly increased use of

three individual areas of psychological skills training, goal setting, relaxation, and imagery, was reported. This pattern of increased use of only a small number of the areas of psychological skills training under consideration was explained by comments of coaches in their interviews. They pointed out that these three areas were the ones for which more practical techniques were presented in the seminar, techniques that they could readily apply. Again, this is consistent with the reports of other researchers, who have studied coaches' attitudes to sport psychology (e.g., Blinde & Tierney, 1990; Bloom, Salmela, & Schinke, 1995, Hall & Rodgers, 1989; Moran, 1993; Silva, 1984).

On reflection, it is possible that greater use might have been made of probes and other follow-up techniques during the interviews. Examination of the records suggested that further issues might have been elicited on some occasions, whereas more detail might have been forthcoming on others. Decisions had to be made at the time of the interview about the potential gains of further probing compared with the risk of reducing rapport by pressing individuals, possibly leading to drop-out. The zero attrition rate that was observed in this study suggests that, based on this criterion at least, a sound balance was achieved.

Although refinements could be made to the methods used in this study, it is suggested that the combination of closed questionnaire responses to

specific PST issues and open interview answers to broader questions together provided a clearer reflection of the thoughts, feelings, and general behaviour of the coaches than could not have been gleaned from either alone. Such an approach once more proved effective and is recommended to future researchers. For a discussion of such refinements, including the use of observational methods, testing of athletes about their coach's behaviour, and repeated observation and measurement during the follow-up period, see the section on methodological implications in chapter 4.

It should also be noted that, because the present study had a repeated measures design, no separate control group was involved for comparison. The group that participated in the present study had acted as a control group in the previous study, however. There the 21 Thai elite coaches had been interviewed and had completed the three questionnaires on three occasions for comparison to the experimental group. Those three sets of data were employed in the present study as a baseline from which to observe any changes that occurred after participation in the PST program. As noted earlier in this discussion section, the overall ratings on all three variables, but particularly those on knowledge and use, were very stable over the three baseline tests, spanning around 18 months, providing a good basis for comparison with the ratings on the two occasions after the PST program had been presented. Such comparison was possible because the same three

questionnaires were administered and the same interview questions were asked on all five occasions, although two additional interview questions were added on Occasion 4 and a different two were added on Occasion 5. Such comparison across occasions, using the same measures, does not appear to have been attempted before. Curiously, Hall and Rodgers (1989) decided to employ a different questionnaire at the 8 week follow-up stage to that used prior to their workshop and they did not even attempt to examine reactions immediately after the workshop, a time when they still had all 44 of the original participants involved, so their data could have been more complete in two ways. Although the present study can certainly be improved on, it undoubtedly provided more comprehensive information than any studies on this topic that have been published in the past.

Implications for Future Research

This study gave further support to the value of coach education programs for elite coaches in areas like sport psychology, but there is still a need for more research. Coaches in the present study reported that they significantly increased their use of only three of the 11 techniques included in the PST program, during the six months after they experienced the four day seminar. These were goal setting, relaxation, and imagery, which the coaches pointed out had involved practical demonstrations that could be directly applied by them. As noted earlier, this is consistent with previous

research on attitudes of coaches to sport psychology implementation (e.g., Blinde & Tierney, 1990; Bloom, Salmela, & Schinke, 1995; Moran, 1993; Silva, 1984), as well as the study of the effects of a workshop on psychological skills conducted by Hall and Rodgers (1989). Studies should, thus, examine the most effective mode of delivery, for example, whether training coaches to use sport psychology techniques can best be done in a lecture format, by self-study by the coaches, through books and new technology, such as video and computer-based material, or by sport psychologists presenting workshops for coaches that teach them how to incorporate selected psychological skills training techniques into their coaching. Hall and Rodgers (1989) presented a combination of lecture and practical sessions in their workshop to figure skating coaches and the coaches indicated in their evaluation that they found the practical material more helpful. Blinde and Tierney (1990) surveyed coaches about the most effective delivery modes and again lectures rated low on swimming coaches' preference lists, whereas applied material was favoured. At this point the evidence suggests that coaches look for directly applicable techniques, but further study of different modes of presentation and a range of psychological skills is needed.

Another comment made by the coaches in the present study was that there was a large amount of material in the four day seminar and it was not

possible to assimilate it all and consider how it might be implemented in their work. Thus, they tended to be selective. Further research should compare the intensive type of seminar presented here, where the whole area of PST is covered, with distributed workshops, where one or two aspects are considered in a one day or two day event, the coaches return to their athletes and implement those techniques, then a second workshop, several weeks or months later, introduces another technique or two, and so on. In that format it might even be possible to include some involvement of the sport psychology trainer with each coach and his or her athletes between the formal training sessions. It would also be possible to start each workshop, subsequent to the first, with a session in which the coaches discussed their experiences in implementing the techniques introduced at the previous workshop. They could then learn more from the feedback given about their efforts, especially how to overcome problems. Hall and Rodgers (1989) found that figure skating coaches preferred the sessions on-ice where the sport psychologist guided them, while they applied the techniques with their skaters. The involvement of athletes in this training adds another dimension to the possibilities for consolidating teaching and learning and should be explored further.

Like much of the research conducted to date, the present study involved self-report by coaches of their attitudes or behaviour. Further studies of

actual behaviour need to be carried out because self-reports are notoriously unreliable and coaches have been shown to be poor at reporting their own behaviour (e.g., Smoll & Smith, 1989). Observational research methods might be useful here. Coaches can be observed over a number of training sessions prior to the presentation of a PST workshop and then for a number of training sessions after the workshop. The sessions observed would need to cover a substantial period of time before and after the PST workshop, first to reduce effects on the coaches of being observed and second to examine whether any changes that are observed appear to be enduring. Hall and Rodgers (1989) found that the athletes coached by at least some of the coaches in their PST training study reported that the coaches showed changes in their training style immediately after the workshop, but had reverted to their old style after three weeks or so.

A combination of the research methods suggested here might provide rich information. Distributed PST workshop sessions, each covering one or two topics might be evaluated by questionnaires and interviews. At the same time, observation of training sessions before and after each workshop would reinforce the self-reports of the coaches. The views of athletes could also be sought. This type of study would lend itself well to an educational action research paradigm. In summary, much more research is needed on the role that coaches can play in implementing sport psychology with their

athletes. There are important issues to be resolved, if sport psychology and coaching are to work effectively together.

Implications for Practice

The results of this repeated measures study again showed that it is important for coaches to be trained in sport psychology, because they are very interested in the potential of sport psychology to support their athletes. This is particularly the case in a country like Thailand, where sport psychology is only just developing, so there are few experts, certainly too few to provide sport psychology support directly to all elite athletes. Coaches are usually in the best position to implement PST techniques with their athletes. It is important to get sport psychology, especially PST, into coach education programs, so more coaches become aware of the value of sport science, particularly sport psychology, for their coaching. The limited research to date is consistent with the present study in suggesting several principles for the delivery of such PST workshops. First, it would seem that sport psychologists might be inclined to include more material than their non-psychologist coach audience can handle. Distributed sessions might be best, where only one or two issues are covered in each session. Hall and Rodgers (1989) presented their workshop over two-and-a-half hours. In that time they managed to fit five sessions. First there was a theoretical session on three psychological skills, then a session on-ice, then another theory

session on the remaining skills, another on-ice session, and, finally, a discussion session to pull the workshop together. The issues that should be included in the sessions in future workshops or programs should be those that are considered to be more basic by the coaches, such as relaxation, goal setting, and imagery. Those psychological skills were among the small number selected by Hall and Rodgers for their workshop. In addition, they have emerged high on the lists of other researchers (e.g., Gould et al., 1987; Moran, 1993; Sullivan & Hodge, 1991). Thus, these also appear to be viewed by coaches as easier to implement. Sessions should use an applied format wherever this is possible and it is often effective to include athletes, who can be involved in demonstrations by the sport psychologist and practice of the techniques by the coaches. Thus, the sport psychologist should work with the coaches and their athletes to achieve optimal outcomes. Although these suggestions seem to be well founded on the research to date, further research is needed to refine the training of coaches in the implementation of sport psychology.

Concluding Remarks

The combination of questionnaires and interviews completed on five occasions by a group of the most experienced and expert coaches in Thailand, effectively demonstrated that these coaches were initially very interested to find out about sport psychology, that they sustained their

interest over more than 18 months, that they were able to gain knowledge from the PST program and to use it with their athletes, and that they increased their interest even more, as a result. They spent over two years in the study, much of it as control participants. Although this group of coaches had participated in this project for a long period of time, the conduct of the study was smooth and efficient and the findings were largely clear-cut; sport psychology can be of value to elite coaches and this is also likely to be the case for coaches at other levels. Once again, however, the consideration of the questionnaire responses and the comments made in the interviews by this group of elite coaches emphasised that there are many more questions to be answered on the topic of coach education in sport psychology and the related issue of coach implementation of sport psychology techniques with their athletes.

Chapter 6: General Discussion and Conclusions

This discussion briefly summarises the thesis conclusions. The discussion goes on to consider the relationship of the results found in this thesis to theory and previous research. This section summarises the attitudes of coaches in Thailand to sport psychology, as well as the attitudes to psychological skills training of coaches from other parts of the world, particularly the West. Methodological considerations are briefly addressed and implications for future research and practice are then discussed. The chapter ends with concluding remarks for the thesis.

Summary of Thesis Conclusions

The knowledge, interest, and use of psychological skills training by Thai elite coaches were examined in three studies. In the first study, initial knowledge, interest, and use of 42 national level coaches from four sports were examined, using questionnaires and interviews. Questionnaires indicated relatively high levels of knowledge, strong interest, and moderate levels of use. The interviews suggested that the questionnaire responses were probably inflated, based on cultural factors associated with the status of experts in Thailand; the participants being considered to be expert elite coaches. Thus, it was concluded that actual knowledge and use were lower, as reflected in the interviews, although the high level of interest was confirmed by the interviews.

In Study 2, the psychological skills training program was found to enhance the immediate reported knowledge and interest in those 21 Thai elite coaches who took part in the PST program, that is the experimental group. There was no change in self-reported use of psychological skills training. By comparison, the 21 coaches in the control group showed no changes in knowledge, interest, or use from initial measurement to interviews and questionnaires administered at a time equivalent to the end of the PST program. The follow-up six months later indicated that the increase in knowledge and interest reported by those 21 coaches who attended the PST program was sustained, as reflected in questionnaire and interview responses. Use of PST techniques was reported to have increased, but not for all techniques, the strongest effects being for relaxation, imagery, anxiety/arousal, and motivation. Again, there was no change in knowledge, interest, or use for the control group on either interviews or questionnaires at this time.

Study 3 was a repeated measures study, in which the PST program was presented to the 21 control group participants, following the final procedures in Study 2. Together the questionnaires and interviews indicated increases of knowledge and interest immediately following participation in the PST program by the control participants, as compared with the three previous questionnaire and interview reports, whereas there was no change

for use on this occasion. At the six month follow up, the questionnaire and interview responses on knowledge and interest indicated that the original control group coaches retained the increased levels of knowledge and interest shown on Occasion 4. There was no significant increase in overall use reported, but there was a change in trend from a slow decline in reported use over the first four occasions to an increasing use six months after the PST program was presented. It was noteworthy that the mean questionnaire ratings for specific items did reveal significant increases in use for three topics. These were goal setting, relaxation, and imagery. These were the topics for which the workshop curriculum included the most direct and practical exercises. This point was noted in the interview comments of several coaches.

Relationship to Theory and Research

Extensive search of the literature indicates that much has been written about the relationship between sport psychology training and coaching, and a substantial proportion of this work has proposed that coaches could become directly involved in the introduction of sport psychology techniques, especially PST, to athletes (e.g., Barham, 1991; Danish & Hale, 1983; Howe & Gordon, 1992; Krueger, 1988; Martens, 1987; Silva, 1984; Tuffey, 1996). Surprisingly, in view of the number of sport psychologists and coaches that have written about the issue, there has been relatively little

research that has considered coaches' attitudes to implementing sport psychology for the elite athletes with whom they work (e.g., Blinde & Tierney, 1990; Gould et al., 1987; Moran, 1993, Rice & Ostrow, 1994; Silva, 1984; Sontimuang, 1993; Sullivan & Hodge, 1991). There has been even less research on ways in which coaches might be prepared to present sport psychology training for athletes, that is, studies of coaches reactions to actual PST workshops or programs (Hall & Rodgers, 1989).

The three studies that were conducted in this thesis together indicated quite strongly that the presentation of seminars on PST did enhance the self-reported knowledge of elite coaches and their interest in learning more about sport psychology. Then, after a six month delay, their use of at least some of the sport psychology techniques. This suggested that the workshop approach does have value in helping coaches to become involved in the implementation of sport psychology with their respective athletes. This is consistent with a study by Hall & Rodgers (1989) that was conducted with figure skating coaches. Hall and Rodgers gave these coaches a pretest and posttest on attitudes and use, before and after a one day PST workshop, in which coaches were first taught about and then used five basic PST techniques with skaters. The results from the participants' self-reports were that most coaches felt that the workshop was informative and helped them to more effectively use the sport psychology techniques presented. In a

follow-up, eight weeks after the coaches participated in the workshop, the skaters they coached reported improvements that they had observed in their coaches' behaviour. This suggests that the employment of workshops to present PST training could benefit both coaches and the athletes they train.

Another example of the successful organisation of a seminar on sport psychology techniques for coaches was the First Australian Elite Coaches Seminar (Australia Coaching Council, 1987), which was held in Canberra in 1986. The three day seminar was presented to elite coaches using a combination of lecture and workshop modes. The seminar concluded with a summing up, panel discussion, and overall evaluation session, in which coaches were invited to comment on the seminar. Many of the general comments from coaches indicated that the seminar included much valuable and useful information; that the workshop format was most beneficial to learning new techniques; and that more seminars of this kind are needed to educate and develop Australia's elite coaches. It should be noted that this was not a controlled study, rather the comments were responses to an evaluation conducted after the completion of the program. Nonetheless, the preference for the more applied elements of the program is consistent with the findings of Hall and Rodgers (1989), as well as with the interview comments of the coaches in Studies 2 and 3 of the present thesis. It is to be noted that the coaches in the present study requested that the sport

psychologist should come and work with them and their athletes on a continuing basis. The questionnaire results on the delayed testing six months after the PST program in Studies 2 and 3 also suggested that the coaches mainly implemented those skills for which they had been shown practical techniques. This suggests that sport psychologists working with coaches after such PST programs could help them to introduce more skills by showing the coaches additional practical techniques. In the first instance, the new technique might be demonstrated by the psychologist, directly with the athletes, then the coach could work on the technique with the athletes, being observed by the psychologist, who would give feedback to the coach.

With respect to the implementation of sport psychology in practice, the present results are also consistent with the diffusion of technology perspective proposed by Blinde and Tierney (1990). They suggested that coaches were capable of implementing the technology of sport psychology into their sports, but, again, they reported that the coaches they studied favoured those elements of sport psychology that were presented in a more applied context. There have only been several published studies of the attitudes of coaches before those conducted in the present thesis (Blinde & Tierney, 1990; Gould et al., 1987; Moran, 1993, Rice & Ostrow, 1994; Silva, 1984; Sontimuang, 1993; Sullivan & Hodge, 1991). There was also one informal evaluation of a program that was offered for practical purposes

(Howe & Gordon, 1992) and only one study of the effects of a PST program on attitudes and use (Hall & Rodgers, 1989). Thus, there is still a need for more research on coach attitudes to and use of sport psychology before any firm conclusions are drawn. At the same time, some patterns do appear to be emerging. First, it seems clear that coaches are generally favourable to the idea of implementing sport psychology and integrating it with their overall training program, as long as they have been provided with adequate and suitable training. Second, their attitudes typically become even more favourable, when they participate in PST programs. Third, they use sport psychology techniques more after participating in such applied programs. Finally, coaches prefer an applied presentation format, especially where the sport psychologist works on implementation of techniques for athletes with the coaches.

In addition, the current research should be considered within the context of the cultural tradition of Thailand. Recent developments in sport, particularly elite sport, in Thailand have seen the emergence of a more professional approach to coaching and sports sciences services.

Nonetheless, sport psychology involvement and service to elite sport in Thailand has been limited. The present level of service is largely provided by a small number of people with various levels of training and experience in psychology and sport psychology. Unfortunately, the majority of these

people are not in the position to adequately support all the needs of the elite athletes in Thailand. The current research would suggest that Thai elite coaches are amenable to studying sport psychology with a view to introducing a range of basic techniques. The coaches in the two studies in the present thesis that examined use after a PST program were inclined to implement those techniques that they believed to be most valuable for their athletes, with particular preference for the techniques that they judged could readily be applied in a practical context. The results of the studies in this thesis suggest that the coaches were particularly interested in attending seminars and workshops that involve a substantial amount of applied work, perhaps including demonstrations of specific techniques and opportunities to practice those techniques with athletes, under the guidance of a qualified sport psychologist.

There is a very limited number of individuals in Thailand with the competence and training in sport psychology to provide support to all elite athletes. Presently, there is also a lack of any systematic training and accreditation program to develop a body of experts in sport psychology in the short to medium term. Thus, the involvement of coaches in the implementation of a range of basic sport psychology techniques seems to be imperative for the time being at least, if the appropriate psychological support is to be provided to Thailand's elite athletes. The present research

holds out hope that, given the will, PST programs can be developed to train Thai elite coaches to implement psychological skills training with their athletes.

Methodological Considerations

This research involved three linked studies in which similar methods were employed at various stages over a period of more than two years, to examine the knowledge, interest, and use of sport psychology techniques by Thai elite coaches. This overall design appeared to work effectively, providing a good reflection of changes in the self-evaluation or self-reports of those elite coaches. The results, even for the group of coaches that repeated the questionnaires and interviews on five separate occasions, generally reflected that the coaches' responses varied in meaningful ways, in relation to the introduction of the psychological skills training. One possible exception to this is the pattern for use found in the control group coaches, where it did appear that by the fifth administration of the questionnaire measures, some habituation might have occurred, so there was no substantial change in responses from previous occasions overall. Statistically significant changes were observed for three areas, goal setting, relaxation, and imagery, that are widely used and where more practical exercises were undertaken with the coaches. The interviews on Occasion 5 seemed to support this view, indicating that the coaches did start to use

some of the techniques, but they were selective. They based their decisions on issues that were considered to be more relevant for their athletes, as well as on the degree to which they felt that they were competent to apply the techniques. In addition, the coaches indicated through the interviews that they felt they needed more time and perhaps instruction from the sport psychologist to feel confident using the techniques. They also intimated that there were some time management issues, suggesting that they did not have enough time in their scheduled coaching programs to add PST techniques. This is consistent with the reports of elite coaches from the West, in previous studies, who often cited lack of available time as a reason for not implementing sport psychology in their program (e.g., Blinde & Tierney, 1990; Moran, 1993; Rice & Ostrow, 1994). In providing both the specific comparisons across occasions through statistical analysis of the questionnaires and the richness of the thoughts and feelings that were the basis for those judgements through the analysis of verbatim interview responses, the overall design of the three linked studies worked well.

It, thus, proved valuable to combine the structured rating scale-based questionnaires with the more open-ended interview questions in order to achieve the richness of response outcomes that were solicited through the interviews while, at the same time, having the quantitative measure of levels, given by the rating scales. The rating scale results might have been

even more clear-cut had it not been for the coaches' responses to the initial set of questionnaires, which, although they were assured of confidentiality, still seemed to show an inflation of coaches' self-reported knowledge and use of the techniques when compared with the initial interviews. This appears to be based, to some extent, on the cultural perception of experts in Thailand. It also probably reflects an element of social desirability responding that has been observed in a number of studies (e.g., Gould et al., 1987; Moran, 1993; Sullivan & Hodge, 1991). Nonetheless, had the questionnaire values been more moderate on that first occasion, then the increases shown by both the original experimental group and the control group, when they had participated in the PST program, would probably have been more substantial.

One weakness that this study shares with all the other research that was identified in this area is that the results are based totally on self-report measures. Moran (1993) points out that the results of his study reflect the opinions of coaches not objective behaviour. It could be argued that the present research focus has an advantage over what has been found in the research literature, which typically used only rating scales, occasionally adding the option for open-ended responses after the rating scales on questionnaires (e.g., Gould et al., 1987; Moran, 1993; Rice & Ostrow, 1994; Sullivan & Hodge, 1991). The addition of interviews at every stage of the

three linked studies certainly added valuable information that clarified some initially puzzling questionnaire findings. Nonetheless, there is a need for further work in this area to employ objective measures, as well as, or instead of, self-report instruments. One such approach would be the use of tests of knowledge, rather than simply asking the coaches to assess their own level of knowledge. The latter proved problematic with this specific group of Thai elite coaches, because of their need to save face on the first knowledge questionnaire. Even when coaches are being honest, they are subject to the common problem that they do not know what they do not know. That is, a coach who has no previous training in sport psychology might believe, for example, that it is all about motivation and they know how to motivate players. A structured objective test of issues in PST, administered before and after a program, would provide a more precise measure of exactly what each coach does know about that area. The danger with this sort of approach is that the stress or the embarrassment would lead to a substantial amount of withdrawal. This is a problem that should be managed sensitively.

A method that is not used in sport psychology as widely as it might be is the observational approach. Observing coaches during training would enable a researcher to identify those techniques that are used, as well as to determine which techniques are presented appropriately and those that

appear to have been misunderstood by the coach. A substantial amount of observation would need to be undertaken to be confident of recording representative patterns of training. Even then, coaches can only present what is needed by the athletes in their judgement, so the absence of a particular technique or topic area of PST could not be taken as an indication that the coach did not know about it. Perhaps diplomatic questioning on such omissions could help to clarify this sort of situation. Every research method has its strengths and weaknesses. The use of a range of techniques would permit more cross-checking or triangulation to occur and might allow a more complete picture to emerge. Further information might be gleaned from another source, namely athletes coached by each coach who is involved in a research project. Athletes often provide quite accurate perceptions of the behaviour of coaches (e.g., Smoll & Smith, 1989). Hall and Rodgers (1989) had some success with this approach, but their data collection method resulted in a small and biased sample of athletes.

Another unusual aspect of the research reported in this thesis is that all 42 voluntary participants completed all the components that they were requested to do. This meant that some were involved for at least 18 months and others participated for well over 2 years. There was no attrition at all. Again, this might reflect the operation of a cultural factor or it might be an indication of genuine interest in PST. It is also possible that my specific

management of the coaches had some effect. As noted in the chapters describing the three studies, I took great care to cultivate a rapport with the coaches, to treat them with great respect and thoughtfulness. Also, not only did I write to each, informing them of the next phase, as it approached, but I then contacted each coach individually by telephone, to add a personal touch. The zero attrition rate is noteworthy, in any event.

Perhaps surprisingly, the studies described in chapters 4 and 5 of the present thesis appear to be the first controlled, experimental studies of PST training for coaches. No similar studies could be found in the published literature. The only other piece of research that presented a PST program and measured coach use and effectiveness of the, rather limited, techniques included in the program, was conducted by Hall and Rodgers (1989). That study, however, employed different questionnaires prior to the workshop and 8 weeks after it, and did not measure anything immediately after the workshop, using either of those questionnaires. Thus, the findings from each questionnaire must be considered separately. The pre-workshop questionnaire was, thus, a test of initial coach attitudes to use and effectiveness of psychological skills training, similar to the previous research on coach implementation of sport psychology (e.g., Blinde & Tierney, 1990; Gould et al., 1987; Moran, 1993; Rice & Ostrow, 1994; Sontimuang, 1993; Sullivan & Hodge, 1991) and the study reported in

chapter 3 of the present thesis. In the 8 week follow-up work, two questionnaires were administered, one designed to assess coach attitudes to use and effectiveness and the other included to directly evaluate the effectiveness of the workshop. This must be considered to represent an evaluation study, because there is nothing to which responses on that occasion can be directly compared. There is a need for more research that employs experimental controls to identify changes across occasions or between groups, as was done in the present thesis.

To summarise, the use of two research methods, questionnaires and interviews, proved valuable in the present thesis, allowing quantitative comparisons to be made between occasions and groups, but also providing a richness of information about reasons underlying ratings made. Use of additional research methods, such as observation, objective tests, and athlete perceptions, could enhance the information still further. It is argued that the studies reported in chapters 4 and 5 are the first to use experimental designs to examine coach response to PST programs. The zero attrition rate is an unusual feature of the research and is attributed to the development of very strong rapport, combined with thorough organisation.

Implications for Future Research

Although relatively little research has been done in this field, the results do suggest that the coaches generally appreciate the value of PST

workshops, and that there is a need for further studies to be done. One obvious direction for such research is to replicate the findings reported in this thesis with other groups of coaches from all around the world, that is, from Eastern and Western cultures. The research on PST programs to date, suggests that coaches from Eastern cultures, as in the present studies, and coaches from Western cultures (Hall & Rodgers, 1989), respond in similar ways to such PST workshops, but the number of studies in both cultures is very limited.

A number of other issues are also raised by the present research. The current thesis involved elite coaches and showed very positive responses. This is similar to Hall and Rodgers (1989) study that involved coaches that they called "elite", but who were from a much wider range of levels than the coaches in the present thesis. Hall and Rodgers suggested that the more elite coaches in their study gave the most positive evaluations of the PST workshop. This was also found by Rice and Ostrow (1994) and Haslam and McDonald (1993) in their attitudinal studies, that is, more experienced or advanced level coaches were found to be more favourable to the idea of coaches, including themselves, implementing PST or sport psychology in general. Thus, a further potentially fruitful area to study is relationships between levels of coaching and attitudes to sport psychology, particularly for those coaches already implementing sport psychology.

Coaches in the present thesis, especially in their interview responses, highlighted the value of more readily applicable aspects of the PST program. The coaches in the Hall and Rodgers (1989) study also felt that the on-ice sessions, working with athletes were the most useful. Thus, another issue worthy of study is the most efficacious mode for this type of training in sport psychology for coaches. Further study of the lecture form of presentation, compared with a more practical type of session, such as workshops with coaches alone, or workshops with athletes learning the techniques from coaches, as in Hall & Rodgers' study (1989), would be valuable. The literature and the present study suggest that coaches believe practical sessions to be the most effective means for them to develop the capacity to teach PST. The use of demonstrations, presented by coaches who have already developed the skills to implement sport psychology techniques, has also been advocated both in previous work (e.g., Bloom, Salmela, & Schinke, 1995; Cale & Crisfield, 1994) and in the comments of the Thai coaches in the present research.

A concern with the studies in the present thesis, as well as with the Hall & Rodgers (1989) study and others, such as the attitudes-only studies by Moran (1993) and Blinde and Tierney (1990), is that they all used coaches' self-reports as their only source of information about knowledge, interests, or use. Future research might replicate the current thesis design, but use

comprehensive knowledge tests at pre- and post-intervention, to assess the levels of objective knowledge gained by coaches instead of, or in addition to, coaches' self-perceived knowledge. It is important to be aware, when using this kind of test with coaches in different cultural contexts, such as that of Thailand, that coaches might find such a test threatening and not wish to be involved with any direct knowledge test, because being an elite level coach is regarded as a high status position and teachers and coaches should not be questioned about their knowledge. Also, elite level coaches would not like to fail in a test on a topic like this, as it would be embarrassing and they could lose face. The kind of objective test could be done, but very delicately, and with voluntary co-operation from coaches, otherwise coaches might give up participating in the program, which will not be good for the objective of the promotion of sport psychology to coaches in countries, like Thailand. Sport psychology is still new in Thailand and needs to be developed quickly and effectively, in order that Thai elite athletes have improved chances to compete internationally with athletes from western countries, starting from an equal position with regard to preparation.

Another research approach that should be considered carefully is the potential for use of observational methods. Using an observational approach, coaches would be observed over several months, then they (the

coaches in the program) would participate in the treatment for several days, and after that they would be observed again over a substantial period of time. Alternatively, there could be a large number of observation times, such as one week every two months. In this way it should be possible to clearly identify and describe the actual psychological skills training techniques introduced by the coach. This would also be an effective way of checking the findings in the Hall and Rodgers study, which showed that whereas coaches produce changed behaviours after experiencing a workshop, for some coaches there is a decline in the use of the new techniques after a relatively short period of time. The problems that occur with implementation would be observed and addressed later, perhaps by giving the coaches another workshop or individual feedback. Reasons for the decline could also be explored using such observational techniques.

Another interesting research focus concerns the distribution of training, particularly the relative effectiveness of long seminars involving a wide array of PST topics and techniques and shorter sessions, each focused on specific topics and distributed over time. The feedback from the coaches in the present thesis suggests that they found the scope of the material in a four day workshop on all the main aspects of PST to be overwhelming. Their strategy typically was to focus on a small number of techniques, often those that were seen to be more directly applicable. Research should examine the

preferences of coaches for these different approaches, using interview and questionnaire measures, as well as the relative effectiveness of the methods, using objective tests of knowledge gained and observation of the degree of implementation of techniques by the coaches (e.g., Gould et al., 1987). It should not be assumed that all the PST techniques are necessarily amenable to the same training modalities. For example, it might be that certain techniques need to be developed in steps over several sessions with time to try out the procedures with athletes, whereas others can be very effectively presented in a single session. Thus, analyses need to be sensitive enough to pick up differences between topics and techniques in effective training mode.

To summarise this section, there has been limited research on training coaches to implement sport psychology with their athletes. The present thesis demonstrates that such research has potential. A range of research directions have been suggested to further enhance understanding of the effective role that coaches can play in the delivery of sport psychology to athletes at the elite, sub-elite, and junior elite levels.

Implications for Practice

The results presented in this thesis give a clear indication that coaches of elite athletes in Thailand do appreciate the value of sport psychology for their athletes and that, on the whole, they are willing to become involved in

training their athletes in sport psychology, provided that they receive appropriate training in the delivery of sport psychology techniques prior to the formal or informal introduction of such techniques to their athletes.

Thus, it is important to ensure that the appropriate coach education programs in sport psychology are provided for such coaches. This applies equally to Western coaches as it does to coaches operating in other geographical locations throughout the world.

In many Western countries, such as America, Canada, and Australia, training in sport psychology is provided within coach education programs. For example in the United States, the American Sport Education Program (ASEP) takes a major role in providing the coach education programs for coaches. Coaches have to complete more requirements at each higher level, and that typically includes more sport psychology at each progressive stage. The ASEP program consists of three levels of coach education. The first level, the Volunteer Level, is for youth sport. The second level, the Leader Level, aims for interscholastic and club sport. The highest level, the Master Level, is for advanced and continuing education of coaches. The Masters Level program includes sport psychology, sport physiology, sport law, sport rehabilitation, nutrition and weight control, teaching sport skills, sport administration, time management, sport injuries, and sport mechanics (Martens, 1997). In Canada, the National Coaching Certification Program

(NCCP) the goal of which is to prepare coaches, so that they can provide athletes with the “best” coaching, is founded on the idea that every athlete deserves the best coaching possible. The NCCP provides a five-level educational program for coaches of all levels of athletes in over 60 sports. Levels 1 to 3 each cover three components of coaching, namely the theory, technical, and practical aspects. At Level 3, psychological and physical training are integrated in the program. After completing all three components at each level, coaches receive official recognition of their accomplishment in terms of certification. Levels 4 and 5 represent the top level of professional training for coaches and prepare them for leadership roles in national and international sport (Coaching Association of Canada, 1990). In Australia, the National Coaching Accreditation Scheme (NCAS; Australian Coaching Council Incorporated, 1994) offers a development program for coaches with courses at four levels, Level 0 to Level 3. Level 0 is for coaching programs in children’s sport; Level 1, involves coaching at the beginning level; Level 2 is for coaching at the intermediate level, and Level 3 refers to coaching at the national and international levels. Further, following accreditation within NCAS, coaches are required to fulfill updating requirements over a four year period as set down by their national sporting organisation in order to keep their coaching knowledge up-to-date and to maintain their accreditation. To attain each level, coaches need to do

more work and they must acquire greater experience in coaching skills, and in sport psychology in particular, than at the previous level.

Nonetheless, it may be that the material in such programs is not adequate or it may be that it is not presented in the most effective format or context to be really meaningful. Certainly, there were some variations in the reactions of the coaches in the Hall & Rodgers (1989) study, who were asked to compare the workshop that Hall and Rodgers presented, with other sources of sport psychology that they had experienced. Many of the participating coaches referred to the Canadian NCCP system, and a substantial proportion of them (80%) seemed to think that the format of the Hall & Rodgers workshop, particularly the hands-on practice with athletes under guidance by the sport psychologist, was more useful, whereas relatively few (20%) felt that the National Coaching Certification Program (NCCP) material was more effective. It must be of concern that a national program that has been assigned substantial importance was so poorly evaluated, but it should be remembered that the coaches were responding to a questionnaire administered by the presenters of the “rival” workshop. There is also the issue of ensuring that future sport psychology workshop-type activities consider the relevance of material being in tune with the cultural requirements of each specific situation. Thus, it must be questioned whether the national training system might be using some inappropriate or

ineffective teaching methods. In the 1980's, the National Coaching Foundation was established in the UK. It created a tiered system of accredited courses, including several in sport psychology, at various levels. These were typically taught, especially at the non-elite level, to groups from a variety of sports, so that they usually involved general principles that the coaches could apply to their own context. Again, coaches tended to request more sport specific advice (T. Morris, personal communication, November 12, 1997). As more information is gathered, it could well be shown that a different approach is needed, a more applied type of approach, that is, involving more use of hands on techniques, especially those in which the coaches are working with sport psychologists and athletes. Of course, this raises logistical problems, especially for minor sports that do not have the money to run such courses. Interestingly, it is an approach that Cale and Crisfield (1994) reported is now being introduced by the NCF, for the teaching of sport psychology to coaches in the UK. Courses tend to be sport specific, more practically-oriented, linked to exercises that the coaches carry out with their athletes, and they include sessions in which coaches with experience in sport psychology demonstrate techniques to the training coaches.

At the present time, Thailand has no formal coach education system that is based on structured levels of training, as exists in many Western

countries. In countries like the USA, Canada, and Australia coaches at different levels are considered to have certain competencies, based on courses that they have taken. Coaches in these countries have to go through specified training in order to progress to the next level. Further, these Western coaches are not normally able to work with higher level athletes, if they have not reached that specified level in the coach education system. There is an urgent and critical need to consider the development and implementation of this sort of education and accreditation system for coaches in countries like Thailand. Such a system would certainly be expected to include substantial components of sport psychology. In the meantime, it is clear from this thesis that coaches at the elite level of sport in Thailand found much benefit from the PST program in which they participated and asked for more training in sport psychology, especially of the hands-on type, where they work with sport psychologists and athletes. This sort of program could well be implemented in Thailand for coaches not only of elite athletes, but also for those coaches training sub-elite athletes and junior potential elite athletes.

A clear implication for practice from the present research is the preference of coaches for more directly applied modes of training in sport psychology. Lectures involving theories and research that clearly signal practical approaches to experienced researchers, often appear to have little

meaning to practitioners without such training in psychology. The presentation of material in real sport, applied contexts was also favoured by the coaches in the study by Blinde and Tierney (1990) and in the study of skaters by Hall and Rodgers (1989), where the on-ice sessions were most popular. The involvement of athletes in coach education workshops, so that coaches can see directly how psychologists implement techniques with them and to provide coaches with the opportunity to practice the sport psychology techniques that they are being taught with athletes, but in a non-critical environment, was also greatly favoured. Accepting that these are, as yet, only coach preferences, that would be more strongly endorsed if objective measures produced the same results as the self reports, these pedagogic techniques would seem to be worth adopting, both because they are likely to increase the motivation of the coaches and because they do seem intuitively to provide effective models for learning for coaches, whose priority is to support their athletes in practical ways.

The interviews and questionnaire data gathered from the coaches in Study 2 on the third occasion, six months after they had received the PST program, indicated that the coaches chose certain techniques to apply when they went back to work with their athletes. The data collected from the coaches in Study 3 on the fifth occasion, again six months after they had been through the four day workshop, were consistent with this finding. One

factor that was identified as influential in the decision about what to implement was the inclusion of directly applicable techniques, such as relaxation, goal setting, or imagery techniques, in the workshop material. Another factor that emerged from the coaches' comments in their interviews was their expert judgement as coaches about what their players needed most in terms of PST. Further work on player priorities in PST, as perceived by coaches is needed to confirm the present results, although they are consistent with previous research (Hall & Rodgers, 1989; Moran, 1993). Goal setting, relaxation, and imagery have been reported as priorities by several groups of coaches from different levels and different cultures (e.g., Gould et al., 1987; Moran, 1993; Sontimuang, 1993; Sullivan & Hodge, 1991). Thus, it might be appropriate to spend more time on these topics and techniques, that are assessed to be high priority by advanced level coaches.

Coaches also found the four day intensive format of the PST program somewhat overwhelming. This suggests that the distributed approach might be more effective, especially if the intervals between sessions were far enough apart to allow coaches to implement the material from a particular session before the next. The following session might start with a review of the implementation and advice if it had not been achieved to the coaches' satisfaction. The in situ involvement of the psychologists, when the PST techniques were being introduced in training by the coach, to observe and

give guidance, would probably be even more effective. The coaches in several studies seem to have advocated more frequent involvement of the sport psychologist with the coach and athletes during implementation (e.g., Blinde & Tierney, 1990; Hall & Rodgers, 1989; Silva, 1984), so this approach should receive general approbation from coaches.

There is still relatively little information about the reactions of coaches to PST programs, both in terms of changes in attitudes and changes in behaviour. Observation and evaluation of coaches working on sport psychology techniques in real situations would be of value to practitioners, as a guide to the impact of the program, as well as having some research merit. It is likely that feedback to the coaches, based on observation of their activities in the real coaching environment would also be well received on the whole. This view is based upon the collective comments of the coaches in the studies discussed in the present thesis.

In summary, while further research is needed in all areas related to coach training in and implementation of sport psychology, it would appear that coaches do generally welcome sport psychology training in workshops. Sport psychologists should aim where possible to present these PST workshops in a more applied and realistic context. The direct involvement of athletes should be seen as an important adjunct to such presentations. Distributed training sessions, accompanied by hands-on work by coaches

with sport psychologists and athletes would also seem to be supported by the literature and the present thesis. These approaches can be implemented in Thailand, but in that country, a systematic coach education program is needed most of all.

Concluding Remarks

It is beyond question that coaches are playing an increasingly important role in elite sport. As sport becomes more professional, and many sports are now big business around the world, the need has grown for coaches to be professionally equipped across a range of areas in which athletes need to be prepared, not just to be knowledgeable about game techniques and tactics. In light of this, it is surprising that the amount of research that has been done on coaches' roles in the implementation of techniques in areas like sport psychology is very limited. It is suggested that this thesis has addressed issues of importance for all sport, especially the whole system of development of elite performers. It has thrown valuable light on the use of sport psychology by coaches in general and, more particularly, in the cultural context of Thailand. The situation is probably similar for other countries that are developing sport at the elite level, in areas like Asia, Africa, and South America. The message seems very clear that coaches at the elite level are eager to learn how to implement techniques in sport psychology that they recognise can enhance the performance of their

athletes. It is to be hoped that the findings here will lead to a substantial increase in the study of the implementation of sport psychology by coaches at all levels of sport in Western countries as well as in those parts of the world where sport, and as a consequence sport psychology, is in a more developmental phase.

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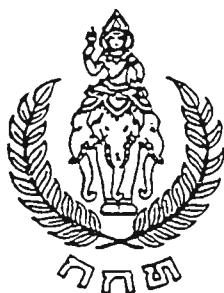
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Appendix List

- Appendix A Support Letter from The Sports Authority of Thailand
- Appendix B The Informed Consent Form
- Appendix C Questionnaire for Assessment of Sport Psychology
Knowledge, Interest, and Utilisation
- Appendix D The Semi-Structured Interview Questions
- Appendix E Structure of the Seminar on Psychological Skills Training
- Appendix F Support Letter from Srinakharinwirot University

Appendix A
Support Letter from The Sports Authority of Thailand



THE SPORTS AUTHORITY OF THAILAND
2088 Ramkhamhaeng Road,
Hua Mark, Bangkok 10240,
THAILAND.

No. 6201/ 2417

3 July 1991

Dear Mr. Namchai Laywal,

With reference to your letter dated 28 May 1991 informing of your research programme on "The Development of sport psychology in Thailand" proposed to be conducted soon in Thailand.

Considering that your research programme would certainly be beneficial for sport technology development in Thailand, particularly on sport psychology, The Sports Authority of Thailand are pleased to assure you our full cooperation on this programme.

Yours sincerely,

A handwritten signature in cursive script, appearing to read 'Somchai'.

Dr. Somchai Prasertsiriphan
Governor

Mr. Namchai Laywal
Victoria University of Technology
(Footscray Institute of Technology)
Department of P.E. & REC.,
P.O. Box 64, Footscray
Victoria 3011, AUSTRALIA

Appendix B
The Informed Consent Form

The Informed Consent Form

Victoria University of Technology
Footscray Campus

Department of Human Movement, Recreation and Performance

Project: Psychological Skills Training for
Elite Coaches in the Cultural Tradition of Thailand

Investigator: Mr. Namchai Lewan

1. I, a acknowledge that:

- I have read and understood the description of the experimental procedures,
- the possible effects of the assessment have been explained to me,
- I have been informed that I am free to withdraw from the project at any time,
- the project is for the purpose of teaching and research,
- I have been informed that the confidentiality of the information I provide will be safeguarded.

2. To the best of my knowledge there is no reason why I should not take part in this investigation.

Signed:
(.....)

Date

Appendix C
Questionnaire for Assessment of
Sport Psychology Knowledge, Interest, and Utilisation

Questionnaire for Assessment of
Sport Psychology Knowledge, Interest, and Utilisation

This questionnaire is designed to assess knowledge of, interest in, and utilisation of sport psychology by Thai elite coaches

There are three main questions in this questionnaire. For each topic in each main question, please circle the number 1 to 7 which indicates your level of knowledge of, interest in, or utilisation of sport psychology, as indicated by the question heading.

Question 1: Subjective Assessment of Knowledge of Sport Psychology

How much do you know about the use of each of the following applied sport psychology topics/techniques in coaching?

	very little			very much			
	*						*
Motivation.....	1	2	3	4	5	6	7
Goal setting.....	1	2	3	4	5	6	7
Stress Management.....	1	2	3	4	5	6	7
Anxiety and Arousal.....	1	2	3	4	5	6	7
Relaxation.....	1	2	3	4	5	6	7
Imagery.....	1	2	3	4	5	6	7
Confidence.....	1	2	3	4	5	6	7
Self-talk.....	1	2	3	4	5	6	7
Self-thought.....	1	2	3	4	5	6	7
Attention and Concentration.....	1	2	3	4	5	6	7
Energising and Re-energising.....	1	2	3	4	5	6	7

Question 2: Self-Reported Interest in Sport Psychology

How interested are you to learn about each of the following applied sport psychology topics/techniques?

	very little				very much		
	*					*	
Motivation.....	1	2	3	4	5	6	7
Goal setting.....	1	2	3	4	5	6	7
Stress Management.....	1	2	3	4	5	6	7
Anxiety and Arousal.....	1	2	3	4	5	6	7
Relaxation.....	1	2	3	4	5	6	7
Imagery.....	1	2	3	4	5	6	7
Confidence.....	1	2	3	4	5	6	7
Self-talk.....	1	2	3	4	5	6	7
Self-thought.....	1	2	3	4	5	6	7
Attention and Concentration.....	1	2	3	4	5	6	7
Energising and Re-energising.....	1	2	3	4	5	6	7

Question 3: Self-Reported Utilisation of Sport Psychology

How much do you use the following applied sport psychology topics/techniques in your coaching?

	very little					very much	
	*					*	
Motivation.....	1	2	3	4	5	6	7
Goal setting.....	1	2	3	4	5	6	7
Stress Management.....	1	2	3	4	5	6	7
Anxiety and Arousal.....	1	2	3	4	5	6	7
Relaxation.....	1	2	3	4	5	6	7
Imagery.....	1	2	3	4	5	6	7
Confidence.....	1	2	3	4	5	6	7
Self-talk.....	1	2	3	4	5	6	7
Self-thought.....	1	2	3	4	5	6	7
Attention and Concentration.....	1	2	3	4	5	6	7
Energising and Re-energising.....	1	2	3	4	5	6	7

Appendix D

The Semi-Structured Interview Questions

The Semi-Structured Interview Questions

The Three Original Interview Questions

Note: The following three interview questions are used for every assessment with all coaches in this project.

- (1) What sport science do you use in your coaching?

- (2) What are your feelings about using other new sport sciences from Western countries?

- (3) What is the daily practice routine you give your athletes

Additional questions for Immediate Postprogram Interview

Note: These following additional interview questions are added after the three original questions, for use with the Experimental group only at the Immediate Postprogram stage in Study 2, and use with the Control group only at the Immediate Postprogram stage in Study 3.

- (4) What is your feeling about this applied sport psychology program?

- (5) What would you think if this applied sport psychology program was presented to all coaches in Thailand?

- (6) Do you have any plans to utilize psychological skills training in your coaching?

The Additional Interview Questions for Six Month Delay Interviews

Note: These following additional interview questions are added after the three original questions, for use with the Experimental group coaches only at the Six Month Delay Interview in Study 2, and use with the Control group only at the Six Month Delay Interview in Study 3.

The following questions are combined when interviewing coaches.

- (4) Have you used sport psychology in your coaching for the last six months?

- (5) Do you have any suggestions or any problems in using sport psychology techniques?

Appendix E

Structure of the Seminar on Psychological Skills Training

The educational Seminar on
Psychological Skills Training (PST)
Victoria University of Technology and Srinakharinwirot University

Day	Topic	Activity
<u>Day 1</u>		
Morning:	Introduction to sport psychology & Psychological Skills Training (PST) Stress management.	Lecture/video Lecture/discussion
Afternoon:	Basic model of PST Goal setting	Lecture/discussion Lecture/workshop.
<u>Day 2</u>		
Morning:	Anxiety and arousal & Test of state and trait anxiety	Lecture/test
Afternoon:	Relaxation & meditation	Lecture/workshop
<u>Day 3</u>		
Morning:	Imagery	Lecture/workshop
Afternoon:	Attention & concentration	Lecture/discussion
<u>Day 4</u>		
Morning:	Confidence	Lecture/discussion
Afternoon:	Coaches assessment	Interviews & questionnaires

Note: Day 5, Continue coaches assessment with the interviews and questionnaire.

Appendix F

Support Letter from Srinakharinwirot University

RECEIVED 19 JUL 1991

Office of the President

Srinakharinwirot University
Central Campus at Prasammit
Sukhumvit Road Soi 23
Bangkok 10110, THAILAND.



TEL: 2584006, 2580310-3 EXT. 184 T.L.X. 72270 UNCSRN TH FAX: (02) 2584006

July 8, 1991

Director
Victoria University of Technology
(Footscray Institute of Technology)
Department of PE and Rec
P.O. Box 64, Footscray
Victoria 3011
Australia

Dear Sir:

Asst. Prof. Namchai Lewan of the Department of Physical Education, Faculty of Physical Education, Srinakharinwirot University, is currently pursuing a doctoral degree in Sport Psychology at Victoria University of Technology. Asst. Prof. Namchai has proposed a research topic on the development of sport psychology in Thailand. In order to conduct this research, it is proposed to establish a programme to provide information on the application of sport psychology in the coaching process to sports coaches. Asst. Prof. Namchai has requested permission from Srinakharinwirot University to use the University's facilities and equipment in the conduct of the research.

Srinakharinwirot University hereby declares that this request is approved and that the University is pleased to cooperate in the use of equipment and facilities to facilitate the success of the research of Asst. Prof. Namchai.

Srinakharinwirot University earnestly hopes for the consolidation of continuing cooperation between our two institutions.

Yours sincerely,

A handwritten signature in cursive script, reading "Chatri Muangnapoe".

Chatri Muangnapoe
President

CM/ab

