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THE UNIVERSITY OF ALBERTA

PERCEIVED FACTORS IN HOCKEY COACHING EFFECTIVENESS

by

DENNIS ROSS ZUKIWSKY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE DEGREE OF

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Larry L. Brancheau
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Alton T. Olson

Murray K. Smith

Date September 26, 1985

DEDICATION

To my wife and best friend, Gloria, for your love, support, and encouragement.

ABSTRACT

The purpose of this study was to determine the factors that contribute to hockey coaching effectiveness, how hockey coaches perceive these factors, and how hockey coaches go about improving their coaching abilities.

This study was based on the premise that, in order to develop a better understanding of hockey coaching effectiveness, it is important to study and recognize what "good" hockey coaches think and do. The "good" hockey coaches used as a sample for this study were 110 Level IV coaches from the Alberta Amateur Hockey Association and four Canadian Olympic Team hockey coaches.

The sample group was given a test battery during a 1984 summer coaching seminar and a follow-up questionnaire at the end of the 1984-1985 hockey season.

The results of the study concluded that:

1. Although a well-rounded personality would presumably be a definite asset in improving a coach's overall effectiveness, the results of the one-way analysis of variance between the Level IV coaches' personality types and their coaching successes showed no significant relationship ($p = .05$).

2. The skills, knowledge, and attitudes (determinants) considered to be most important to hockey coaching effectiveness appeared to be those factors that blended communication, teaching skills, and the psychology of coaching with those of technical knowledge.

3. Coaching effectiveness cannot and should not ever be based only on a coach's won-loss data. Coaching effectiveness must revolve around the coach's ability to prepare the individual and the team to

perform to their potential, and to encourage improvement, effort, cooperation, and personal development of athletes under his/her care.

4. Those coaches who were involved in this study and who have committed large amounts of energy and time to the coaching program consider their development and expertise on the determinants of coaching effectiveness to be quite high and almost equal to the development of the expert panel.

5. The National Coaches Certification Program hockey instruction clinics are perceived to be the most important source of information used as means to improving knowledge about hockey coaching. Other highly rated sources included reading hockey books, just thinking about hockey, and talking with coaches of other teams.

Concluding the study were implications [illegible] the utility of the results in understanding coaching effectiveness and recommendations for further research.

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This page affords the rare opportunity to say thank you to those individuals who have assisted in the development and completion of this research.

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STATEMENT OF THE PROBLEM

Introduction

As an instructor in the National Coaches Certification Program since 1977, the most common questions asked this researcher while conducting clinics across Western Canada were: "How can I be a more effective coach and what is the most important factor in being an effective coach?" The purpose of this study was to answer these two questions.

The popularity of hockey in Canada has been unrivalled by any other sport. Canadians from all walks of life have been involved in playing, coaching, administrating, sponsoring, and watching the game of hockey. Whether casually aware of the sport or fanatically involved, the impact of hockey on Canadians has been immeasurable. John Kieran (1937) best summarized the feelings of many Canadians in his poem, "Give me Hockey, I'll Take Hockey Any Time."

> But take all the most exciting parts of football, baseball, fighting, and then mix them up to make a game sublime, serve it up with lots of ice, you don't have to ask me twice, give me hockey, I'll take hockey anytime. . . .

The game has also played an important part in the socialization process of many young Canadians. The coach has been at the center of this process. He or she has been entrusted to build character, teach the physical and mental

skills necessary to play the sport, and, above all, to volunteer hundreds of hours of time attempting to fulfill the expectations of the parents and the community. All too often the coach has been considered responsible for the team's and the individual's successes and failures. The measure of a coach's effectiveness has all too often been his or her won-lost record.

The Canadian Amateur Hockey Association's Level III Coaching Manual (1976) suggests that the hockey coach, through his or her many interactions with the athlete, has a tremendous effect on both the athlete's playing performance and personal development. Even though the game of hockey has played an important part in the lives of so many Canadians, little has been done to understand the impact of coaching on the game.

Hockey Canada was established in the late 1960's as a joint venture between the National Hockey League and the federal government to develop and promote our nation's involvement in international hockey. As part of its development programs, Hockey Canada began holding coaching clinics in 1971. However, it was not until the hockey showdown of 1972 between Canada and the Soviet Union that an outcry arose across Canada for a reorganization of its hockey coaching programs. Hockey Canada and the Canadian Amateur Hockey Association, through its Hockey Development Council, instituted a National Coaches Certification program in 1973. This program has been built primarily on the basis of experts'

prescriptive statements and personal opinions of the way in which coaches ought to play their roles. These new programs included many descriptions of the technical aspects of the coaches' roles, such as: (a) the organization of practices and games; (b) pre-season preparation; (c) off-ice training; (d) international team strategies; (e) the philosophy of minor hockey; and (f) the psychology of coaching. The various programs included in the National Coaches Certification Program (1973) are very prescriptive and yet have had little research done to support their content. It is unfortunate that the game which plays such a significant part in so many lives has been so poorly researched by those involved in the program's development.

In order for hockey programs to continue to develop, a move toward a more scientific view of hockey coaching is important. If research can aid one to better understand the factors that make coaches more effective, the performances and personal development of athletes will continue to improve. More importantly, the existing knowledge of hockey coaching that is slowly developing in Canada will continue to grow. This continued research and development within our hockey programs may not produce a future generation of Wayne Gretzky's, but will most certainly improve the quality of experience of those players that are participating in the game.

Statement of the Problem

The purpose of this study was two-fold. One was to

determine what factors were commonly perceived to be important in hockey coaching effectiveness. Two was to determine what ways hockey coaches attempted to improve their coaching effectiveness.

This study revolved around the premise that in order to understand the complexities of coaching, one must study and understand what successful coaches think and feel about the sport of hockey. A total of 110 Level IV hockey coaches from the Alberta Amateur Hockey Association and an "expert" panel were surveyed in an attempt to help answer the question.

Sub-Problems

The following research questions were developed to assist in fully understanding the components of hockey coaching effectiveness:

1. Is there any relationship between the Level IV coaches' results on the Myers-Briggs Personality Type Indicator and coaching effectiveness as measured by percentage of total points attained in the 1984-85 season?
2. What skills, knowledge, and attitudes (determinants) do a panel of expert Canadian hockey coaches consider to be most important to coaching effectiveness?
3. To what degree do the expert coaches agree upon the priority assigned to each determinant of coaching effectiveness?
4. To what degree do the Level IV coaches agree

with the priorities assigned by the expert panel?

5. What degree of effectiveness do both the expert panel and the Level IV coaches believe/perceive they have presently obtained on the determinants of coaching effectiveness?

6. What is the relative importance to the Level IV coaches and the expert panel, of various sources of information as a means to improve knowledge about hockey coaching?

Need for the Study

In the National Coaching Certification Program's (1974, 1975) introductory pages; there is constant reference to the idea that the coach in Minor Hockey has a tremendous effect on the lives of the athletes with whom he or she interacts. The manuals imply that the coach can be effective in many ways. This intent is substantiated by researchers such as Straub (1978) who suggests that: "an understanding of general behavioral considerations, differences among people, as well as how to affect changes in people, is necessary for any coach to be consistently effective" (p. 257).

Receiving instruction from coaches who understand the psychological and physiological principles of coaching is critically important if young athletes are to fully benefit from their participation in sport programs. When attempting to maximize the beneficial effects of youth sports participation, the quality of adult leadership must be

children. Being as effective as possible should thus be the goal of every coach in youth sports.

Canada's Coaching Association (C.A.C.), in their text <u>How to be an Effective Coach</u> (1975), considers a coach effective if he or she uses the correct coaching methods and places the athletes' behavior in proper perspective during competition. Various components of effective coaching are listed in this text which was developed as a practical guide to coaching. This text uses a "how to" format to cover: (a) setting aims and objectives; (b) developing a program; (c) evaluating performance; (d) using audio-visual aids; (e) using medical facts, and (f) using physiological, biomechanical, and psychological knowledge. There is no mention as to how coaches perceive these factors or what importance they place upon them.

Studies on coaching effectiveness in Canada have been carried out in other sports (football, Naylor 1976; basketball, Horwood 1976; soccer, Gordon 1981) but little research has been done on hockey coaching. The above mentioned studies related coaching effectiveness and leadership. Danielsen, Zebart, and Drake (1973) and Danielsen (1974) studied hockey players' perceptions of their coaches. Both of these studies sought to understand coaching effectiveness by relating player perceptions of their coaches' and team successes. There have been no studies done on what hockey coaches perceive effective coaching to be, or on how hockey coaches improve their coaching effectiveness.

There is a general lack of information to describe the factors that make up coaching effectiveness at any level of hockey in Canada. By studying what "good" coaches do and discovering what their perceptions of coaching effectiveness are, it is hoped that the researcher can provide direction for future research. Also, by determining the importance that coaches place on the various determinants of coaching effectiveness, a priority list can be established for the direction and emphasis of hockey coaching programs. Planning and pursuing the development of these programs through research of this nature are the keys to maximizing the total development of young athletes.

Definition of Terms

The definition of terms provides a contextual definition of a number of the terms that are found throughout the study.

Coach - the individual who has the final decision in regard to team operations.

Level IV Coach - one who has completed the requirements of the first three levels in the National Coaches Certification Program. This coach has been recommended for Level IV by his or her community and provincial hockey organization.

Coaching Effectiveness - is the ability of the coach to prepare the individuals and the team to perform to their potential; coaching effectiveness is usually measured in terms of performance outcomes (wins vs. losses) and/or more subjective variables such as

improvement, effort, cooperation, and overall personal, social, and emotional development.

"Expert" Panel - a group of four Canadian hockey coaches who are or who have been coaches of the Canadian Olympic Hockey Teams of 1980, 1984, and 1988.

"Good" Coaches - these coaches in Minor Hockey that have attained fairly successful coaching records (games won-lost over their coaching careers) and whose main interest in coaching is to assist the players. The criteria used for selecting the Level IV coaches in this study would be an example.

Hockey Development Council - a group consisting of the technical Directors from each province, C.A.H.A. staff, and invited outside advisors who design the coaching programs for Amateur Hockey in Canada.

Hockey Levels - a term that is used to define the category or age grouping with which a coach is involved. These age group categories are defined by the Canadian Amateur Hockey Association.

Minor Hockey - those volunteer groups of individuals that organize and administer hockey at the national, provincial, and local level. The purpose of Minor Hockey is to give every youngster the opportunity to compete in his/her own age group, under controlled conditions, that are designed to teach the basic fundamentals of the sport of hockey while developing personal skills such as sportsmanship, cooperation,

and respect for authority (C.A.H.A. Minor Hockey Administration Guide, 1978).

Myers-Briggs Personality Type Indicator - a test battery originally designed by Katherine Briggs to determine the preferences individuals have toward their own perceptions and judgments. This personality inventory was developed to understand the way individuals like to look at things and the way they go about deciding upon things. Form G of the Indicator, which was used in this study, reflects preferences that the sample group indicated toward introversion, extroversion, sensing, and intuition.

National Coaches Certification Program - the coaching program of the Canadian Amateur Hockey Association.

Personality "Types" - the categorizing of indiviudals who demonstrate certain consistent patterns of behavior. These behaviors are usually labelled as traits (Myers, 1980).

Success - as referred to throughout this paper, is the winning of games or sporting events.

Delimitations

1. The survey group included those coaches who attended the 1984 Level IV Hockey Coaching Seminar held in Edmonton, Alberta, July 24-29, 1984.
2. The "expert" panel consisted of four of the coaches involved with the 1980, 1984 and 1988 Canadian Olympic Hockey Teams.

Chapter 2

REVIEW OF THE LITERATURE

In attempting to answer the proposed question, "What are the perceived factors in hockey coaching effectiveness?", the literature review was designed to provide as much background information on the topic as possible. For the purpose of this literature review, coaching effectiveness will be discussed in terms of what it is and the implications involved for coaching effectiveness when outcomes (winning vs. losing) are considered. The second section of this literature review describes the attributes of coaching effectiveness and then focuses on the four most commonly cited in the coaching manuals of the Canadian Amateur Hockey Association. These attributes are: communication, motivation, leadership, and personality.

What is Coaching Effectiveness?

Understanding why some coaches are more successful than others is difficult. Successful coaches, in terms of winning records and championships, are glorified by the media, fans, and players. The coaches who are less successful often leave the sport, move on to other levels or other teams, and are generally regarded as having failed in their duty. Bryden (1983) states that in hockey at all levels, Canadians have had a preoccupation with winning, which for too long has been the

criteria upon which successful coaching and playing has been based.

The objective definition of coaching effectiveness in Minor Hockey is the number of games won as opposed to the number of games lost. The subjective definition is the improvement, effort, cooperation, and positive personal development of the athlete. There is certainly much more to being an effective coach than just winning games.

Many researchers such as Smith (1984) suggest that those characteristics that are common amongst "good" coaches must be identified and understood if positive change is to occur in coaching programs. "What are the really good coaches out there saying and doing is what our research in coaching must find out" (M.F.R. Smith, personal interview, October 20, 1984).

Botterill (1980) suggests that coaching can have a tremendous effect on the personal growth and development of our athletes. He further adds that it is through continued research and study into coaching, especially in Minor Hockey in Canada, that our coaches will become more skilled and capable.

Research and study can only produce positive changes to a sport that has for too long been locked in tradition. Dryden (1983) describes the conservatism of hockey the "snowbankers" philosophy. "The boy becomes a man; the player a coach, a manager, a scout, a father; a game is passed on like tribal history, one voice, one mind. There was no bigger picture" (Dryden, p. 216). By finding out what "good coaches say and

do; by understanding the principles of growth and development; and by attempting change based on research and in-depth study, a better understanding of coaching effectiveness can be developed.

Coaching Effectiveness in Terms of Won-Loss Records

The winning of games or sporting events is often the public's criteria for coaching success. According to the following research, there are particular attributes of coaching effectiveness that contribute more to success in sport than others.

Singer (1977) in Figure 1 outlines the relationship of factors that contribute to team success.

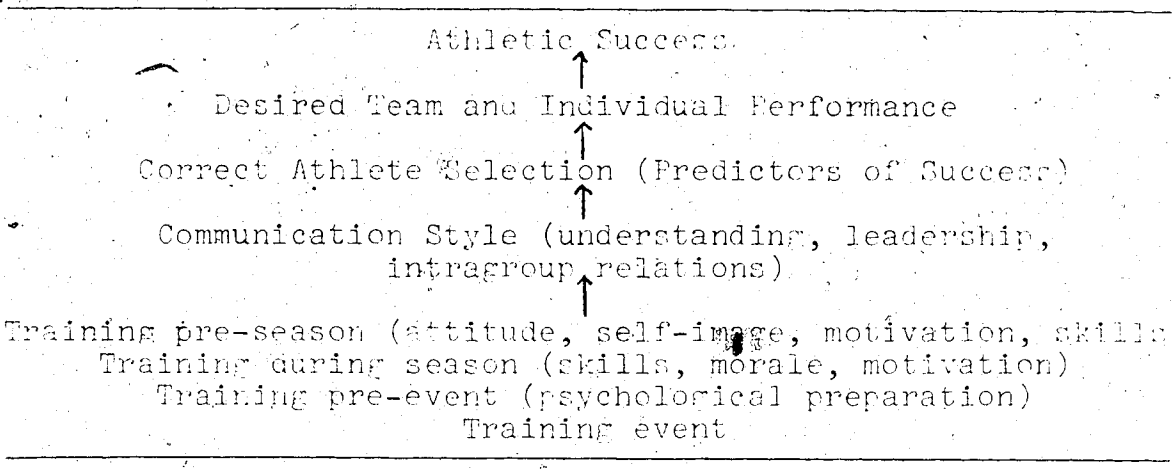


Fig. 1: Factors that Contribute to Team Success

Figure 2 is Singer's description of athletic success in more general terms. In describing these systems, he maintains that it is very important for the coach to consider how these systems function, how they interrelate and how they apply to different individuals. The coach, in order

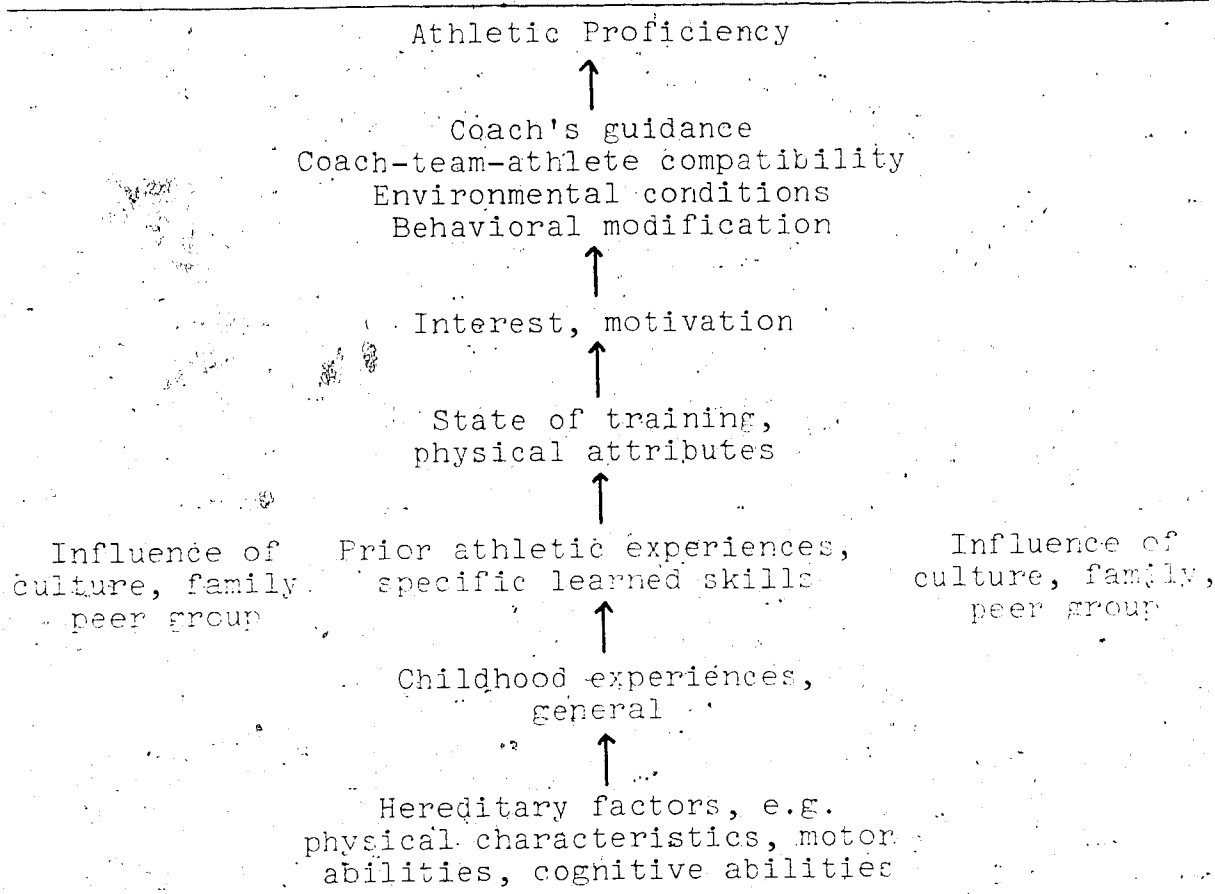


Fig. 2: Foundational blocks toward the achievement of excellence in athletics. (From Singer, Robert N. (ed.) The Psychomotor Domain: Movement Behavior, Philadelphia: Lea and Febiger, 1972.

to gain the most success from his/her efforts, must understand, "the information processing capabilities of human systems and the response potentials to these inputs" (p. 9).

Curry and Jiobu (1984) in studying successful (wins vs. losses) U.S. college football coaches found that their successes were not attributed to their psychology and character traits but to "social organization". They defined this social organization as being the overall operation of the athletic program itself. It included such factors: (a) as the amount of money for the program; (b) recruitment;

(c) assistant coaches; (d) alumni involvement and expectations; (e) prestige of the college; (f) practice organization, and (g) many other variables that all connect to the role of the coach.

Bird (1978) suggests that high school coaches who develop and understand group dynamics approach to coaching develop greater team cohesion and causal attribution perspectives. According to Bird, success in team sports depends upon three factors: (a) the coach maximizing the interpersonal relations of the group structure; (b) the group processes, and (c) his/her own leadership role.

Mechikoff and Kozar (1983) in a study of 30 successful coaches from a variety of popular North American sports, found that these coaches used a variety of psychological methods, techniques, and gimmicks to achieve their status as leaders in their own fields. These coaches were found to be highly intelligent, very goal oriented, and very committed to what sports competition could contribute to the athlete, school, and society in general. All of the successful coaches interviewed for this study used various principles of psychology associated with learning and performing of highly complex sport skills. Mechikoff and Kozar (1983) list some of these psychological skills that "mean the difference between winning and losing" (p. 114). They include: (a) mental preparation for games; (b) positive reinforcement; (c) selective reinforcement; (d) use of punishment; (e) goal setting; (f) understanding self-pride; (g) motivation;

(h) communication; (i) understanding "pain" as a perceptual factor, and (j) coping with anxiety and stress.

Alternative Views of Coaching Effectiveness

Coaching success to this point has been based on the winning of games or competitions. Can coaches be successful or effective even if the outcomes of the games are not victories or championships? A number of researchers (Botterill, 1980; Orlick and Botterill, 1975; Orlick, 1980, and Martens, 1978) suggest that children should be taught that success is found in striving for victory. The important concept is that success is related to effort.

Martens (1978) suggests two guidelines that coaches should develop in their young athletes. They are: reinforce or reward effort as much as you do results, and secondly, encourage effort - do not demand results.

In their research and findings, Orlick and Botterill (1975), Botterill (1980), and Orlick (1980) emphasize the concept that every young athlete can be a "winner" regardless of the outcomes if coaches, parents, and teachers provide the appropriate encouragement and learning conditions. Both authors stress cooperative games and cooperative approaches for young athletes. Martens (1978) best summarizes these approaches by stating: "the most important coaching product is not a won-loss record - it's the quality of the experience provided for the players" (p. 26).

The authors cited above direct their findings and

conclusions to young athletes but Martens (1978) states those same principles apply to developing success at the highest levels of sport. He cites John Wooden, the former great U.C.L.A. basketball coach as an example of the importance of stressing effort at all levels of sport.

> You can never find a player who ever played for me at U.C.L.A. that can tell you he ever heard me mention 'Winning' a basketball game. The only thing that I ever told them was that when the game is over, I want your head to be up, and that's for you to know that you did your best. This means the best you can do. That's the best; no one can do more. You made that effort (p. 25).

Melnick (1982), Singer (1977), and Donahue (1980) found that many of the failures coaches experience are the result of a lack of awareness of the internal and external forces which cause teams to move, act, react, change, and become.

Melnick (1982) found that understanding group dynamics and that being aware of those factors that impair sport group performance can make coaches more effective. Melnick cites these six barriers: (1) group think-alike; (2) formation of sub-groups; (3) negative atmosphere; (4) psychological homogeneity; (5) value and norm incompatibility, and (6) unevenly distributed leadership roles, as factors impeding success on sport teams.

Donahue (1980) and Singer (1977) cite similar problems that impose barriers on team success. Donahue (1980) lists the following as barriers to team success: (a) lack of individual attention; (b) lack of discipline; (c) lack of psychological approaches to problem-solving; (d) lack of patience, and (e) poor role-modeling, while Singer (1977)

cites the lack of individual attention, and the lack of understanding of group dynamics, leadership, and motivation as the major stumbling blocks to team success. Both authors suggest the better use of understanding of the psychological factors in athletics as the key to becoming more effective coaches.

Understanding the attributes of coaching effectiveness can improve the quality of the experience that the coach can provide. Coaching effectiveness should be viewed from a won-loss perspective and the total personal development of the athlete. Mechikoff and Kozar (1983) concluded that those coaches who understand their athletes' abilities, limitations, anxieties, wants, and needs, and who systematically and intuitively use established psychological guidelines in teaching and coaching, become most successful. "The end results are more athletes performing better and coming closer to reaching their potential" (p. 122).

Summary

In summary, coaching effectiveness thus becomes the ability of the coach to prepare each individual and the team to perform to their potential. The preparation and performance of the athlete and the team must focus upon two interrelated areas: the first being the provision of a quality experience in the sport that will foster the athlete's personal development; the second focuses upon the achievement aspect where success is based on such factors as

effort, improvement, and cooperation as well as the outcome of the activity.

The Attributes of Coaching Effectiveness

This section of the literature review describes the attributes or characteristics that contribute to coaching effectiveness. As mentioned earlier, the coaching manuals of the Canadian Amateur Hockey Association most commonly cite communication, leadership, motivation, and personality as factors that can make a coach more effective. Before reviewing these four important attributes in greater detail, a number of related attributes of coaching effectiveness are reviewed.

Vince Lombardi, the famous professional football coach, often stated that effective coaching was made possible by " . . . winning the hearts of the people you led" (cited in Leggett, 1982, p. 10). Lombardi often alluded to the importance of personality as a factor in coaching success.

Don Schula (1984) states that: "a coach cannot effectively teach discipline, lead by example, or give direction that young players need unless they have credibility and the ability to communicate" (p. 18). He further adds that in order to attain credibility, a coach must demonstrate the following four factors: (a) a sound knowledge of the game; (b) a good attitude; (c) friendship and sincerity, and (d) that he conducts himself as a professional at all times.

Purh (1975), as cited in How to be an Effective Coach, suggests that the coach's determination, organizational abilities, enthusiasm, consistency, and, most importantly, flexibility (willingness to change) are the key ingredients to successful coaching. Gordon (1981), in surveying a number of professional soccer coaches, had the following responses as attributes of effective coaching: (a) motivation of players; (b) selecting of personnel; (c) maintaining team harmony; (d) organization and preparation of games and practices; (e) a good public relations image; (f) personality; (g) sound understanding and knowledge of the game; (f) a love of the game, (i) flexibility in tactics; (j) flexibility in player relations; (k) maintenance of discipline, and (l) good communicative skills.

The United States Judo Association in 1977 conducted a survey of their top-ranked Olympic and National team coaches regarding the attributes or characteristics a coach should posses in order to be effective. The most commonly cited attributes were: (a) the ability to be able to transmit knowledge (communicate); (b) a good knowledge of the sport; (c) be well organized; (d) be an established leader in the field; (e) be able to provide motivation; (f) have the ability to assess and evaluate athletes; (g) be flexible and able to innovate; (h) be dedicated; (i) be dynamic, and (j) have the ability to command respect from his or her athletes.

Danielsen (1974) concluded in his study of minor hockey players and their coaches that:

> Generally speaking, the absence of pressure, interpersonal concern, and positive attitude toward athletes appears to be much more effective in hockey coaching than do dominating impersonal, prescriptive approaches (p. 101).

Glenross (1978) suggests that in order for coaches to teach skills and maximize player interest in learning, they must understand the cognitive levels of their athletes and develop programs to cater to that particular learning level. "When considering the transfer of knowledge and skills, we must consider the level of learning and the performance level of the athlete" (p. 184). Glenross suggests a sound understanding of the principles of psychology, physiology, biomechanics, and growth and development of young athletes, if the coach is to be as effective as possible.

McDowall (1980) adds to this discussion of the attributes of coaching effectiveness by stating that effective coaches "think team". For McDowall, the "think team" concepts revolve around: (a) developing goals and objectives; (b) discipline, and (c) attitudes toward team success. This "think team" concept holds the key for individuals to attain their own personal goals and objectives in a cohesive, cooperative, and motivating environment.

A review of the four most commonly cited attributes of coaching effectiveness is now presented.

Communication

The determinants of coaching effectiveness that the 'expert' panel developed for this study are all, in some way, related to communication. There is little doubt that without communication there can be no interaction and without interaction coaching would become non-existent. Often in sport one hears the following expressions: ". . . I just cannot communicate with the athlete" or "there is a wall between us." These two expressions typify one of the major stumbling blocks in the athletes' and coaches' relationship in contemporary sport. That stumbling block is effective communication.

The Canadian Amateur Hockey Association's Level III manual (1975) described communication as the key to instruction and the learning process. This publication suggests that in Minor Hockey, communication is vital to the development of playing skills, attitudes, and the overall personal development of the young athlete. "The coach who possesses good communication skills becomes more effective in all aspects of his coaching" (p. 25). Communication throughout the manual is described as teaching and listening effectively, consistently, and constantly.

Fuoss (1981) in his book, Effective Coaching, describes communication:

> The methods or means he or she uses to convey ideas and concepts are as important as is how, he or she teaches or coaches, which is the art of coaching. It is through the learning process that the coach's goals for

> his or her program and his or her sport are transmitted to others. Coaches are teachers, coaching is teaching, and teaching is the management or guidance of learning (p. 111).

Tutko (1971) talked of communication as being essential to coaching efficiency. He divided communication into information-giving and information-getting, believing the "good" coach seeks feedback from the players.

Information-Giving

Gowan (1975) suggests: "in order for a coach to be able to give information, he must be knowledgeable and aware of the subject matter of the sport itself" (p. 5). Gowan further states that coaches must decide what they know and what they need to know. Information may be required on the characteristics and needs of the athlete, training methods, available facilities and equipment, competition, and so on. Gowan further suggests that:

> Coaching knowledge comprises facts, principles, and skills selected by the coach from other disciplines; physiology, psychology, sociology, and the like. Not all of this is needed at any one stage of athletic development; the coach uses what is applicable at a particular time (p. 5).

According to Gowan, information may come from a variety of sources that include; (a) critical observation at games and practices; (b) films and other forms of replay; (c) technical sports books and magazines; (d) clinics, workshops and symposiums; (e) communication between the athlete and coach (feedback); and (f) coaching research. Gowan believes that once a coach has gained this technical knowledge, then he is able to pass it on to his or her

learner.

One of the most significant studies on coaching and the importance of knowledge in coaching was done by the late Lloyd Percival. Percival (1971) found that coaches rated themselves higher than the athletes did when both groups were asked to evaluate the coaches' overall effectiveness. This study is significant because communication and general knowledge were two of the evaluated components. In terms of the importance of knowledge, the study indicated that the athletes were more impressed, showed more confidence in, and rated higher coaches who were knowledgeable and knew the scientific reasons for systems, techniques, and training procedures.

In studying the giving of information, Danielsen, Zebart, and Drake (1975) found through their study that communicative behavior was emphasized throughout the coaching environment. As recognized by Danielsen et al., the majority of behaviors observed by the athletes appeared to be related to the passing of information to and from the coach.

Effective communication in the C.A.H.A. Level III manual revolves around the use of verbal direction and demonstrations. The manual stresses that when evaluating verbal instruction, simplicity, explicitness, player attentiveness, point in practice where it was used, and positiveness should always be the criteria for such evaluations. Donahue (1980) feels that the most effective

method for communication is using verbal instruction and demonstration on day one and working on the material on day two. Donahue believes that the coach must always speak softly when instructing but be sure that the athlete is attentive and able to comprehend the material.

Another important aspect of information-giving is that of feedback. Rushall (1975) states that; "providing feedback is the most important feature of coaching . . . unfortunately it is one of the least emphasized" (p. 116). Rushall defines feedback as the information provided by the coach to modify the technique of his or her athlete. He adds that this information must be provided as soon as possible after a response (performance) has been given.

Complementing Rushall's emphasis on the importance of the coach providing immediate information are recent studies done by Crossman (1984), Davies, 1984, Klavora (1984), and Smoll, Smith, and Curtis (1983). In each of these studies immediate feedback on athletic technique improved individual or team performance and/or behavior.

Crossman (1984) suggests the use of evaluative checklists in order to evaluate performance correctly and provide accurate, logical, and systematic feedback. Using evaluative checklists to monitor the performance of a number of young swimmers, Crossman found that feedback given in a positive, constructive manner improved performance and motivated the athletes to work harder. Klavora (1984), in studying effective coaching for rowing, concluded that:

". . . feedback is more than just the coaches' instructions. Feedback is also provided by the internal information . . . related to the athlete's feelings and his kinesthetic systems" (p. 38). Klavora suggests that the coaches' instructions, corrections, explanations, interpretations, comments, or notes on the athlete's efforts, either in practice or in competition, can systematically shape his or her efforts.

Davies' (1984) research on effective communication with figure skaters and Smoll, et al., (1978) with Little League baseball players found that the provision of positive, immediate, and systematic feedback improved the athlete's level of performance, self-esteem, and work ethic.

Effective information-giving requires that the coach is knowledgeable and is able to transfer his or her intended messages as efficiently as possible. The guidance of learning requires both good teaching and good coaching skills.

Information-Getting

The emphasis on this discussion of communication has been based on the coach's ability to obtain and analyze knowledge, and his or her need to shape the athlete's behavior through reinforcement and feedback. Communication is a two-way process and this discussion will center on the literature that relates to the coach getting information from his athletes in order to improve his/her coaching

effectiveness.

Botterill (1980) suggests that the use of psychology in coaching, if properly applied toward maximizing the personal growth and development of athletes, can also maximize the athlete's performance. "Planning for and pursuing the total development of young athletes is not only morally the correct thing to do, but likely the only way to truly maximize their potential" (p. 12). In his study on goal-setting Botterill (1977) emphasized the use of goal-setting done together by the athlete and coach as a means of developing positive team atmosphere. This positive team atmosphere improves communication and becomes a strategy for improving the athlete's overall ability.

Botterill (1980) suggests that coaches must involve their athletes in seasonal planning as one of the first steps in "getting information". He advises that coaches plan and conduct a number of planning sessions at the beginning of the year for the purpose of involving the athletes in creating and compiling a comprehensive list of goals and intentions. By involving the athletes in the process of goal-setting, the coach establishes a cooperative, motivational climate amongst his or her players. If the coach establishes this relaxed communicative atmosphere early in the season, "the athletes should feel free and functional in contributing to future discussions and team meetings" (Botterill, 1980, p. 14).

McDowall (1980) in a study done on professional hockey

teams, found that teams who used such collaborative techniques in goal-setting and cooperation were more successful in terms of games won. McDowall also found that the players were more receptive to cooperative efforts and team-planning concepts if the coaches established positive relations with them early in the season. Bird (1978) concluded from her research on interacting (teams that work together) and co-acting (teams which individuals remain independent from one another while pursuing a common goal) teams, that realistic goal-setting and team contingency reinforcement improved team cohesion, member satisfaction, and group motivation. Orlick (1980) uses the concept of team harmony to support Botterill, Bird and McDowall's suggestions for receiving information and improving team communication. Orlick, in discussing team harmony, feels that it is one of the most satisfying experiences an athlete or coach can have. "Good communication, respect for one another, a feeling of closeness, mutual encouragement, and a friendly atmosphere all make for better workouts, and more satisfying competitions" (p. 220). Orlick feels that merely being together on a team does not guarantee effective communication. Botterill suggests that: (a) the coach must attempt to develop this communication by planning for the season with his athletes; (b) be aware and responsive to their feelings; (c) solve problems when they are small, and (d) most importantly, make an effort to communicate with each one of his or her athletes on a regular basis.

Orlick summarizes the importance of developing team harmony by stating that:

> There are at least three ways to improve interpersonal relations with team members: work on improving your (coach's) communication skills, try to help each athlete on an individual basis; and work on improving your (coach's) own self control (p. 222).

Tutko (1971) defines these types of communication-getting processes as the "open door policy". This "open door policy" is one in which players feel free to approach the coach and discuss any problem in confidence. Tutko feels that the objective of such meetings are to find solutions to the athlete's problems or concerns but also suggests that, "just listening without offering solutions to those problems, can be helpful to the player" (p. 74).

In order for coaches to communicate as effectively as possible, sound principles of psychology and guidance must be employed. Involving the players in goal-setting and team discipline, developing team harmony, and showing concern on the athlete's behalf can all greatly improve the learning environment.

Leadership

The C.A.H.A. National Coaches Certification Program (1971) in defining the role of the coach, lists leadership as one of the most important factors in the total development of the minor hockey player.

> The leadership a coach provides is very important to young hockey players because this reflects his code of ethics as well as his attitude towards sportsmanship. A good coach leads by example, therefore he should set

> the best example possible. Each coach should coach to win, and have his boys play for the same reason. This winning spirit will allow the team to meet competition more favorably. He should show leadership qualities which will allow his boys to gain the qualities of pride and achievement. He should also show his players a sense of humility, both in winning and losing, for this will allow each player to accept his achievements and downfalls in a mature manner. Humility breeds stability, and stability breeds success. If the coach leads the boys in ways which make them more mature in their actions and attitudes, then they will be better prepared for life. Each coach can attain this goal, but only if he sets a good example as a leader (Level II, p. 25).

The coach in Minor Hockey is able to further develop his/her leadership role by using a collaborative coaching style. Cooperative coaching contrasts with the traditional autocratic model and is characterized by shared responsibilities, joint goal-setting, and group consensus toward problem-solving. Leadership in these terms thus becomes the influence that a coach has on his or her players. Stogdill (1974) describes the coach's leadership role as the "ability to influen[redacted]ther persons' behaviors and the capacity to structure social interaction systems to the purpose at hand" (p.81). Straub (1978) suggests that effective leadership by a coach, " . . . should take into consideration the personal characteristics of himself/herself, the players, and the nature of the specific situation" (p. 257). Sage (1975) sees effective leadership in sport following the industrial example of worker-centered task orientation, combined with non-emphasis on worker input into the decision-making process. Providing leadership for sport in the 1980's at the minor and

professional levels of coaching has become a complex study of social interaction. In order to improve his or her coaching effectiveness, the coach must develop a unique style that provides his/her players with a positive role model while incorporating an understanding of the social complexities of sport itself.

Theories of Leadership in Sport

Leadership in sport has been based on numerous theories and models. Ogilvie and Tutko (1966), Cratty (1967), and Kane (1979) developed approaches of understanding leadership by studying the universal "trait" approach of leaders. A second approach to studying leadership was based on the study of universal behaviors of coaches (Halpin and Winer, 1957; Cartwright and Zander, 1966, all cited in Carron, 1980). Both of these approaches were based on the belief that coaches as leaders can be characterized by a unique set of tendencies in their behaviors and in their personalities. Carron (1980) adds that these theories have received a great deal of criticism for their inflexibility, inconsistent conclusions, and lack of a general framework from which research is to emanate.

A third theory of leadership effectiveness is based upon examining behaviors of leaders in relation to various situation factors. These contingency or situational models of leadership, as developed by Fiedler (1967) and House (1971) studied such factors as task structure, group

atmosphere, leader power, and follower satisfaction. Fiedler (1967) classified the favorability of situations based upon: (1) interpersonal relations of the group members; (2) task structure, and (3) power of the leader. This provided eight ideal types of situations ranging from a highly favorable one with positive group relations, high task structure and high power to a highly unfavorable one with poor group relations, low task structure and low leader power. Fiedler developed a number of scales by which group members and leaders evaluated each other, thus determining the conditions under which leaders were most likely to be effective, and the factors that determine degrees of leader-personnel relations. Fiedler's model originally was used in military and industrial settings and indicated the effectiveness of task-oriented leaders. Fiedler's scales would seem very appropriate for use in studying sport leadership because of the high task-orientations that are involved in coaching. However, a number of studies (Naylor, 1976; Bird, 1977; Horwood, 1979; Gordon, 1981) found little support for the use of his leadership scales. These researchers found that the use of scales that Fiedler had developed were highly speculative and that the test only measured leader-member relations, task structures, and position power. Fiedler's theory of situational leadership fails to recognize such leadership factors as stress, personal experiences of players and coaches, background of players, and the uniqueness of individual player-coach interaction (Fiedler, 1967).

House (1971) places more emphasis on leader behavior in his model of leadership. This contingency model also lacks flexibility in design and fails to recognize the subjectivity of dealing with interactions in sport.

A more recent model for studying leadership in sport is provided by Chelladurai's (1978) interactional approach. The gathering of data is facilitated through reports on indices of effectiveness from both the players and the coaches. These studies look at leadership in coaching in both an objective and subjective setting. The behavior of the leader is seen as being jointly determined by the leader, the group, and the situation. Group satisfaction and group performance are measured by these behavior outcomes. Chelladurai's (1978) use of this model emphasizes tasks and interpersonal relations similar to Fiedler but also recognizes situational factors and personality.

Although Chelladurai's Multidimensional Model of Leadership (as depicted in Figure 3) was developed in 1978, earlier studies by Percival (1971), Danielsen, Drake and Eckart (1973), Danielsen (1974), and Scholten (1978) used various aspects of this model. In studying coaching leadership, all four studies concluded that coaches who were relationship-oriented were found to be more effective in terms of how the players rated them in various situations and how supportive the coach was to each player's efforts.

However, Danielsen (1974) concluded that coaches who were goal-oriented as opposed to coaches who were

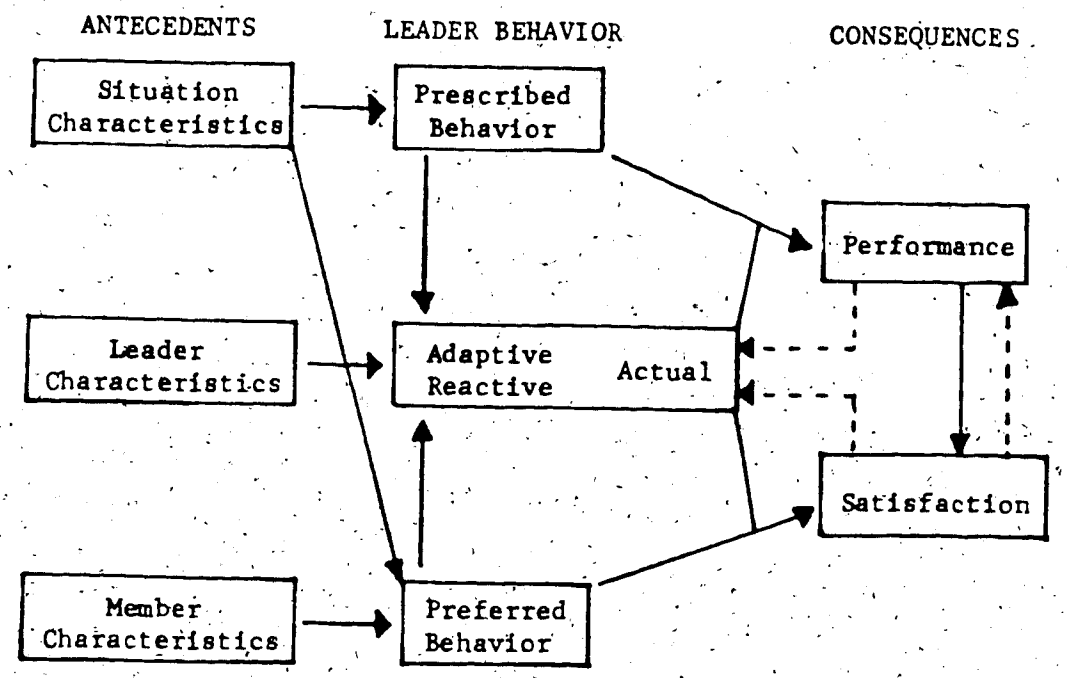


Fig. 3: A Multidimensional Model of Leadership (from Chelladurai (1978).

relationship-oriented had more success (won-loss records), while their players reported more goal direction and high levels of motivation and personal satisfaction. Percival (1971) best describes the leadership roles found in these four studies:

> Athletes apparently like coaches who are 'with it' from the viewpoint of understanding their social philosophy, dress, music, etc. (to know how they feel as opposed to how the coach feels), but they don't want the coach to be 'with them'. They want a leader who is interested in their problems but who doesn't try to be 'one of the boys' (p. 325).

In all of these studies the leader's behavior was the result of many factors. In another related study, Curtis et al., (1979) found that coaching behavior and team perception determined the coach's impact on team morale. Winning coaches were found to be less punitive and more supportive than losing coaches. These findings were a result of the analysis of understanding the interrelations of the coach, player, and situation.

A Leadership Scale for Sports based on the interaction model was developed by Chelladurai and Saleh (1978). The scale consists of a training or instruction factor (a task) of the coach who is seeking to improve his athletes' performance levels; two decision-making factors (autocratic or democratic), and two motivational factors (social support and positive feedback). This leadership scale provides a multi-dimensional approach to studying leadership in a much more holistic manner than the approaches used in earlier studies. Recent studies by Horne (1982) and Chelladurai

(1984) have reported that discrepancy between athletes' perceptions of coaching behaviors and their preferences for specific behaviors were significantly correlated with their satisfaction with leadership, team performance, and overall involvement.

This study, in attempting to define coaching effectiveness, employs the multidimensional approach to leadership by attempting to understand the many factors that involve the coaches' leadership perceptions. The athletes, however, are only indirectly involved through the coach's won-loss record.

Leadership and Coaching Effectiveness

The components of effective leadership in sport are affected by a coach's physical, intellectual, and emotional characteristics; the effects of the environment on his or her personality, and by situational variables (Williams and Wassenaar, 1975). When there is a blend of these hereditary, environmental, and situational factors, maximum coaching leadership occurs. Effective leadership, according to Straub (1978) is characteri by making the most of personal abilities, bringing out the be in one's athletes, cooperation, mental alertness, decisiveness, and accomplishment of tasks.

Lerrett (1982) adds an interesting twist by suggesting that when evaluating the leadership of the coach, "one might begin by observing how the athletes look at him when they

are in a tough losing situation" (p. 10). If he is still their leader Leggett suggests that he "has it made" as a technician and as an individual.

Mao Tse Tung believed that great leadership is evident when "the people believe they have done it themselves." Leadership in coaching revolves around the same ideals because great coaches must have great athletes in order to be successful. Vince Lombardi (cited in Leggett, 1983) best sums up leadership in coaching: "leadership or teachership is not so much leading as having the people led, accept you. You know how you do that; you've got to win the hearts of the people you lead. . . ." (p. 10).

Leggett sums up leadership in the following manner; a coach who exemplifies dedication, strong personality, the ability to put things together, and who is able to give his very best effort at all times will become an effective leadership model.

Motivation

For the purpose of this study on coaching effectiveness, motivation was described as the ability to get players to set high personal standards of performance, and to produce consistently high efforts to achieve them (Martin and Hrycaiko, 1983). Carron (1980) views motivation as a necessary but not sufficient component of sport participation. Carron, however, acknowledge that skill is essential to success in sport but without motivation, skill is of little value.

Motivation and Performance

Singer (1978) used this simple equation to illustrate the importance of motivation:

PERFORMANCE (behavior in a situation) = LEARNING (past experiences) + MOTIVATION

Singer states that motivation by coaches in sport usually consists of the providing of reinforcement. The more reinforcement the athlete receives, the higher will be the amount of effort produced. He suggests that this reinforcement can be of four types: (a) tangible rewards such as badges, money, stickers, etc.; (b) social rewards such as coach and peer approval, coach attention, social recognition; (c) performance information such as shooting accuracy, and (d) internal reinforcers that self-generate behaviors such as goal-setting, desired performance outcomes and vicarious learning. Singer describes these internal reinforcers as behaviors that require athletes to be constantly aware of their improved efforts by performance measures usually kept in daily log books. Vicarious learning refers to the idea that individuals seeing others being rewarded will strive to improve their own performance. Singer (1978) suggests that this cooperative learning, accomplished by the athletes coaching each other, help the athlete establish his/her own external standards. "The end result of vicarious learning is the development of self-motivation" (p. 8).

Rushall (1975) suggests that the coach should provide positive information about the athletes' efforts and that

training goals should be short-term and progressive. The athlete's efforts should be recognized and socially approved. Zander (1975) described motivation as having three approaches, the first being a supportive one, the second reinforcement, and the third pride in performance. Alderman and Wood (1976) agree with Zander in their study of 425 young hockey players where they found that the two strongest incentives for these young athletes were affiliation with the team and pursuit of excellence. Duquin (1977) adds that persistence developed through positive reinforcement and other forms of motivation yields championship development.

Along with recognition, Rushall (1975) recommends that athletes be given responsibilities that are related to the performance of the sport. These responsibilities can take the form of self-recording of training experiences, monitoring one's own progress, or evaluating other athletes. Rushall further adds the following as sources of motivation for enhancing the athletes' work input: (a) personal goal-orientation should be related to improving and advancing the athlete's status in the sport; (b) that the athlete be given opportunity to relate to "other" experiences in the sport such as officiating or playing a new position; and (c) that the training experiences offer positive feedback, take place in a pleasant environment, and have sufficient variety and quantity. "Coaches who attempt to motivate their athletes in such progressive and well thought-out designs should find their athletes working at persistently high levels of

Motivation Through Effective Behavioral Coaching

Martin and Hrycaiko (1983) consistently suggest that motivation affects the performance of athletes. "If coaches can positively influence behavior change in athletes, it then stands to reason that athletic performance will improve" (p. 6). This idea of having a specific set of error correction tactics to improve performance is effective behavioral coaching. Martin and Hrycaiko (1983) refer to effective behavioral coaching "as the consistent application of principles of behavioral psychology for the improvement and maintenance of athletic behavior" (p. 9). The emphasis of this approach to motivating young athletes is the careful [illegible]ation and continuous evaluation of sensible coaching strategies. The process, as Martin and Hrycaiko describe it, employs specific measurement of the athletic performance and the effectiveness of the coaching technique, while recognizing the distinction between developing new behaviors and maintaining positive existing behaviors. The coach must focus on his or her own behavior as well as the athlete's. Their behavioral approach involves the athlete: (a) in goal-setting; (b) evaluating the acceptability of coaching procedures, and (c) encourages self-monitoring of performance.

In citing many recent studies, Martin and Hrycaiko (1983) state that coaches using this method must be aware of

modification procedures demonstrated in other areas and apply them in a scientific manner to his or her athletes.

Research in this area of motivation includes a number of studies: McKenzie and Rushall (1980) posted program boards and self-monitoring devices during practice to increase the number of laps swum by members of a competitive swim team; O'Brien and Simek (1978) used a behavioral chaining procedure for improving the performance of novice golfers; Keefe and Blumental (1980) developed innovative fitness activities to improve the efforts of participants in a Life Fitness Program, Heward (1978) improved the offensive efficiency of a baseball team by using extrinsic rewards (as cited in Martin and Krycaiko, 1983).

Motivating athletes using observable, measurable data moves coaching more towards an applied science, a factor that has been for too long sadly lacking in hockey. Jack Donahue (1980) in discussing motivation, states that: "the players and their problems must be understood on an intellectual and emotional basis if a coach is to be successful" (p. 42).

Personality

According to Boutillier and San Giovanni (1982), the term personality refers to the idea that every individual has a unique set of characteristics which set him or her apart from every other individual. According to these authors, the study of the effect of personality on performance in sport has focused upon trait measurement.

"Personality traits are conceived as enduring and stable predispositions that account for consistent patterns of individual behavior" (p. 116).

Personality Traits and Performance

This trait approach by San Giovanni and Boutillier (1982) to the study of personality is based upon the premise that: (a) there are a number of discrete traits; (b) that can be isolated and labelled; (c) that the level of each trait varies from person to person, and that these differing trait levels can be measured.

The use of personality inventories by researchers and sport psychologists to identify traits and predict behavior has been a topic of considerable controversy over the past 20 years.

Tutko (1971) suggested that the ultimate limitation in coaching success was the coach understanding his own personality. Much of Ogilvie and Tutko's early research (1966, 1970, 1971) was based on personality type and its relationship to success in sports and understanding behavior. Tutko and Richards (1971) classified coaching personalities into five categories: authoritarian, nice guy, easy doing, intense, and business-like, on the premise that the coach could shape the personality of the team and the individuals on it. "Coaches of varied personalities can produce a variety of player responses and behaviors" (p. 16).

Singer (1971) concurs with Tutko and Richards in

suggesting that personality traits subjected to statistical analysis can be of considerable assistance to the coach. He suggests the probability of a person being a member of a team, playing a particular position, or participating in the athletic event are possible, when traits can be ascribed.

Kane (1978) also supports the use of personality traits as a factor in explaining performance in sport. "Explanation of performance should, however, be limited to simple trait measures such as extroversion, introversion and anxiety" (p. 34).

The use of the trait approach in sport has also received considerable criticism. Rushall (1975) states that the personalities of individual coaches are unique and developed by numerous circumstances and conditions. He adds that attempting to apply scientific measurement to such a complex subject is difficult. "No matter how clearly personality traits can be defined, it must be remembered that the trait is/are never directly perceived" (p. 126). He further adds that these perceptions are always based upon inferences drawn from observed behaviors, generalizations, and abstractions. "The type of research often done on trait or 'personality typing' is often inconsistent and unreliable" (p. 126).

Ryan (1981) explains the popularity of personality types "because this simple delusion gives us a feeling of comfort and security" (p. 69). Ryan suggests that predicting behavior would be possible if only there were clear and perfectly understandable types of personality. Rushall

(1975) supports this by citing that athletes are extremely complex and differ from one another in physiological characteristics, skill levels, and psychological make-up. Psychological attributes can often change and there are simply no characteristics that are common to all good coaches or athletes.

Schutz (1975) concurs with Ryan (1982) and Rushall (1975) by adding that personality measurement tests should be used by coaches and athletes who are aided by trained testers. Schutz (1975) suggests that the use of these tests for understanding performance and behavior usually report findings that are inconsistent. "The inconsistency of data make the drawing of dependable conclusions impossible" (Schutz, 1975, p. 39). Schutz found that situational factors play a large part in human behavior and it is these factors that makes the use of personality tests questionable.

Martens (1975) found that: (a) generalizations on data and other research information; (b) unflective choices of instruments; (c) uninformed or non-existent statistical analysis, and (d) the "ethics" involved in predicting successful coach and athlete behaviors, were all common to the use of personality measurement in attempting to determine success in sport.

Danielsen (1974) in his study of youth hockey players and their coaches concluded that: "although stereotyping has its advantages in simplification of understanding, it has the disadvantage of oversimplification of the complexity of

human behavior . . . coaching being no exception" (p. 26). Czakowski (1981) further supports the above by concluding that there is no one "type" of effective coach. Czakowski found that excellent results are obtained by coaches of varying personalities who use many and sometimes widely different methods of training and leadership.

Summary

This review of literature suggests that personality type, per se, is not a reliable predictor of coaching effectiveness. The literature reviewed does emphasize the importance of the coach understanding the psychological and sociological variables that account for team success. By understanding the factors (attributes) of coaching effectiveness and how each factor can improve the quality of the athlete's experience in sports participation, the coach is better able to provide positive psychological and physical benefits to his or her athletes. Coaches who seek to develop their competencies in this manner will also enhance the individual athlete's performance potentials as well as contribute to his or her human development.

Chapter 3

METHODS AND PROCEDURES

Statement of the Problem Review

The purpose of this study was to understand what "good" coaches perceive to be the most important factors in effective coaching and the ways coaches improve their coaching effectiveness. Chapter 3 is composed of six subsections. Subsection 1 reviews the sampling procedures used in this study while subsections 2 and 3 outline the data-collecting techniques and questionnaire. Subsection 4 discusses the indices of coaching effectiveness used for the data analysis. Subsection 5 describes the methodology employed in answering each of the research sub-questions and includes the null hypothesis used in sub-question 1. Subsection 6 describes the ranking procedures and descriptive analysis employed in attempting to understand how these coaches improve their hockey knowledge.

Sample

The 1984 National Coaches Certification Program Level IV Seminar was held in Edmonton. It was attended by over 150 delegates, the majority of which came from Alberta. The majority of the group consisted of 110 candidates seeking Level IV certification in the National Coaches Certification Program. The remainder of the group was comprised of

observers, group leaders, organizers, and guest speakers.

The group selected for use in this study were the Level IV candidates. The Level IV candidates were all active coaches at various levels in Minor Hockey. In addition to having successfully completed their Level III programs, these candidates also required references from their minor hockey associations, completed resumes, and successful coaching backgrounds in order to attend (see Appendix A for Level IV eligibility requirements).

The speakers who attended the clinic were well known and highly regarded hockey coaches from across Canada. Initial contact was made at this clinic with the four individuals who agreed to comprise the "expert" panel. Members of the "expert" panel for this study were selected primarily on the basis of their highly-regarded knowledge of hockey and their coaching involvement with Canada's past and present Olympic Hockey Teams. The members of the expert panel had also contributed significantly to the content in the coaching manuals of the National Coaches Certificate Program and are all presently involved in the Canadian Amateur Hockey Association's Program of Excellence. The Program of Excellence, initiated in 1982, involves the identification and development of Canada's elite hockey players for the purpose of maintaining and improving our nation's high profile and standing in International hockey competition. Each member of the expert panel was and is currently involved in coaching at the Olympic, inter-collegiate, or national

elite level.

Upon receiving permission to initiate this study from the technical directors of the Alberta and Canadian Amateur Hockey Associations, the delegates were informed of the study and its purpose and were given the option of participating. The Level IV candidates who were asked to take the Myers-Briggs Type Indicator were required to coach during the 1984-85 hockey season. This coaching requirement is part of their Level IV certification process.

The sample represented some of the best hockey coaches in Alberta. These top amateur coaches represented an excellent cross-section of individuals from all four streams of our National Coaching Program: (a) the initiation level; (b) the recreation level; (c) the competitive level, and (d) the elite level.

Data Collection Procedure

All the coaches attending this Level IV seminar for certification were informed of the study and of the follow-up survey. The seminar register was used to obtain a mailing list for all those coaches who attended.

All the Level IV candidates were given the Myers-Briggs Personality Type Indicator during a session on the "Psychology of Coaching". The purpose of the testing was carefully explained by the researcher as to its relevance to the study and its relation to the follow-up questionnaire. The follow-up questionnaire was developed during the next

six months, using examples of previous studies, recent literature on the topic being researched, and the expertise of Dr. Murray Smith and Dr. Larry Beauchamp.

Each coach in the sample was sent the inventory (see Appendix C) at the end of their regular league play (March 1, 1985). The inventory included: (a) a letter of introduction; (b) a coaching information section; (c) the questionnaire itself, and (d) a self-addressed envelope. The coaches were asked to return the completed questionnaires by March 23, 1985. A subsequent follow-up letter was sent out to all coaches whose questionnaires had not been received by March 28, 1985.

The choice of a questionnaire response as the basis for doing this research was based on the follow-up nature of the study and the author's personal acquaintance with a great majority of the coaches.

Instruments Used in the Questionnaire

This five page inventory was developed according to the research questions. The research questions were preceded by the coach's background information section. The questionnaire is found in Appendix C of this text.

Coach Background Information

This section was developed to provide general information on the sample group. The coach's age, marital status and number of children comprised the first question. The other items considered were educational attainment,

hockey playing experience, hockey coaching experience, hockey experiences as an assistant coach or manager, and coaching experiences other than those involved in hockey. The question of time spent coaching hockey during the season was broken down into weekly time allocations. The three categories were: (a) time spent in practice per week; (b) time spent planning practices per week, and (c) time spent organizing, promoting, and generally administering hockey per week.

The purpose of this section of the questionnaire was to provide information for use in comparing the sample group's demographic background, hockey experiences, experiences in other sports, and time total spent on coaching hockey as it related to their successes (wins vs. losses) during the 1984-85 hockey season.

Myers-Briggs Type Indicator

Question 1 related to the sub-problem #1: "is there any relationship between the Level IV hockey coaches' results on the Myers-Briggs Personality Type Indicator, and Coaching Effectiveness? A correlation between the coach's total number of points attained to the total number of points possible and the coach's personality type was sought. As mentioned in the procedures, the coach's personality type, for purposes of this study, was measured by the results of Myers-Briggs Personality Type Indicator.

The Myers-Briggs Personality Type Indicator was

originally developed in 1932 by Katherine Briggs and Isabel Briggs Myers as a personality type indicator for helping college students in Palo Alto, California choose career preferences. It was their theory that certain "types" of individuals would be better suited for various careers according to their personality "types". Myers (1980) suggests "the understanding of type in general and of one's own type in particular can help individuals choose their careers. It can also help them to deal with the problems and the people in their lives" (p. 1).

The Myers-Briggs Type Indicator has been revised, updated, and expanded on numerous occasions over the past 52 years. Today there exists a number of different forms of the Indicator. Form G, which was used in this study, was updated in 1976. Form G of the Myers-Briggs Indicator asks questions which deal with the way individuals like to use their perception and judgment. The questions were developed to understand the way individuals like to look at things and the way they go about deciding things. The answers reflect four separate preferences: (a) introversion and extroversion; (b) sensing and intuition; (c) thinking and feeling, and (d) judging and perceiving.

The preferences used in this study were introversion, extroversion, sensing, and intuition. The introversion preference as developed by the indicator, would mean that a coach would probably relate more easily to the inner world of ideas rather than the outer world of people and things. An

extroversion preference would indicate that the coach would relate more easily to people and things than to the inner world of ideas. A sensing preference would indicate the coach's preference for working with facts rather than looking for possibilities and relationships. Lastly, an intuition preference would indicate a coach's preference for looking at possibilities and relationships as opposed to working with known facts.

Each combination of the preference tends to be characterized by its own set of interests, values, and skills. The four combinations of traits used for this study were: (a) extroversion and intuition (ET); (b) extroversion and sensing (ES); (c) introversion and intuition (IT); and (d) introversion and sensing (IS). Each combination of the preference tends to be characterized by its own set of interests values and skills. A summary of Myers-Briggs (1976) description of the characteristics associated with each combination is provided in Table 1.

In terms of reliability the measurement of personality type often becomes a difficult process. The researcher is always faced with the question of how much of any given result is the reliability of the Indicator and how much is the reliability of the person taking it. However, in developing Form G, Myers-Briggs used carefully planned studies of retests, at different ages, over different time intervals, and with samples of different calibre, in order to gain information as to the stability of the preferences as reported under various conditions.

Table 1

Characteristics Frequently Associated with Each "Type"

Extroverted Intuitives (ET)	Extroverted Sensors (ES)
- hearty, frank, decisive leaders - quick, ingenious, good at many things - resourceful in solving new and challenging problems but neglect routine assignments - usually well-informed and enjoy adding to their fund of knowledge - apt to turn to one new interest after another - alert and outspoken - may be more positive and confident than their experience in an area warrants	- matter of fact, insensitive - enjoy everything. Make things fun - tend to like mechanical things - conservative values - like to organize and run activity - outgoing, easygoing, friendly - find remembering facts easier than mastering theories - work best with encouragement and praise - main interest is in things that directly and visibly affect people's lives
Introverted Intuitives (IT)	**Introverted Sensors (IS)**
- quiet, reserved, impersonal - interested in ideas with little liking for parties or small talk - enjoy theoretical or scientific subjects - usually have original minds and great drive for their own ideas and purposes - skeptical, critical, and independent - have power to organize a job and carry it through with or without help - little concern for possessions or physical surroundings	- serious, quiet, sensitive - earn success by concentration and thoroughness - practical, orderly, realistic, and dependable - usually do not care to lead but make loyal followers - relaxed about getting things done because they enjoy the present moment - observe and analyze life with detached curiosity - interested in impersonal principles, cause and effect - exert themselves no more than necessary

Standardization for Form G is based on results of tests on 1,114 males and 1,111 females in Grade 4 through 12 in three public schools in Bethesda, Maryland, and four private schools in four suburbs of Philadelphia. The 11th and 12th grade sample was comparable to the sample used for the original Form F (of the Indicator) item analysis, which consisted of college preparatory students. The same methods of item analysis were used for Form G as for Form F. Each item was correlated with type; all cases having a difference in points greater than one were put into a four-fold table and the cosine-pi formula was used to obtain an approximation of the tetrachoric correlations. To evaluate the validity of the items at different grade levels, five different analyses were performed. The median correlations for these samples in comparison with data for Form D2 and F ranged from .48 with 4th and 5th grades (264 students in four schools) to .61 with the 11th and 12th grades (1,[redacted] students in 15 schools). The validity of each item did not diminish with any of the results and from the standardizing of Form G it also appeared that the Indicator could be used as early as the 4th or 5th grade to explore type difference in interest and learning styles. The authors of the indicator make it very clear that although results may be used with confidence in providing criterion groups for research, in working with individuals the reported type should never be used as a fact but always as a hypothesis for verification.

The personality measurement used for this study was

based on the premise that such a large sample group might produce results indicating a pattern for preferences toward a particular trait. Correlating the frequency of a given trait to the successes that each category achieved during the 1984-85 hockey season would thus answer the first research sub-question, that question being: "Is there relationship between personality type and coaching success?"

Question 1 of the questionnaire thus asks the coach to list how many league games did his team play this year, and how many did it win, lose, and tie.

Ranking the Determinants of Coaching Effectiveness

Question 2 of the questionnaire was developed to determine the degree to which the expert coaches and the level four coaches agreed with each other on the priority assigned to each determinant of coaching effectiveness. The determinants were listed and all the coaches in the study were asked to place them in the provided Q-Sort. The Q-Sort, as developed by William Stephenson (1953), is a method of ranking that is particularly effective when there is a large number of items to be ranked. The Q-Sort used for this question was designed so that the sample group would have to rank the expert panels 15 determinants in the following order: the most important factor in coaching effectiveness first, the next two most important factors next, the next three important factors next, and the last five factors would be placed on the bottom rank. The criterion of judgment

involves the relative importance of each factor as it relates to the other 14. A value weighting has been assigned to each position. The total value assigned each factor indicates the composite judgment of the sample group as to its relative importance as a factor in hockey coaching effectiveness.

The Coaches' Self-Ratings

Question 3 of the questionnaire was the Coaches' Self-Rating Scale. This scale listed the 15 factors that the expert panel had identified. The question asked both the sample and the expert to rate themselves on a scale of one to ten as to the degree of effectiveness that they believed/perceived they have obtained in terms of each of the determinants. Also, of comparative interests were the ratings the Level IV coaches gave themselves as opposed to the ratings the experts gave themselves.

Sources of Hockey Coaching Improvement

Question 4 of the questionnaire was the Perceived Sources of Hockey Coaching Effectiveness. This scale was developed by Dr. Murray Smith of the University of Alberta. It has been used in studies of coaching effectiveness in football (Naylor, 1976), basketball (Horwood, 1979), and soccer (Gordon, 1981). The scale was modified for hockey in order that this study would be able to determine the relative importance that the sample group placed on the various sources of information available to them. The

ratings that these various information sources received from the sample group will also provide some direction to the revisions currently being considered by the Canadian Amateur Hockey Association to the National Coaches Certification Program. The scale allowed for input from the coaches on both an objective and subjective manner by seeking their ratings and then asking for their personal preferences (items 28, 29, 30). The information drawn from the scale will hopefully contribute to the theme of this study. "In order to improve our coaching programs and coaching abilities, we must study and try to understand what 'good' coaches say and do."

Indices of Coaching Effectiveness

The Level IV candidate coaching effectiveness for the purpose of answering sub-question 1 was measured in terms of total points attained during league play in the 1984-85 hockey season. Each coach then had his personality trait(s) correlated with his percentage of total points attained, using a one-way analysis of variance (ANOVA).

Using win-loss records as a measure of coaching effectiveness has for too long in Canadian sports been the criteria for determining effective coaching. In order to understand coaching effectiveness in a more holistic and qualitative manner, the author asked each member of the "expert" panel (see sample, p. 47) to compose a list of the factors or attributes that contribute to coaching

effectiveness in Minor Hockey. Once these factors had been received, the final components of the questionnaire were developed. The factors that were identified by the expert panel were grouped to form the factors that determine coaching effectiveness in Minor Hockey. From the experts' lists, 15 attributes were identified and developed to provide a framework for the research questions and a qualitative measure for studying what "good" coaches do. The indices of coaching effectiveness for use in this study thus became the coaches' won-loss record in terms of total points attained in league play, and their personal ratings of the expert panels attributes of coaching effectiveness. The win-loss in terms of total points attained record was used only in the development of the first research sub-question while the more subjective and holistic approach to this research centered around the attributes of coaching effectiveness that was determined by the expert panel.

Methodology and Statement of the Null Hypothesis

In attempting to answer the research question, "What are the perceived factors in hockey coaching effectiveness and how can coaches improve upon them", the methodology employed was to answer each of the sub-questions developed in the Statement of the Problem in Chapter 1. By answering each of the sub-problems, it was the author's contention that the conclusions for the research question would emerge obvious. Descriptive data was tabulated where possible for

ease of illustration on the various rankings, means, and comments provided by the sample.

Coaches' Background Information

The sample's democraphic information was designed to provide some general information regarding characteristics and hockey involvement of the group. Descriptive data provided information on the coaches' personal backgrounds, training time, playing and coaching experiences, and the actual amount of time involved with hockey during the 1984-85 season. Relationships between the amount of practice time and preparation time to the total number of games won and lost were also calculated and summarized.

Myers-Briggs Results and Coaching Effectiveness

The methodology employed in attempting to answer sub-problem number 1 was extensive. Sub-problem 1 asked, "Is there any relationship between the Level IV coaches' results on the Myers-Briggs Personality Type Indicator and Coaching Effectiveness as measured by percentage of total points attained in the 1984-85 season?" The sample group was given the Myers-Briggs Type Indicator at the Level IV Coaches Seminar in July, 1984. The tests were computer-scored according to the answer keys provided by the Myers-Briggs Test Inventory package. The coaches were then categorized according to their personality preferences. Upon receiving the completed questionnaires and analyzing the coaches' season records, a correlation was sought as to

the coaches' personality types and the successes they attained.

Success(es) for the purpose of answering sub-question 1 was based on the total number of points a coach attained as to the total number of points that were possible in league games played in the 1984-85 hockey season.

Using the total number of points attained rather than wins vs. losses was an important consideration in the development of this methodology. A win in hockey has traditionally meant two points awarded to the winning team in reference to league standings while a tie means one point is awarded to each team. With the tremendous demand on our hockey facilities, most leagues and minor hockey associations schedule games according to time restrictions and overtime is seldom used to break ties. This results in a large number of games ending in ties. Other factors in the consideration of the use of ties were the fact that many coaches consider a tie against a more talented team a success in itself; secondly, many beginner and recreation level coaches stress the fun and participation aspects of the game rather than winning; and thirdly, ties can be very significant in terms of point standings in leagues where a large number of games are played and where coaches assume that they will not win every game.

The means of the total points obtained by each personality group will be compared through a one-way analysis of variance (ANOVA). For the significance testing, $\alpha = .05$

was used. The results of the statistical analysis will be presented on two tables: (1) comparing each of the personality groups, number of games played, and the percentage of points attained as to the number of points that were possible; and (2) the analysis of variance (ANOVA).

Statement of the Null Hypothesis

The purpose of this part of the study was to determine whether or not there was a relationship between coaching effectiveness, as measured by the percentage of total points attained during the 1984-85 hockey season and the personality traits of the sample, as measured by the Myers-Briggs Type Indicator. Thus, the null hypothesis for this part of the study is: There is no significant difference in the means of the total points of the groups defined by the Myers-Briggs Type Indicator.

Ranking the Determinants

Sub-question 2 asked "What skills, knowledge, and attitudes (determinants) do a panel of expert Canadian hockey coaches consider to be most important to coaching effectiveness?" The methodology employed in answering this question was the summarizing of each of the four experts' replies. The experts who had initially been contacted during the Level IV Coaches Seminar forwarded their lists of the determinants of coaching effectiveness to this researcher in January of 1985. The lists were summarized and determinants of hockey coaching effectiveness were

defined. The determinants of hockey coaching effectiveness as defined by the expert panel then formed the basis for questions 2 and 3 of the questions used in this research.

Coaches' Self-Ratings

Sub-questions 3 and 4 ask the expert panel and the Level IV coaches: "To what degree do the experts and Level IV coaches agree with each other on the priority assigned to each determinant? Ranking the results and descriptive analysis were used to answer this sub-question.

The methodology employed in answering sub-questions 3 and 4 was based on the compilation of total points assigned for each determinant by each of the groups. The Q-Sort used to rank the determinants was given a rating scale of 7-5-3-2-1 for each of the levels. The determinants were then ranked according to total number of points each determinant received.

Sub-question 5 asked: "What degree of effectiveness do both the expert panel and Level IV coaches believe/perceive they have obtained at present on the determinants of coaching effectiveness?" The methodology employed to answer this question was the computation of the Level IV coaches' and the experts' average ratings of their own coaching effectiveness on each of the 15 listed determinants. The mean scores were descriptively analyzed and a discrepancy scale as developed by Dyer (1970) was used to illustrate and describe these ratings.

Sources of Hockey Coaching Effectiveness

Sub-question 6 asked: "What is the relative importance to the Level IV coaches of various source of information as means to improve their knowledge about hockey coaching?" The methodology employed in answering sub-question 6 was the ranking of each of the information sources according to the average ratings that the coaches assigned to them. A ranking of the responses and descriptive analysis was also done on the coaches' responses to questions 28, 29, and 30.

Chapter 4

RESULTS AND DISCUSSION

The results of this research are presented as outlined in the methodology of the preceding chapter. The coaches' background information section precedes the presentation of the results that attempt to answer each of the research sub-questions. A discussion of the results follows the presentation of each of the sub-questions. The discussion portion of each of the sub-questions integrates information from the results in attempting to address the research question itself. The format of the discussion section thus revolves around: (1) what are the perceived factors in coaching effectivess, and (2) how do coaches improve their coaching effectiveness?

Coaches' Background Information

Of the 110 questionnaires distributed, 81 were eventually returned, providing a return rate of 74 percent.

The average age of the Level IV coaches participating in the study was 35.8 years with a range from 23 to 58 years. The participants in the study were all males. In regard to their marital status, 83 percent were married, 12 percent were single, and 5 percent were divorced. Of those coaches who were married, 57 percent had two children, 21 percent had three, 9 percent had four or more, 4 percent had only one

child, and only 9 percent had no children.

As a group the participants were well educated in the sense that 44 percent had completed university training, 36 percent had completed technical training, 17.5 percent had completed high school, and only 2.5 percent had not completed grade school.

In terms of hockey-playing experience, only 3.8 percent had never played the game, while the highest level that each respondent played broke down as follows: 47.5 percent played minor hockey, 12.5 percent had played at the Junior level, 11.25 percent at the Senior level, 17.5 percent at the College level, and 9 percent had played at the professional level.

The respondents had an average of 7.4 years of hockey coaching experience which ranged from the beginner's level to the minor professional level. All but 31 percent of the coaches were involved in coaching other sports. Of the 69 percent involved in coaching other sports, the five most commonly cited sports that these individuals coached other than hockey were: (a) baseball, 28 percent; (b) soccer, 21 percent; (c) football, 10 percent; and (d) basketball and volleyball, 4 percent.

Regarding the amount of time coaches spent involved with hockey during 1984-85 league play, the results were as follows. The 61 coaches who replied spent 1.99 hours per week in preparation planning for their games and practices. The teams that the coaches were involved with had an

average of 7.72 hours of practice time per week and the coaches spent an average of 4.1 hours per week involved with administrative matters relating to their team. The respondents spent an average of 8.86 hours per week involved with their hockey teams. This did not include travelling to and from games and the time involved in the games themselves. The average number of league games played for the 1984-85 season was 47.6 with a range of 12 to 72 games played.

Of the 81 coaches who responded, 49 had winning records, 32 had losing records, and 10 had attained exactly half the number of total points that were possible. A winning record for descriptive analysis in this study was the attainment of at least 51 percent of the total number of points that a team could possibly have attained during league play in the 1984-85 season.

Table 3 illustrates the average amount of time spent planning and the actual amount of practice time of each of the three groups of coaches.

Summary and Discussion

The coaches' background information section provided a number of interesting discussion points. The fact that 83 percent were married and that 76 percent of those who were married had two or more children indicates that these coaches are family men who directly or indirectly involve hockey in their family life. Of further interest was the low divorce rate in the group; the high level of educational

Table [illegible]

Average Time Spent Per Week Related to Hockey
(in Hours)

		Planning	Practice Time
Winning Coaches	([illegible])	2.35	3.18
Losing Coaches	(22)	2.09	2.93
Even Records	(10)	2.10	2.70
	n = 81		

achievement; and the high degree of involvement of the Level IV coaches in other sports.

One of the themes developed in the literature review was the importance of the coach providing a quality experience for those athletes that he or she is involved with. The technical knowledge these coaches have achieved through successful completion of the first three levels of the National Coaching Certification Program: the stability of their family lives; their high educational attainment; and their coaching involvement in other sports would certainly lead one to expect they could provide a quality experience.

In terms of time spent on coaching during the hockey season there was little difference between the amount of practice time that the coaches had with their teams and the number of points the teams attained. However, the survey does indicate that those coaches with "winning records" did spend more time (20 percent) per week planning their

practices than those with losing and even records. The extra amount of planning time would obviously provide for better organization of practices, game management, and overall team organization.

Personality Traits, and Coaching Effectiveness

As was indicated in the test instrument section, the Myers-Briggs Type Indicator was designed to find out the way individuals like to look at things, the way they go about deciding things, and how they use their own levels of perception and judgment. The answers to Form G reflected each individual's preference toward the following four categories: (a) extroversion; (b) introversion; (c) sensing, and (d) intuition. The tests were computer-scored according to the scoring forms provided in the test battery. Each of the coaches' personality preferences were then grouped according to the results. Of the 81 coaches who responded to the survey, only 78 of the coaches' records were analysed for statistical inference because 3 of the responders did not coach in the 1984-85 hockey season. Of the coaches who responded, 68 showed a definite preference toward one of the four categories, 7 showed equal preference toward two of the categories, and 3 individuals showed equal preference to three or all four of the categories. The ten coaches who showed no preference toward one category or another comprised the fifth group for the statistical analysis of sub-question 1. Of the 68 remaining coaches; 23 were categorized as

extroverted sensors (ES), 17 as extroverted intuitives (ET), 18 as introverted sensors, and 10 were categorized as introverted intuitives (IT), according to the preferences that their test results indicated.

The percentage of total points attained to the number of points that were possible in league games played during the 1984-85 hockey season initially indicated that, as a group, the extroverted sensors (ES) experienced the most success (Table 3).

Table 3

Points Attained in 1984-85 Season

Group (W)	(N)	Games	Won	Lost	Tied	Points	%age
Extroverted Sensor	(23)	605	350	201	54	754	62.3
Extroverted Intuitive	(17)	497	271	170	56	398	60.2
Introverted Sensor	(18)	496	252	211	53	337	54.1
Introverted Intuitive	(10)	332	161	145	26	348	52.1
No Preference	(10)	290	141	126	19	301	51.8

However, the more refined statistical inferences provided by the one-way analysis of variance (ANOVA) failed to indicate that there is any relationship between personality trait(s) and coaching effectiveness as measured by the number of total points attained in the 1984-85 hockey season (Table 4).

Summary and Discussion

The wide ranges within each sample group directly

Table 4

Summary of Results for One-Way Analysis of Variance

Source of Variation	SS	Degree of Freedom	MS	F	P
Groups	0.19642539E+04	4	491.06	1.54	0.20
Error	0.23296250E+05	73	319.13		
Total	0.25260504E+05				

The F value (1.54) was not significant at the .05 level.

affected the significance factor in the results. For example, within one group a particular coach had a 100 percent score with his record while another coach had a 10 percent score with his seasonal record. This factor also alludes to the problems encountered when testing of this nature is based on the results of one particular season.

Each of the personality groups in the sample was successful in terms of the number of points attained to the total number of points that were possible. As an overall group, this would almost be an obvious conclusion because of the technical expertise, experience, and commitment required of these coaches in attaining Level IV Certification. However, in comparing the results of each individual coach within each group, there were obvious differences. The results of the one-way analysis of variance provided a basis from which conclusions regarding personality trait and coaching effectiveness could be drawn. As was mentioned

in the description of the Myers-Briggs Test Indicator, results of any personality type can be used with confidence in providing criterion groups for research and observation while work with individuals should not be approached as fact, but as hypotheses for verification. In this sense the Indicator served the purpose of this study well.

Determinants of Hockey Coaching Effectiveness

The objective of this research project was to determine what the really "good" coaches believe and do. In attempting to determine the factors that comprise coaching effectiveness in hockey, this researcher sought the opinions of four recognized experts. Their responses, which are presented completely in Appendix E, were then carefully scrutinized and defined by this researcher. The 15 determinants of hockey coaching effectiveness that were identified served to form the basis for sub-questions 3, 4, and 5 of this research project. Those 15 determinants of hockey coaching effectiveness, as identified from the experts' responses were:

NOTE: the order that the determinants are presented does not reflect any importance or ranking.

Plans and organizes well - for practices, games, and the season.

Creates good learning environment - emphasizes the positive, corrects, criticizes, without being too harsh, seen as fair.

Concerned for player's welfare - respects and takes interest in present and future welfare of all players, keeps game in perspective.

Good teacher of skills - explains, demonstrates (or has players demonstrate) well, corrects errors effectively.

Generates cooperation - unselfishness and other positive attitudes and a real team concept among players.

Mentally prepares team - is able to help players prepare mentally for games, especially tough games, and to help them cope with pressure in touch situations.

Motivates - able to get players to set high personal standards of performance, and to produce consistently high effort to meet them.

Open to new ideas - not "set" in his ways of thinking and doing things; will adopt new ideas that come along.

Makes the game fun - allows and/or creates an atmosphere of relaxed fun fairly often.

Sincere and honest - not phony, is a good example (role model) of a genuine person for players to follow.

Possesses technical knowledge - of the skills, tactics, strategies of the game.

Communicates well - listens to all players and expresses himself so that players understand what he is saying.

Maintains team discipline - is able to help players of very different temperments to develop self-control needed for team success.

Observes and analyzes - the performance of his own team and opponents and identifies both strengths and weaknesses accurately.

Loves the game - is clearly enthusiastic, enjoys coaching, most, if not all the time.

Summary and Discussion

This researcher felt that the importance of having high quality players and top assistants were factors that could not be overlooked in determining coaching effectiveness. The importance of these two factors was stated in the directions given for replying to question 2 in the

questionnaire. The determinants that the expert coaches identified related to individual personal qualities that were considered necessary for success.

Of interest in developing the factors that contribute to coaching effectiveness was that none of the experts specifically cited personality as a factor in coaching effectiveness. The coach's overall personality would be reflected both directly and indirectly when each of the determinants of coaching effectiveness are considered. It is interesting to note that no specific personality-related statement such as "an effective coach should be outgoing and vibrant in his interactions with his players" was provided by the expert panel.

Possessing a well-rounded personality would be a factor in coaching success; its importance cannot be overlooked. However, the implication of the results suggest that defining a particular personality type that would most contribute to coaching effectiveness is not possible.

Which of the determinants of hockey coaching effectiveness were perceived to be the most important? The answers to this question are provided by sub-question 3.

Ranking the Determinants

Both the sample group and the expert group were asked to rank each of the determinants according to the importance that each coach perceived a particular determinant to have. Although the sample group's rankings did differ (Table 5) from

Table 5

Ranking the Determinants of Coaching Effectiveness

Expert Group			Sample Group		
Determinant	(Points)	Rank	Determinant		(Points)
Creates a good learning environment	(22)	1	1	Communicates well	(276)
Communicates	(19)	2	2	Plans and organizes well	(272)
Plans and Organizes well	(16)	3	3	Creates a good learning environment	(266)
Possess technical knowledge	(15)	4	4	Good teacher of skills	(247)
Loves the game	(14)	5	5	Sincere and honest	(234)
Good teacher of skills	(12)	6	6	Possesses technical knowledge	(231)
Sincere and honest	(8)	7	7	Loves the game	(233)
Motivates	(8)	7	8	Concerned for player's welfare	(216)
Concerned for player's welfare	(8)	7	9	Makes the game fun	(195)
Observes and analyzes	(8)	7	10	Maintains team discipline	(192)
Generates co-operation	(6)	11	11	Generates cooperation	(191)
Makes the game fun	(6)	11	12	Motivates	(179)
Maintains team discipline	(5)	13	13	Observes and analyzes	(157)
Mentally prepares	(5)	13	14	Mentally prepares	(146)
Open to new ideas	(5)	13	15	Open to new ideas	(119)

those of the experts, the groupings of various determinants were similar.

Summary and Discussion

In terms of ranking the determinants, the experts and the sample group both rated various teaching skills higher than technical knowledge. The importance of communicating well; planning and organizing well; and providing a good learning environment were the top three determinants ranked by each group. This substantiates findings of other studies done on effective coaching by such researchers as Danielsen (1974), Percival (1972), Martens (1978), and Smoll, Smith, and Curtis (1979). In all of these studies, effectiveness in coaching was related to the coaches applying certain principles of effective teaching that included: planning, guiding, instructing, applying discipline, correcting, and providing a steady stream of relevant information. These principles were all found to contribute to the athlete's improved skills and understandings of that particular sport.

The expert and Level IV coaches' rankings of these determinants also concur with Fuoss (1981) when he suggests that: ". . . coaches are teachers, coaching is teaching, and teaching is the management or guidance of learning" (p. 113).

The experts ranked technical knowledge of the skills, tactics, and strategies of the game only slightly higher than the sample group (fourth as opposed to fifth). This indicates that both groups value the importance of technical

knowledge but they also recognize that the key to effective coaching is communicating that knowledge in a good learning environment.

The expert's and the sample group's ranking of the determinants also indicated certain clusters according to the points each determinant received. The researcher defined these "groupings" as tendencies of the experts and Level IV coaches to give almost equal values to clusters of the various determinants. The experts' ranking (Table 5) clustered (a) good learning environment and communicates well at the top cluster; (b) plans and organizes, possesses technical knowledge, loves the game, and possesses good teaching skills as a second cluster; (c) observes and analyzes, motivates, concern for players, and sincerity as a third grouping; and (d) generating cooperation, making the game fun, discipline maintenance, mental preparation, and being open to new ideas formed the fourth cluster.

The sample group rankings indicated only three distinct clusters according to the point values each of the determinants received. The sample group ranked: (a) communicates well, plans and organizes, and creates a good learning environment, in the firstcluster; (b) shows sincerity, possesses technical knowledge, and loves the games as a second cluster, and (c) makes the game fun, maintains discipline, and generates cooperation were given values that allowed them to form a third distinct cluster.

Aside from the tendency of both the experts and Level IV

coaches to give almost equal weighting to certain groups of the determinants, a number of other similarities were noted. Both groups ranked open to new ideas and mental preparation as the two least important of the determinants identified by the expert panel. Both groups provided approximately the same rankings for all of the determinants except for two: (1) motivates, and (2) observes and analyzes. In each instance the experts gave higher ratings to each of these determinants. The experts who are dealing with more mature, highly skilled athletes and who coach at higher levels of hockey apparently value those determinants higher than a sample group which contained coaches who are involved with players in a much wider range of coaching levels.

In reviewing the rankings of the determinants, the researcher also identified some interesting differences within the sample group. Of the 81 respondents, 25 were classified as recreation coaches according to the guidelines initiated in the Canadian Amateur Hockey Association's 1983 Model Program. The remainder of the coaches (56) were classified as competitive coaches according to the Model Program's guidelines. The rankings given by these two groups within the sample are provided in Table 6.

Recreational level coaches are involved in hockey at the non-competitive, participation, and fun league levels. This was evidenced by the higher ranking that this group gave to: concern for player's welfare (second versus eighth), and makes the game fun (fifth versus twelfth) as compared to the

Table 6

Rankings Within the Sample Group

Competitive Coaches (56)			Recreation Coaches (25)		
Rank	Determinant	Point Total	Rank	Determinant	Point Total
1	Communicates well	(203)	1	Plans - organizes well	(82)
2	Plans - organizes well	(190)	2	Concerned for players	(73)
3	Creates a good learning environment	(188)	3	Creates a good learning environment	(72)
4	Possesses technical knowledge	(171)	4	Good teacher of skills	(71)
5	Good teacher of skills	(169)	5	Communicates well	(71)
6	Sincere and honest	(165)	6	Makes the game fun	(70)
7	Loves the game	(160)	7	Sincere and honest	(69)
8	Concerned for players	(137)	8	Maintains team discipline	(66)
9	Generates cooperation	(131)	9	Loves the game	(63)
10	Motivates	(128)	10	Possesses technical knowledge	(60)
11	Maintains team discipline	(126)	11	Generates cooperation	(60)
12	Makes the game fun	(124)	12	Observes - analyzes	(53)
13	Observes - Analyzes	(104)	13	Motivates	(51)
14	Mentally prepares	(102)	14	Mentally prepares	(44)
15	Open to Change	(83)	15	Open to change	(35)

competitive coaches. The competitive coaches, however, rated communication (first versus sixth) and possession technical knowledge (fourth versus tenth) much higher than the non-competitive recreation-oriented coaches. The source of these differences may relate to the emphasis placed on winning and the higher calibre, organizational, and involvement levels of the competitive coaches. The greater emphasis on the concern for player's welfare and the fun aspect of the game indicate that the recreation coaches have their priorities in line with the guidelines set out by the Canadian Amateur Hockey Association's Model Programs.

Coaches' Self-Ratings

The Coaches' Self-Rating Scale was designed to determine what degree of effectiveness that both the Level IV coaches and expert panel [redacted] they have obtained. The coaches' self-ratings on each of the determinants are shown in Table 7 as means of the self-ratings given on a scale of one to ten in which ten represents the highest rating possible.

The self-rating scale provided a number of interesting observations on how the coaches perceived their own levels of development on each of the coaching determinants. The coaches in both groups considered their levels of development on each of the determinants of coaching effectiveness to be quite high. The means on the self-rating scale ranged from a high of 9.24 to 6.76 for the sample group and from 9.25 to 6.25 for the expert group. The positive ratings that these two groups of coaches gave themselves indicates the high

Table 7

Coaches' Self-Ratings

Determinant	Expert Self-Rating	Sample Self-Rating
Love of the game	9.25	9.24
Sincerity	8.25	8.26
Concerned for player's welfare	8.0	8.14
Player-organizer	8.[illegible]	[illegible]
Open to new ideas	8.0	[illegible]
Makes the game fun	8.[illegible]	[illegible]
Instructs in a safe learning environment	8.[illegible]	[illegible]
Develops a positive attitude - generates cooperation	8.[illegible]	7.74
Good teacher of skills	7.25	[illegible]
Communicates well	7.25	[illegible]
Possesses technical knowledge	7.[illegible]	[illegible]
Mentally prepares	6.50	[illegible]
Establishes-maintains discipline	7.0	[illegible]
Motivates	6.25	[illegible]
Observes and analyzes	7.75	6.76

regard in which they hold their own coaching abilities and the overall contribution that the C.A.H.A.'s National Coaches Certification Program makes to the [illegible]

Summary and Discussion

Both groups of coaches' self-ratings were very [illegible]

on the following five determinants: (a) love of the game; (b) sincerity; (c) concern for player's welfare; (d) open to new ideas, and (e) fun and enthusiasm. The sample group gave themselves higher ratings than the experts did on the following determinants: (a) teaching skills; (b) communicates well; (c) technical knowledge; (d) maintains discipline, and (e) motivates. The experts gave themselves higher ratings than the sample on five of the determinants: (a) plans and organizes; (b) provides a positive learning environment; (c) sets high positive attitude (encourages competition); (d) mentally prepares, and (e) observes and analyzes.

The sample group, giving themselves higher ratings in these determinants listed above, would indicate that the experts rate themselves lower in areas where there is a large amount of information available and also where demographic factors and personnel have such important effects on a coach's overall effectiveness. Each of those determinants on which the sample group rated themselves higher are also very difficult aspects of coaching to define. For example, communication and motivation are tremendously complex areas that require flexibility and modification in dealing with a particular individual or a particular team. There are no hard and fast rules for dealing with such determinants. The experts obviously acknowledge the importance of these determinants and their personal need to constantly attempt to improve those skills.

The Coaches' Self-Rating scale and the discrepancies

between the ratings given (Table 9) indicate that the Level IV coaches consider their level of development to be almost equal to that of the experts. In comparing the ratings given themselves between the competitive coaches and the recreational coaches (Table 10), a number of discrepancies were noted. These discrepancy scales were originally developed as a form of management profiling (Dyer, 1977) to better understand the discrepancies between the ratings that middle management personnel gave themselves on job performance compared to the ratings that the workers gave them. The implications for their use in sport are discussed in Chapter 5.

In terms of the determinants the competitive coaches ranked their level of development higher than their recreational counterparts. On five of the determinants the competitive coaches ranked themselves considerably higher: (a) creates a good learning environment; (b) possesses good teaching skills; (c) communicates well; (d) maintains discipline, and especially (e) observes and analyses (Table 9).

It is difficult to understand why the recreation coaches would give themselves lower ratings in creating a good learning environment and communicating well, when the major objectives of their coaching involvement revolves around participation and fun. It would appear that even though members of the sample have completed the same requirements in attaining Level IV certification, that the competitive coaches perceive their levels of development to be greater

Table 8

Coaches' Self-Rating Discrepancy Table

Experts _____ Sample --------

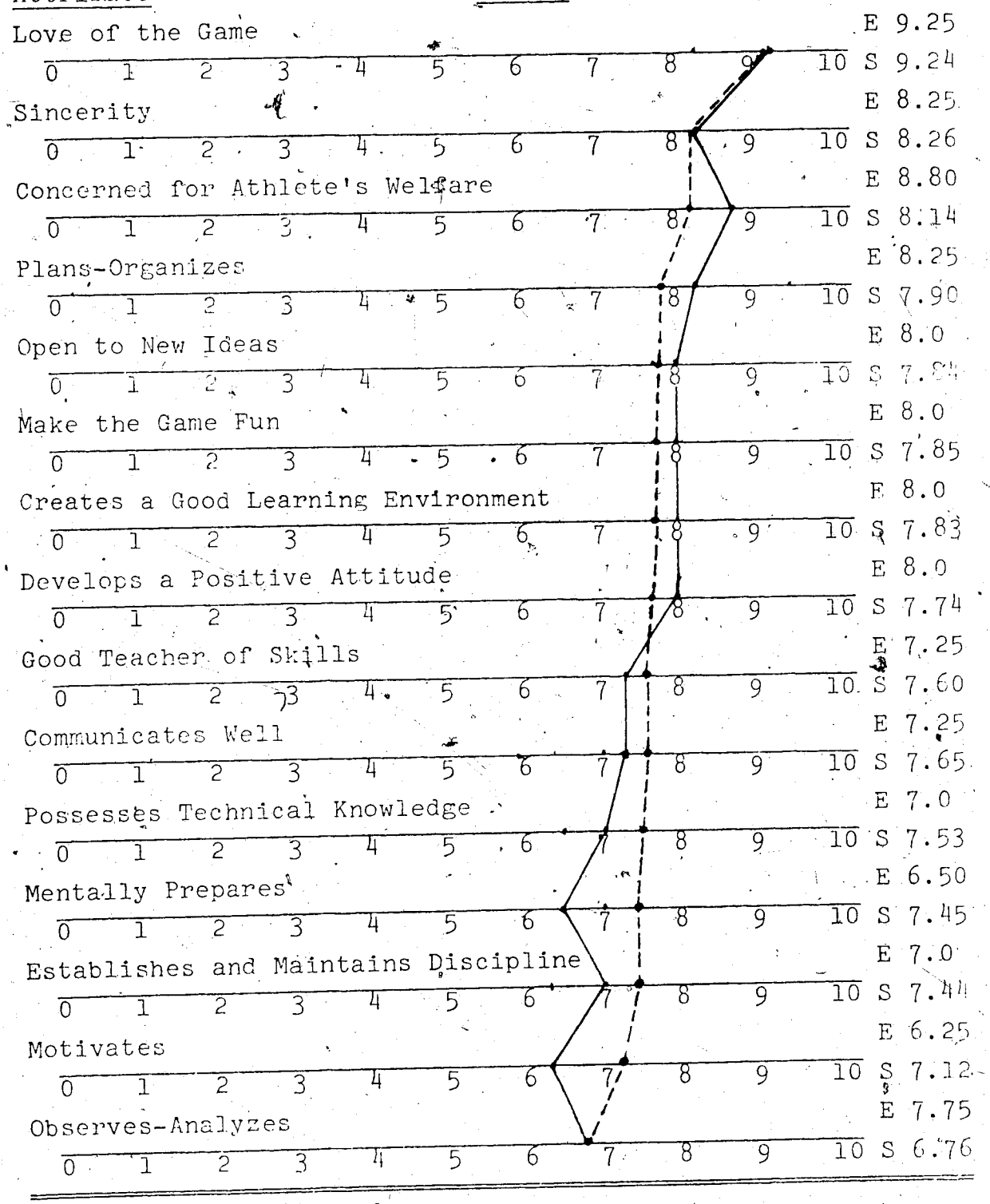


Table 9

Self-Ratings of Competitive and Recreation Coaches

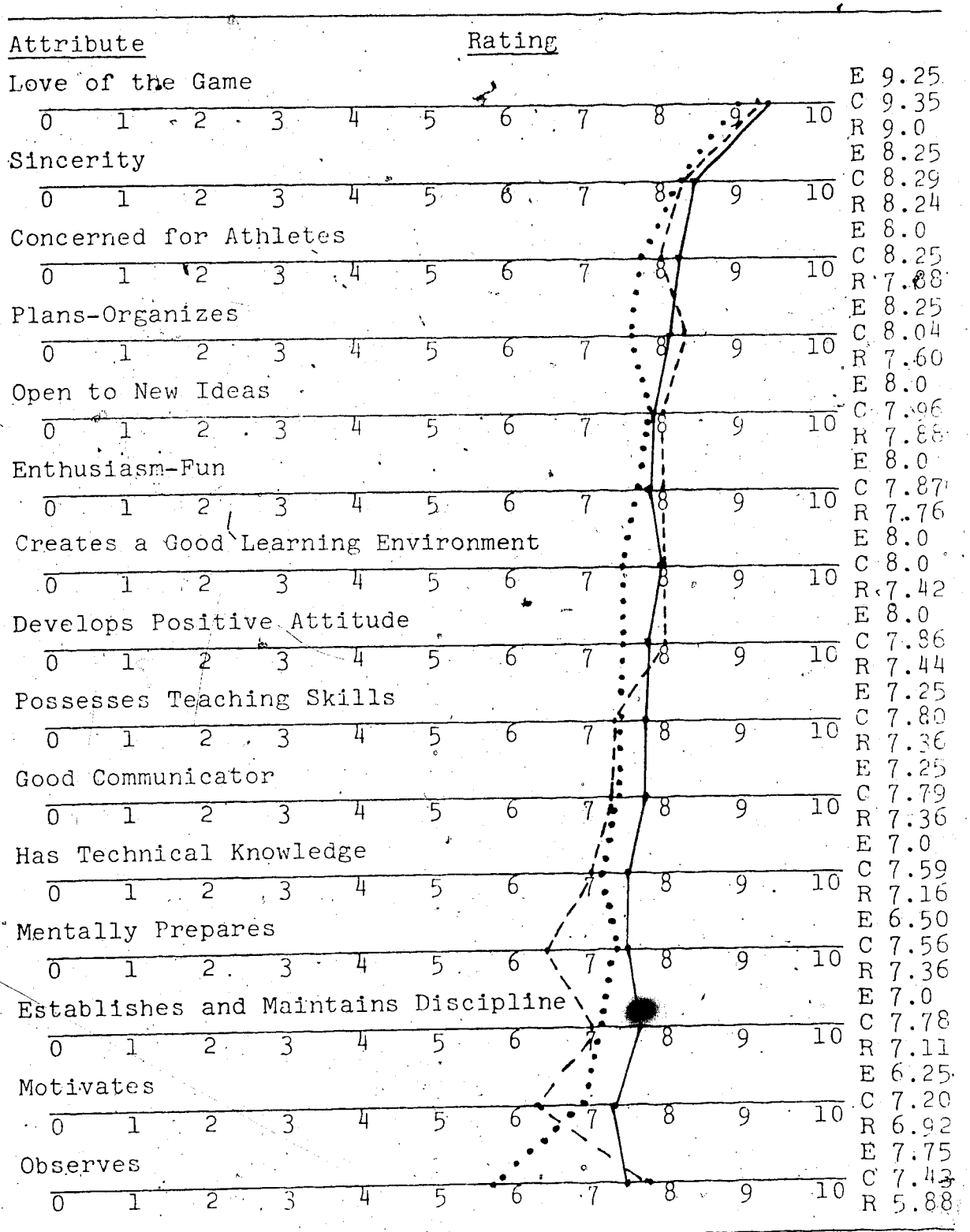
Determinant	Competitive Coaches	Recreational Coaches
Love of the Game	9.35	9.0
Sincerity	8.29	8.24
Shows Concern	8.25	7.88
Plans-Organizes	8.04	7.60
Open to New Ideas	7.96	7.88
Generates Fun-Enthusiasm	7.89	7.76
Creates Good Learning Environment	8.0	7.42
Generates Cooperation	7.86	7.44
Has Good Teaching Skills	7.80	7.36
Communicates Well	7.79	7.36
Possesses Technical Knowledge	7.5	7.16
Mentally Prepares	7.55	7.36
Maintains Discipline	7.79	7.11
Motivates	7.2	6.92
Observes and Analyzes	7.43	5.88
n = 56		n = 25

than that of the recreational coaches. The experts, competitive, and recreational coaches' self-ratings are shown in Table 10, on a discrepancy scale.

Table 10

Coaches' Self-Rating Discrepancy Scale

Competitive Coaches _____
Recreation Coaches .....
Experts - - - - - - - - - -



Factors that Improve Coaching Effectiveness

The Perceived Sources of Hockey Coaching Effectiveness Scale provided some interesting and informative data on what the Level IV coaches do to improve their coaching abilities. For example, the Level IV coaches gave the highest scores to two items: (1) "just thinking about hockey, your team, and how to improve what you're doing" and (2) "attending N.C.C.P. Hockey Coaching Clinics." The mean rating (possible total of 5) given for each of the items on the Coaches' Improvement Scale ranged from 4.14 for "just thinking about hockey . . ." to 1.60 for "attending N.C.C.P. Theory Clinics." The complete Level IV Coaches' ratings of each of the perceived items of coaching effectiveness is included in Appendix E. Table 11 provides the ten highest and the ten lowest-ranked items that the Level IV coaches perceived to be helpful in developing their coaching effectiveness.

Questions 28, 29, and 30 were designed to allow the Level IV coaches to include directly their own personal feelings toward self-improvement, to list which items they considered to be most important and to list what books on hockey have been of great help to them. All of the coaches' responses to number 28 are shown in Appendix E, while those items that received at least two or more responses are shown in Table 12.

Question 29 asked the coaches to select which three items they considered to be the most important of all three

Table 11

Perceived Sources of Hockey Coaching Effectiveness

Rank	Survey Item Number	Statement	Rating
		Most Helpful	
1	15	Just thinking about hockey, your team and how to improve what you are doing	4.14
2	16.4	Attending N.C.C.P. Hockey Coaching Clinics - Level IV	4.13
3	.2	Experience gained through your own games	4.08
4	16.3	Attending N.C.C.P. Hockey Coach Clinics - Level III	4.03
5	17	Reading notes and manuals from Hockey Clinics after course is over	3.86
6	1	Experience gained during your own practice	3.80
7	3	Talking with other coaches or managers of your own team	3.75
8	11	Watching other teams practice hockey	3.61
9	21	Attending other coaching clinics that are meant for coaches in any sport	3.60
10	4	Talking with hockey coaches from other teams	3.55
		Least Helpful	
1	18.3	Attending N.C.C.P. Theory Course - Level III	1.60
2	18.2	Attending N.C.C.P. Theory Course - Level II	1.79
3	18.1	Attending N.C.C.P. Theory Course - Level I	2.25
4	19	Reading notes and manuals from N.C.C.P. Theory Courses	2.16
5	12	Watching teams play other sports live	2.35
6	20	Attending other hockey coaching clinics other than N.C.C.P. programs	2.37
7	10	Watching hockey shows on TV other than games	2.40
8	27	Your experiences coaching other sports	2.54
9	24	Reading articles in the Coaching Review - Canada's National Coaching Magazine	2.60
10	5	Talking with coaches from other sports	2.73

Table 12

Improvement Items Other than Those Listed
(Question 28)

Rank	Improvement Item	Responses
1	Teaching and working at hockey schools	15
2	Experience as a player, knowledge gained from previous coaches	7
2	Listening to new coaches, players and parents	7
3	Teaching school	5
4	Teaching National Coaches Certification Program	3
4	Instructing and working at "elite" hockey camps	3
5	Taking hockey courses at U. of A.	2
5	Progressing through the coaching ranks, e.g., moving up to higher calibres of play	2
5	Communication, goal-setting, and management seminars in business	2
5	Working with Physical Education teachers	2
5	Attending International Hockey Coaching clinics	2
5	Positive influence of father	2

listed. It was interesting to note that a number of items that the coaches did list as most important were not included on the Coaches' Improvement Scale but were outlined in question 28. Appendix E lists all of the 30 responses while Table 13 outlines the top ten ranked items. These "most important items" do vary from the ratings given each of the items (Table 11) but only in terms of the ordering.

Table 13

Most Important Items in Becoming a Better Coach
(Question 29)

Rank	#	Statement	Number of Responses
1	16	Attending N.C.C.P. Hockey Coaching clinics	
	*29	Respondents made special reference to Level IV	63*
2	22	Reading books about hockey	1[illegible]
3	15	Just thinking about hockey, your team and how to improve what you are doing	1[illegible]
3	not listed	Playing experience and experience gained from past coaches	1[illegible]
4	4	Talking with hockey coaches from other teams	16
5	2	Experience gained through your own games	15
6	11	Watching other teams practice	11
7	26	Reading books on psychology	10
8	not listed	Experiences in hockey that were non-playing or non-coaching, e.g., manager parent	10
9	1	Experience gained during your own practice	9
10	14	Watching videotapes or films of your own team	7
10	18	Attending N.C.C.P. Theory Courses	7

Attending N.C.C.P. Hockey coaching clinics, just thinking about hockey, reading books on hockey, experience gained through one's own games, and talking with other hockey

coaches still remain as the most highly valued items.

The last question on the perceived Sources of Hockey Coaching Effectiveness asked the coaches to list the hockey coaching manuals or books which they found to be of great help. This list proved to be very extensive and once again all of the responses are listed in Appendix E while the ten most commonly cited manuals or books are listed in Table 14.

Discussion

The "perceived [illegible] of Hockey Coaching Effectiveness" provided a number of interesting observations. Those items that received the highest ratings were consistent with those ratings given by coaches in other studies done on coaching effectiveness. Similar ratings of the various sources of coaching effectiveness were found in studies by Gordon (1981) on various levels of soccer coaches and by Norwood (1978) on a study of Canadian University level basketball coaches. "Learning from experiences in games and practices", "just thinking about coaching", and "attending coaching courses" were also given the highest rankings in their studies.

The high ratings given the National Coaching Certification Programs Hockey technical program speaks well of the program itself. However, the very low ratings given to the National Coaches Certification Program's Theory Courses seems incongruous with the Level IV coaches' ranking of those determinants of hockey coaching effectiveness that were identified by the experts. The Hockey programs

are oriented toward the technical aspects of the game while the Theory program is more oriented toward the coach understanding the principles of communication, motivation, and the psychology of coaching. The Level IV coaches ranked communication, establishing a good learning environment, and the importance of having good teaching skills well ahead of technical knowledge in ranking the determinants of coaching effectiveness. It appears, however, that this group of coaches favor the understanding of the technical aspects of hockey over the theoretical aspects in improving his or overall effectiveness.

A second discrepancy regarding the issue of the theory courses versus the technical courses arises in question 26 where the coaches ranked the theory program tenth in terms of those factors that they felt were the most important in developing their own levels of coaching effectiveness. The low rating given the theory courses may have also been attributed to the rating scale used to determine the coaches' value of each item. A "1" rating on the scale indicated "no help" or "not applicable", if the coach had never done the thing described. The responses may have just indicated that the Theory courses were "not applicable" rather than "no help" had the coach never attended a Theory Course. The researcher in compiling the ratings disregarded this factor in Question 18.1 because in order for these Level IV coaches to obtain their complete certification, all are required to have at least a minimum of Level I Theory. However, the low

ratings for 13.2 and 14.1 could have been attributed to the coaches' replies falling into the "not applicable" category.

Once again the high priority given these determinants of coaching effectiveness that relate more to the theory program's content than that of the technical program would indicate that their low rating score in this question may have been a result of the item's inadequate scaling format.

The coaches' responses to other sources that improve coaching effectiveness provided interesting items as sources of hockey information and understanding. For example, the most commonly cited response for improving their coaching effectiveness was "teaching and working at hockey schools". Teaching and working at hockey schools provides many of these coaches with practical opportunities to apply both the technical and theoretical information they have encountered in an ideal coaching situation. The Level IV coaches, because of their expertise in the sport, would be expected to be effective instructors in any hockey instructional camp. The opportunity to work in such a setting would offer these coaches' ideal situations to further improve their coaching effectiveness.

"Experience gained as a player and the knowledge of coaching gained from other coaches" was also listed as an important item in coaching improvement. A third item that the coaches identified as being very helpful was "just listening to new coaches, to players, and to parents." The

rewards of interacting with the people just mentioned would be valuable in not just hockey coaching, but in other sports as well. A number of the other top-ranked responses to number 28 included the importance of being involved with teachers and actually teaching school. The importance of understanding and employing sound techniques of communication was mentioned in at least seven of the responses.

The responses to number 29 have already been discussed and the rankings shown in Table 13 are self-explanatory.

Number 30, however, again raised the issue of the importance the coaches place on the theory aspects as opposed to the technical aspects of the game. Of the responses given to this question, none of the most commonly cited books are related to the coach improving his understanding of communication, motivation, or the instructional aspects of the game. All those books shown in Table 17 are technically oriented. They provide the coach with practice drills, team strategies, and conditioning principles. Of all those manuals and books that "were found to be of great help" to those coached (Appendix E), less than ten percent cited resources that directly related to understanding the theory aspects of coaching.

The coaches, once again, seem to be implying that although they recognize the importance of such factors as communication and the other psychological aspects of coaching, they concern themselves with the more immediate rewards of technical know-how. Team play strategies, new

Table 14

Books and Manuals Used for Improving Hockey Coaching Effectiveness

Rank	Title of Text	Author	Number of Responses
1	Hockey Coaching Manuals Levels I-IV	C.A.H.A.	69
2	Level V Proceeding 1970-71-83	C.A.H.A.	28
3	Hockey Systems	Ron Smith	11
4	B.C. Coaches' Drill Book	Danny Gare Ernie Gare	10
5	Czechoslavakian Youth Hockey	-	9
5	Conditioning for Hockey	Lloyd Percival	9
5	Hockey Systems	Michael Smith	9
6	How to Play Hockey	Tom Watt	8
7	A.H.A.U.S. Coaches' Drill Book	A.H.A.U.S.	7
7	European Hockey Drills	-	7
8	Hockey for the Player Coach, and Fan	Fred Sherm	6
9	Hockey Basic I and II	Howie Meeker	5
9	Complete Hockey Instruction	Dave Chambers	5
10	Goaltenders are not Targets	Vic Lemire	4
10	Total Conditioning for Hockey	Joe Taylor	4

innovative practice drills, and skill development, appear to be the priorities in the Level IV coaches' reading materials.

Chapter 5

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to determine what factors are commonly perceived to be important in hockey coaching effectiveness and the ways in which coaches attempt to improve their coaching effectiveness.

A total of 110 Level IV coaches from the Alberta Amateur Hockey Association and an expert panel of four past and present Canadian Olympic Hockey team coaches comprised the study sample. The Level IV group provided information for this study by completing a personality-type indicator in July of 1984 and a follow-up questionnaire in March of 1985. The expert panel provided the determinants of hockey coaching effectiveness used in this study by responding to the researcher's request and also completed the follow-up questionnaire in March, 1985.

Of the 110 questionnaires distributed, 81 were returned, providing a response rate of 74 percent. The first part of the questionnaire collected demographic data on personal background, playing and coaching experience, and the amount of time each individual spent involved in hockey. The average age of the Level IV coaches was 35.8 years of age with a range of 23 to 58 years. Eighty-three percent were married and only 5 percent divorced. Of the group that was

married, 47.5 percent had two children while 30 percent had three or more children.

Over 76 percent had completed post-secondary training and only 2.5 percent had not completed high school. In terms of playing experience, only 3.8 percent had never played hockey, 47.5 percent played Minor hockey, while 48 percent of the group played at the highly competitive Junior, Senior, College and Professional levels.

The Level IV group averaged 7.4 years of hockey coaching experience which ranged from the starters or beginners levels right up to the Minor Professional level. Sixty-nine percent of the group were involved in coaching other sports, with the most common being baseball and soccer.

These coaches spent almost 2 hours per week preparing or planning for games and practices. They also averaged 2.7 hours per week involved with on-ice practices and 4.1 hours per week involved with administrative matters relating to their team. These Level IV coaches spent a total of almost 9 hours per week involved with their hockey team - a figure that does not include the time spent coaching games or the time spent travelling to and from the games. The average number of league games played in the 1984-85 season was 27.6 games with a range of 12 to 72 games played.

Of the 81 coaches who responded to the study, 49 h... winning records and spent .3 hours more time per week planning for their games and practices than did the coaches who had losing records.

Part two of the questionnaire contained four test instruments that were designed to answer the sub-questions of this study. First, the Myers-Briggs Type Indicator measured the preferences each of the coaches in the Level IV groups showed toward the personality traits of: extroversion, introversion, sensing, and intuition. The coaches were grouped according to their preferences toward any two combinations of the above traits and a one-way analysis of variance (ANOVA) was correlated to the percentage of points they attained in their 1984-85 league games. Statistical treatment using one-way ANOVA on the difference of the group and individual means produced an F value of 1.54. The F value (1.54) was not significant at the .05 level and thus failed to indicate that there was any relationship between those personality traits as measured by the Myers-Briggs Type Indicator and the total number of points each coach attained in the 1984-85 hockey season.

Second, both the experts and the Level IV coaches were asked to list by priority those determinants of coaching effectiveness that the expert panel had identified. Using the Q-Sort method for ranking the priorities, both groups ranked those coaching skills that revolve around communication, establishing a good learning environment, and planning and organizing as the three top factors. The experts rated possessing technical knowledge and love of the game only slightly higher than did the Level IV coaches. Within the Level IV group itself, those coaches who were

categorized as competitive (n = 56) rated technical knowledge and communication much higher than did those coaches who were classified as Recreation coaches (n = 25). The Recreation coaches gave higher priorities to, showing concern for player's welfare and making the game fun.

Third, the coaches' self-ratings indicated that the coaches highly regard their personal level of development on each of the determinants of coaching effectiveness. There was only a small discrepancy between what the experts perceived their development to be as compared to the perceived development of the Level IV group. The Level IV group did rate themselves higher than the experts on five of the determinants: (a) communicating; (b) technical knowledge; (c) teaching skills; (d) maintaining discipline, and (e) motivating. Within the Level IV group, the competitive coaches ranked their personal development on each of the determinants higher than that of the Recreation coaches. The largest discrepancy occurred on the self-rating of the following two determinants: (1) observes and analyzes, and (2) maintains discipline. The competitive coaches rated themselves much higher on both of these categories with mean scores of 7.43 versus 5.88 and 7.77 versus 7.11 respectively.

Fourth, various sources of information that coaches use to improve their effectiveness were rated. The items most commonly cited and which received the highest rating by the sample were: attending national Coaches Certification Program Hockey clinics; reading books about hockey; just thinking

about hockey; playing experiences; talking with other coaches from other teams; experience gained through your own games; and working at hockey schools. The resource manuals and books that the coaches listed as being of great help in their coaching were very technically oriented. The hockey coaches in this sample appeared to favor those manuals and texts that improve a coach's understanding of the team strategies and playing skills rather than the theoretically oriented skills such as communication, motivation, etc..

Conclusions

From the results presented from this particular study, the following conclusions may be drawn:

1. Those Level IV coaches who were involved in this study were family oriented, well educated, involved in other sports, and dedicated coaches.

2. Although a well-rounded personality would presumably be a definite asset in improving a coach's overall effectiveness, the results of the one-way analysis of variance between the Level IV coach's personality type and their coaching successes showed no significant relationship ($p = .05$).

3. The skills, knowledge, and attitudes (determinants) considered to be most important to hockey coaching effectiveness appear to be those factors that blend communication, teaching skills, and the psychology of coaching with those of technical knowledge. The determinants of coaching effectiveness appear to be the same for a number of sports, e.g., soccer, judo, basketball, football, etc.

4. Coaching effectiveness can not and should not ever be based only on a coach's won-loss data. Coaching effectiveness must revolve around the coach's ability to prepare the individual and the team to perform to their potential, and to encourage improvement, effort, cooperation, and personal development of those athletes.

5. Those coaches who were involved in this study and who have committed large amounts of energy and time to the coaching program consider their development and expertise on the determinants of coaching effectiveness to be quite high and almost equal to the development of the expert panel.

6. The National Coaches Certification Program Hockey Instruction clinics are the most important source of information used to improve knowledge about hockey coaching. Other highly rated sources included reading books on hockey, just thinking about hockey, and talking with coaches of other teams.

Implications

The personality types of the coaches in this study did not appear to have any significant relationship to the overall success of the teams. However, the coach's personality does in part contribute to many of those factors that were defined as determinants to coaching effectiveness. As suggested by a number of researchers (Ryan, 1981; Shutz, 1975, and Rushall, 1975) predicting behavior and success in sports is not possible because there are no clear and perfectly understood types of personality. Athletes and coaches differ from one another in physiological characteristics, skill levels, and psychological makeup. Psychological attributes of both coaches and players can often change and there are simply no characteristics that are common to each group. A further implication is that traits themselves are difficult to define. With the many situations that a coach is faced with, he or she ideally should be able to have the ability to slide from extroversion to introversion without any difficulty. The

complexity and uniqueness of today's athlete requires that a coach be able to adapt his or her coaching style to the ever-changing individual and group situation. The coach of today must be a master psychologist plus a technician and an educator. Long-range results of trait measurement would appear to be more suitable in attempting to determine the relationship of personality traits and coaching effectiveness.

The implications involved in this study direct themselves to the determinants of coaching effectiveness as developed for this study from the expert's initial responses. Those determinants not only form the perceived factors in hockey coaching effectiveness, but also provide criteria other than won-loss records by which researchers and coaches may view coaching effectiveness. Coaching effectiveness cannot be viewed in a quantitative manner because of the many variables that are involved in coaching.

Jiobu (1984) and Mechikoff and Kozar (1983) found in their studies of successful coaches from various sports that there were many factors that attributed to each coach's success. What was common to all those coaches is that they were able to adapt to the situational factors that confronted them and that they possessed outstanding qualities of leadership in all of their interpersonal relationships. These successful coaches also used various principles of psychology associated with the learning and performing of highly complex sport skills. Those principles of psychology paralleled the deteminants of coaching effectiveness that the

expert panel defined for this study.

The ratings of those determinants further defined the perceived factors involved in hockey coaching effectiveness. In terms of overall effectiveness, no one determinant received more priority than communication. Tutko (1976) suggests that 84 percent of the effective behavior that the coach is looking for in his athletes can come through such communication activities as positive reinforcement, information-giving, and provision of extrinsic and intrinsic rewards.

Communication with athletes that is uniform and frequent with all members of the team not only increases the coach's rapport with his or her athletes, but also increases group cohesion, reduces favoritism, and motivates the athletes by providing them with attention. Coaches must understand that not all athletes respond in the same way to various types of information and should vary the methods they use to give directions and explanations. By also attempting to understand the uniqueness of each athlete in terms of "where they are coming from", coaches are better able to establish open channels of communication. If coaching effectiveness is defined as the ability of the coach to prepare the individual and the team to perform to their potential, then communication holds the key to developing that ability.

The other top ranked determinants of coaching effectiveness that further served to define this subjective study of human relationships directed themselves towards

the importance of: (1) creating a good learning environment; (2) planning and organizing, and (3) possessing good teaching skills. All of the above determinants relate to teaching skills. There is little doubt that the role of the coach is to teach and develop the skills of the participants. Coaches are leaders and teachers of athletes who, within the sporting environment, must prepare their athletes' minds and bodies for competition. If the coach can create an environment that develops an athelete's self-esteem, self-confidence and self-responsibility, an ideal learning situation will develop. If those learning situations are based on concern for the individual and are properly planned and organized in terms of presentation, application, and feedback, there is little doubt that a quality experience will accrue.

Motivation and mental preparation are determinants of coaching effectiveness that relate to the psychological aspects of understanding coaching. Psychological preparation of the athlete should be neither overestimated nor underestimated. The basis of a good performance in sport lies in a systematic and well thought out training program. Such training programs become the natural basis of the general physical and psychic adaptation for the players. The implication is for coaches to understand the psychological sensibility and knowledge required of the performance in order to educate and motivate the athetes. Athletes who receive coaching in this manner will assume more

responsibility for their own development.

The remainder of the determinants of coaching effectiveness provided a subjective framework from which to further understand what is done by good coaches. The importance of a coach possessing technical knowledge, observing and analyzing, and maintaining discipline are self-explanatory. However, developing a positive attitude, generating cooperation, showing sincerity, and being concerned not only fosters encouragement, self-approval, and sharing, but also develops qualities of good citizenship.

The coaches' self-rating scales and the discrepancy tables that resulted from the data can be a valuable source of information in coaching. These discrepancy scales were originally designed as a management information guide to recognize how individuals within a corporation viewed their own performances. These same principles can be applied to coaching. Coaches can use their own ratings combined with player self-ratings and player-ratings on the coaches for assessing performances, relationships, and further improving communication.

The sources of information that the coaches in this study used to improve their coaching effectiveness indicate that there is a lack of resources regarding those psychological aspects of hockey, such as motivation, mental preparation, communication, establishing a good learning environment, and the development of good teaching skills. A further implication is that the Hockey Development Council

of the Canadian Amateur Hockey Association should endeavor to place more emphasis on these factors in their future publications.

There are many factors in improving the understanding and development of hockey in Canada. Through continued research we can further understand those factors that contribute to individuals becoming "good coaches". Also, by improving the resources that are available in order to promote this understanding, our future programs will be headed in the proper direction. Good coaches are the key to this developmental process. There is no one single factor that is more important in the provision of a quality experience for our hockey players of the future than the development of "good" coaches.

Recommendations

The following recommendations are based on the results of this study:

1. To enable future researchers to better understand coaching effectiveness, ethnographic research, involving master or expert coaches should be carried on over a minimum period of at least one complete hockey season.

2. If questionnaire-type responses are employed, they should be followed up with closer, more in-depth studies of coaches and/or teams from within the sample group during the course of a hockey season.

3. Future studies relating to coaching effectiveness should employ various methods of defining and studying the topic. Those methods that can consider the many factors in coaching should be employed wherever possible. Chelladurai's and Saleh's (1980) Multidimensional Model provides cross validations at all levels of sport.

4. Any use of personality trait testing in sport should be limited to long-range longitudinal studies for the purpose of seeking relationships between coaching successes and personality that would be based on coaching records over a long period of time.

5. The Hockey Development Council of ~~the~~ Canadian Amateur Hockey Association should endeavor to develop a wider range of resource materials relating to such psychological factors in hockey coaching as communication, motivation, and the development of teaching skills.

6. Studies involving players on teams of different levels should be developed to determine participant perceptions of coaching effectiveness.

7. Identifying expert teachers and having them identify the determinants of effective teaching might provide a valuable study for developing better teachers for our school systems.

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APPENDICES

APPENDIX A

"1984 Level IV Seminar Criteria"

Alberta Amateur Hockey Association

REGISTERED UNDER SOCIETIES ACT - ORGANIZED RED DEER 1907

No. 1, 7875 - 48th Avenue, Red Deer, Alberta T4P 2K1
Phone 342-6777

TO: All N.C.C.P. level 3, 4, and 5 coaches

FROM: Mr. Dale Henwood
A.A.H.A., Technical Director

SUBJECT: 1984 N.C.C.P. Level 4 Seminar

A provincial seminar is being planned for level 4 of the National Coaches' Certification Program. This seminar will take place at the University of Alberta in Edmonton, Alberta commencing at 7:00 p.m. on Tuesday, July 24, 1984 and concluding at noon on Sunday, July 29, 1984.

The level 4 seminar is designed for coaches of high caliber teams and the purpose of this seminar is designed to provide top level 3 coaches from throughout Alberta with an opportunity to be exposed to top provincial, national and international hockey experts and attain level 4 certification.

Attached, for your information, are details regarding the eligibility criteria and seminar costs as well as other pertinent seminar information.

A. Seminar Description

1. Date: July 24-29, 1984
2. Location: Edmonton, Alberta
3. Purpose: The seminar is designed to provide top level 3 coaches with an opportunity to be exposed to a variety of hockey experts and attain level 4 certification.

The information provided is most applicable to coaches of teams at the bantam and above category.

4. Program: Final topics and speakers are still pending, however, presentations will likely be made on the following topics:

- Offensive Team Play
- Defensive Team Play
- Specialty Situations
- Goaltending
- Motivation/Psychology
- Individual and Team Tactics
- Physiology/Conditioning
- Athletic Injuries
- Individual Skills

5. Instruction:

Instruction will be given by top provincial and national N.C.C.P. instructors and other specialists.

B. Eligibility Requirements

1. Delegates:

In order to be eligible to attend the level 4 seminar as a delegate, a coach must meet the following requirements:

a). must be certified at level 3 with a minimum of 70 percent on his written examination.
b). must have coached for at least one season after attending the level 3 clinic.
c). must have a minimum of three years of coaching experience.
d). must be a member in good standing of their local minor hockey association.
e). must have the signature of at least two references from your minor hockey association executive.
f). must submit a resume of their coaching experiences.

2. Observers:

a. We recognize that some individuals who are not eligible for level 4 certification may wish to attend the seminar in order to upgrade themselves through exposure to the information. Any applications for observer status will be screened by the Coaching Committee.

APPLICATION FORM

Alberta Amateur Hockey Association
National Coaches' Certification Program
Level 4 Seminar
July 24 - 29, 1984
Edmonton, Alberta

1. NAME: _____

2. ADDRESS: _____
(City/Town) (Province) (Postal Code)

3. TELEPHONE: _____ _____
HOME BUSINESS

4. CERTIFIED LEVEL 3 in 19____ LOCATION OF CLINIC _____ MARK _____%
(Approximate)

5. Team coached during 1983-84 season TEAM _____
CATEGORY _____
TOWN/CITY _____

6. Seminar Costs (please check)

A. Delegates			
i. Registration fee	$100.00	_____	(enclosed)
ii. Exam guarantee	$ 50.00	_____	(enclosed)
B. Observers i. Registration fee	$100.00	_____	(enclosed)
C. Meals (5 days)	$ 85.00	_____	(enclosed)
D. Accommodation	$ 50.00	_____	(enclosed)
TOTAL		$ _____	(enclosed)

Mr. _____ is a member in good standing of our Minor Hockey
(Name of Delegate)
Association and we endorse his NCCP Level 4 application.

1. NAME: _____
POSITION: _____
ADDRESS: _____
_____
TELEPHONE: _____
SIGNATURE: _____

2. NAME: _____
POSITION: _____
ADDRESS: _____
_____
TELEPHONE: _____
SIGNATURE: _____

b. Individuals already certified at level 4 or 5 may wish to attend the seminar on an audit or refresher basis.

If these individuals wish to stay at the University, they will be charged at the same rate as mentioned in Section D.

C. Certification Requirements

1. In order to receive level 4 certification, the candidate must satisfy the following requirements:

a. attendance at all sessions of the seminar
b. successful completion of examination requirements.

D. Seminar Costs

1. Registration Fee	$100.00
2. Exam guarantee *	50.00
	$150.00

* The exam guarantee will be refunded to the candidate provided that his exam is submitted by the due date.

3. Each delegate is responsible for his own expenses (transportation, meals, accommodation). For those needing assistance, special arrangements have been made at the University of Alberta residences. The expenses are as follows:

a. accommodation (5 nights)	$ 50.00 (twin)
b. meals (5 days)	$ 85.00
	$135.00

E. Cancellation

Fees will be refunded for cancellations received prior to July 1, 1984. There will be no registration refunds after that date.

F. Application Form

1. Because of the amount of information and material that must be distributed to the delegates in advance of the seminar as well as the time required for the coordination of various aspects of the seminar, we ask that the Application Form be returned no later than June 1, 1984.

2. Return application form to:

Mr. Dale Henwood
Technical Director
Alberta Amateur Hockey Association
#1, 7875 - 48 Avenue
Red Deer, AB T4P 2K1
342-6777

APPENDIX B

"The Questionnaire"

1. COACH BACKGROUND INFORMATION

A. PERSONAL DATA

NAME: _____ AGE: ____

MARITAL STATUS: _____ NUMBER OF CHILDREN: ____

B. TRAINING DATA

HIGHEST LEVEL OF EDUCATION ATTAINED:

GRADE: ___ HIGH SCHOOL: ___ TECHNICAL TRAINING OR COLLEGE: ___ UNIVERSITY: ___

C. HOCKEY PLAYING EXPERIENCE. LIST HIGHEST LEVEL PLAYED.

_____

D. HOCKEY COACHING EXPERIENCE

	CATEGORY OF TEAM(S)	NUMBER OF YEARS	POSITION HELD - HEAD COAC - ASSISTANT - MANAGER
1984-85	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

E. OTHER SPORTS COACHED:

SPORT(S)	CATEGORY	NUMBER OF YEARS	LEVEL OF CERTIFICATION HELD
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

F. TIME SPENT COACHING HOCKEY DURING SEASON:

a) TOTAL TIME SPENT IN PRACTICE TIME PER WEEK _____ HOURS.

b) TIME SPENT IN PREPARATION FOR PRACTICE PER WEEK _____ HOURS.

c) TIME SPENT IN ORGANIZING, PROMOTING AND GENERAL ADMINISTRATION PER WEEK _____ HOURS.

1. How many league games did you play this year? _____

How many did you win? _____ Lose? _____ Tie? _____

2. Every coach is aware of the importance of having high quality players and top assistants on his team. We accept that good players and assistants will always make a coach better. Now lets talk about what else helps. A panel of expert Canadian (Olympic Team) hockey coaches have identified the personal qualities they believe are necessary for success. These are listed below. Please study them carefully, and select the one you think is the single most important. Write the name of that quality in the top slot of the pyramid below in PENCIL (pencil will allow you to change your answers.) Write the names of the next two most important qualities in the slots in the second row and so on.

Plans and organizes well - for practices, games, and the season.

Creates good learning environment - emphasizes the positive, corrects, criticizes, without being too harsh, seen as fair.

Concerned for players welfare - respects and takes interest in present and future welfare of all players; keeps game in perspective.

Good teacher of skills - explains, demonstrates (or has players demonstrate) well, corrects errors effectively.

Generates cooperation - unselfishness, and other positive attitudes and a real team concept among players.

Mentally prepares team - is able to help players prepare mentally for games, especially tough games, and to help them cope with pressure in tough situations.

Motivates - able to get players to set high personal standards of performance, and to produce consistently high effort to meet them.

Open to new ideas - not "set" in his ways of thinking and doing things, will adopt new ideas that come along.

Makes the game fun - allows and/or creates an atmosphere or relaxed fun fairly often.

Sincere and honest - not phony, is a good example (role model) of a genuine person for players to follow.

Possesses technical knowledge - of the skills, tactics, strategies of the game.

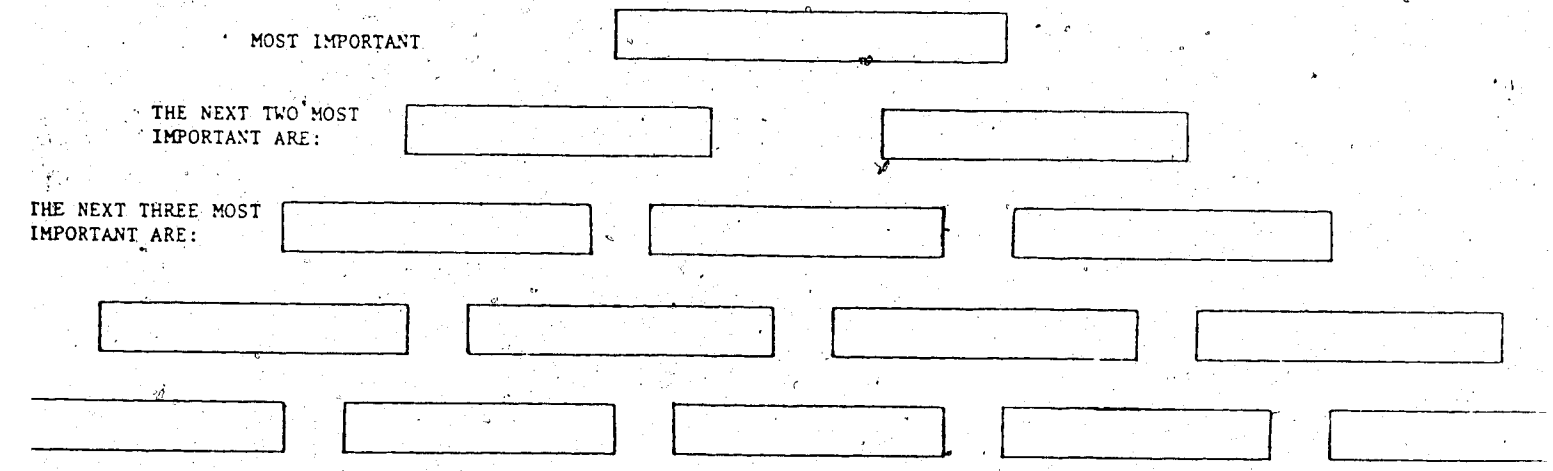
Communicates well - listens to all players and expresses himself so that players understand what he is saying.

Maintains team discipline - is able to help players of very different temperments to develop self-control needed for team success.

Observes and analyzes - the performance of his own team and opponents and indentifies both strengths and weaknesses accurately.

Loves the game - is clearly enthusiastic, enjoys coaching, most if not all the time.

Remember: use a PENCIL - should you have to make changes. If your slot gets messy, just glue a strip of paper over it.



Note: All of these are important, but how you rate them is what we want to know.

3. The 15 determinants of Hockey Coaching Effectiveness as identified by our "expert" panel are again listed. Circle the number you feel best represents your level of development on each of these coaching factors.

Motivates	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Observes and Analyzes	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Loves the Game	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Open to New Ideas	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Possesses Technical Knowledge	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Creates Good Learning Environment	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Develops Positive Attitude	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Sincerity	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Good Teacher of Skills	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Shows Enthusiasm	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Plans and Organizes Well	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Concerned for Players' Welfare	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Mentally Prepares Team	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Communicates Well	1 Low	2	3	4	5 Medium	6	7	8	9	10 High
Maintains Team Discipline	1 Low	2	3	4	5 Medium	6	7	8	9	10 High

4. PERCEIVED SOURCES OF HOCKEY COACHING EFFECTIVENESS, March/85

Your coaching abilities are improved from season to season in a number of ways. We are interested in what you do personally that in your opinion helps you to improve most.

Please circle the number after each item below that best indicates how helpful it has been to you:

1 - No Help or Not Applicable. 2 - Helped a Little. 3 - Helped Some. 4 - Very Helpful. 5 - Most Helpful.

If you have never done the thing described in any item, please circle "1" for "No Help or Not Applicable."

Please Remember: indicate what you believe has actually helped you to improve, not what should, or might, have.

1.	Experience gained during your own practices	1 2 3 4 5
2.	Experience gained during your own games	1 2 3 4 5
3.	Talking and working with other coaches or managers on your team.	1 2 3 4 5
4.	Talking with hockey coaches from other teams	1 2 3 4 5
5.	Talking with coaches from other sports.	1 2 3 4 5
6.	Talking with players or ex-players.	1 2 3 4 5
7.	Watching other amateur hockey teams play live.	1 2 3 4 5
8.	Watching NHL games, live.	1 2 3 4 5
9.	Watching NHL games on TV.	1 2 3 4 5
10.	Watching hockey shows on TV other than games. For example: weekly highlights or a show hosted by a hockey or sports personality.	1 2 3 4 5
11.	Watching other teams practice hockey.	1 2 3 4 5
12.	Watching teams play other sports, live.	1 2 3 4 5
13.	Watching instructional films or tapes that you get out of the library.	1 2 3 4 5
14.	Watching videotape or films of your own team.	1 2 3 4 5
15.	Just thinking about hockey, your team and how to improve what you're doing.	1 2 3 4 5

Remember: Your answers should indicate what you believe has actually helped you to improve ... not what you think should, or might, help.

16. Attending National Hockey Coaching Certification Courses:
    - 16.1 Level 1 Hockey Coaching ---------- 1 2 3 4 5
    - 16.2 Level 2 Hockey Coaching ---------- 1 2 3 4 5
    - 16.3 Level 3 Hockey Coaching ---------- 1 2 3 4 5
    - 16.4 Level 4 Hockey Coaching ---------- 1 2 3 4 5

17. Reading notes and manuals from Hockey Coaching Certification Courses, after the course is over. 1 2 3 4 5

18. Attending National Theory Coaching Certification Courses:
    - 18.1 Level 1 Coaching Theory ---------- 1 2 3 4 5
    - 18.2 Level 2 Coaching Theory ---------- 1 2 3 4 5
    - 18.3 Level 3 Coaching Theory ---------- 1 2 3 4 5

19. Reading notes and manuals from Theory Coaching Certification Courses, after the course is over. 1 2 3 4 5

20. Attending other hockey coaching clinics that are not a part of the National Hockey Coaching Certification Program. 1 2 3 4 5

21. Attending other coaching clinics or conferences that are meant for coaches in any sport. 1 2 3 4 5

22. Reading books about hockey written by coaches, players, or hockey writers. 1 2 3 4 5

23. Reading articles in hockey coaching magazines. 1 2 3 4 5

24. Reading articles in the "Coaching Review - Canada's National Coaching Magazine." 1 2 3 4 5

25. Reading articles in magazines or periodicals other than "Coaching Review," or "Coaching Science Update," about the psychology of coaching. 1 2 3 4 5

26. Reading books about the psychology of coaching. 1 2 3 4 5

27. Your experience coaching other sports. 1 2 3 4 5

28. If you think you have gained improvement out of something that is not shown above, please list it in the spaces below:
    - 28.1 _____ 1 2 3 4 5
    - 28.2 _____ 1 2 3 4 5
    - 28.3 _____ 1 2 3 4 5

29. In the 28 items above include all of the most important things you have done to become a better coach. Now, can you look them over for a minute and select the three that you consider to be the most important of all. List these three in the spaces below. (You don't have to rate these!)
    - 29.1 _____
    - 29.2 _____
    - 29.3 _____

30. During your years of coaching you will likely have read a number of books about hockey, and used a number of coaching manuals or books. Of these books and manuals, list any which you found to be of great help.
    - 30.1 _____
    - 30.2 _____
    - 30.3 _____

APPENDIX C

"The Experts' Responses"

APPENDIX C

EXPERTS RESPONSES

COACH A

Basic Premise:

1. that each coach will possess unique personality characteristics;
2. that these unique personality characteristics will effect the coaches philosophy and "style" which in turn reflect the attitude and philosophy of the athletes with whom he/she works.

As coaching is a combination of intuitive art and factual science, a coach must prepare him/herself as completely as possible in both areas.There is a specialized body of knowledge involved with every sporting activity and it is a major responsibility of the coach to be as completely conversant as possible with this knowledge. He/she is then able to bring to his/her athletes, in a positive, humanistic, enthusiastic, enjoyable environment an opportunity for them to grow and develop their skills in relation to their interest, abilities and potential. The coach is the facilitator in an ongoing process that will provide the athlete with the knowledge and environment to enable them to become more realistic about their individual abilities and potential and, as a result, contribute to their positive overall growth.

His/Her Responsibilities Should Include:

1. developing the abilities and techniques of communication that will allow the coach to bring to his/her athletes the knowledge, experience and methods necessary to maximize their potential. Helping them reach their limits in order to discover and reach for new limits;

2. arranging an environment compatible with the interests and objectives of the athletes with whom he/she is working. The environment should allow for positive player growth from a technical, emotional, social and spiritual aspect while at the same time providing for a high degree of enjoyment (fun) for the participant;

3. showing a genuine interest in the athlete as an individual person, apart from the expectations and concerns for the individual as an athlete;

4. to recognize that his/her example is the most powerful influence that he/she has. The coach is a role model for the athlete. Your treatment of your athletes, your planning, your acceptance of adversity, your reaction to victory or defeat, will to a large measure, be copied by your athletes;

5. to arrange environments that will require athletes to make decisions - and then take actions in an attempt to implement those decisions;

6. to change athlete behavior patterns in a positive manner - not through punishment for mistakes that are necessary in order to learn but through development of the concept that the athletes "best effort" is acceptable;

7. to help athletes learn the skills of a game and work toward maximizing their performance abilities while at the same time developing an understanding of, and appreciation for, other benefits associated with participation.

*NOTE:

As a coach-athlete relationship progresses, the function and responsibilities of the coach will change. As the gap between the athletes' knowledge and that of the coach becomes smaller, the coaching assistance will come in different, usually more personal ways.

APPENDIX C

EXPERTS RESPONSES

COACH B

1. Respect for participants and participant outcomes appropriate to minor hockey age group. (Respect and interest in participants).

2. Ability to instill attitudinal qualities including love of game, spirit of play, fun and enjoyment. (Enthusiasm).

3. Ability to contribute towards player establishing a sound skill base especially in skating and puck control. (Technical side of game).

4. Ability to contribute towards player understanding the game of hockey. (Tactical side of game).

5. Ability to foster intrinsic motivation and interest in participant to set high internal standards of play. (Work ethic, discipline and interest in Getting Better).

6. Ability to communicate honestly and individually with participants.

7. Ability to assist participants in coping with reality factors including external expectations, team success, pressure from significant others.

APPENDIX C

EXPERTS RESPONSES

COACH C

- good athletes - talented
  - attitude - willing to work/learn
- teaching - need technical knowledge as well as the ability to communicate and teach
- enthusiasm
- positive leadership - coach and key athletes
- good assistants (ie. surrounded by good people) who compliment the coach)
- receptive/open to suggestions and new ideas
- praise/positive reinforcement
- sense of fair play and sympathy for players
- discipline
- organized - ie. material, time, facilities, equipment

APPENDIX C

EXPERTS RESPONSES

COACH D

Effective coaching involves a number of factors:

1. knowledge of the particular sport;
2. understanding of mental preparation and psychological skills used in competitive situations;
3. reasonable levels of communication skills;
4. ability to analyze and evaluate both your team and opponents;
5. ability to keep the game in perspective for both yourself and the player;
6. the coach must enjoy what he is doing and therefore be willing to commit the time and effort to do the job.

APPENDIX D

"Correspondence"

Level IV Coaches

Department of Secondary Education
University of Alberta
Edmonton, Alberta

February 28, 1985

Fellow Coach:

I am presently doing graduate work in the area of coaching at the University of Alberta under the assistance of Dr. Larry Beauchamp and Dr. Murray Smith. In July of 1984 at the Level IV Clinic held at the U. of A., we administered a Coaches Preference Questionnaire to all the coaches in attendance. As a follow up to that questionnaire the enclosed questionnaire has been designed to complement my study of Hockey Coaching Effectiveness. The results of the two questionnaires will hopefully give us some insights into, "What Makes Up Effective Hockey Coaching."

Studies of this nature have been carried out in Basketball and Soccer but very little work has been done on Minor Hockey coaches. My study has been approved by the Alberta Amateur and the Canadian Amateur Hockey Associations. Both associations are in the process of revamping their programs and the result of the study could have a large impact on the future direction of our coaching programs.

My purpose in writing to you is to ask you to take twenty minutes to participate in this study. With the number of hockey coaches limited to those who attended the 1984 Level IV Clinic in Edmonton, I need to have close to 100% cooperation if this study is to be useful. Your replies will be held in the utmost confidence. It is statistics that we seek in order to assess patterns of Coaching Effectiveness and their correlations. I believe through this kind of cooperation and sharing of ideas that research in Hockey Coaching can be further developed.

Once you have filled out the information sheet and read through the instructions, the questionnaire should only take a few minutes to complete. I have enclosed a self-addressed envelope for returning the information required. If you have any questions about the questionnaire itself, please call me (collect) at 645 - 5642 in St. Paul. I would like the questionnaire returned before March 25, 1985.

Thank you very much, in anticipation of your response, and best of luck with the rest of the season.

Yours in Sport,

Dennis Zukiwsky

Dennis Zukiwsky

Please Note:
With the intending mail strike, please endeavor to send completed forms back as soon as possible. All respondents will receive a copy of the results of the study.

Expert Coaches

Department of Secondary Education
University of Alberta
Edmonton, Alberta

February 28, 1985

Dear

Thank you for your list of the determinants of Effective Hockey Coaching. With the assistance of Dr. Larry Beauchamp and Dr. Murray Smith we have put together a brief questionnaire on Hockey Coaching Effectiveness.

The theme of my study is to understand, "What are the perceived factors in hockey coaching effectiveness?" Part of the research question revolves around ranking the determinants of coaching effectiveness that (you) the "expert" panel has provided, and the correlating of these rankings with those of the level IV coaches selected for this study. We are also asking you, what degree of effectiveness you perceive to have obtained, at present, in each of the effectiveness factors and what are the various sources of information you use to improve your knowledge about hockey.

I realize this is a very busy time of the year for you and it is with my utmost appreciation and gratitude that I thank you for your cooperation. I will be forwarding a copy of the results of this study to the C.A.H.A.'s Hockey Development Council and also to the Coaching Association of Canada.

Complete the questionnaire and forward it to me in the self-addressed envelope that is provided. I would like the questionnaire returned before March 25, 1985. Your replies will be held in the utmost confidence and will be used for statistical inference only.

Through cooperation and sharing of ideas I believe we can make some significant impact into the future of our hockey coaching programs. Once again, thank you for your expertise and cooperation.

Yours in Sport,

Dennis Zukiwsky

Follow-Up Letter

Box 1741
St. Paul, Alberta
March 25, 1985

Re: PERCEIVED FACTORS IN COACHING EFFECTIVENESS
M.ED. RESEARCH PROJECT - UNIVERSITY OF ALBERTA

Fellow Coach:

A package containing explanatory letters and a research questionnaire was sent to you in respect of the above study. Your package should have arrived approximately three weeks ago. We still have not received your response. If you have not received your material please phone (collect) as soon as possible.

I fully realize how busy you are at the moment but do hope you can find a few moments to share with us your opinions and feelings toward the questions. If you have completed the questionnaire and returned it just recently, please disregard this letter. Looking forward to hearing from you soon.

Yours in Sport,

Dennis Zukiwsky

APPENDIX E

"The Coaches' Responses"

Appendix E

Question 4 Perceived Sources of Hockey Coaching Effectiveness

RANK	SURVEY ITEM NUMBER	STATEMENT	RATING
1	15.	Just thinking about hockey, your team and how to improve what you are doing	4.14
2	16.4	Attending N.C.C.P. Hockey Coaching clinics - Level IV	4.13
3	2.	Experience gained through your own games	4.08
4	16.3	Attending N.C.C.P. Hockey Coach Clinics - Level III	4.03
5	17.	Reading notes and manuals from Hockey Clinics after course is over	3.86
6	1.	Experience gained during your own practise	3.80
7	3.	Talking with other coaches or managers of your own team	3.75
8	11.	Watching other teams practice hockey	3.61
9	21.	Attending other coaching clinics that are meant for coaches in any sport	3.60
10	4.	Talking with hockey coaches from other teams	3.55
11	22.	Reading books about hockey written by coaches, players, or hockey writers	3.52
12	7.	Watching other amateur teams play	3.45

RANK	SURVEY ITEM NUMBER	STATEMENT	RATING
13	6.	Talking with your players or ex-players	3.44
14	14.	Watching videotapes or films of your own team	3.16
15	23.	Reading articles in Hockey Coaching Magazines	3.07
16	16.2	Attending N.C.C.P. Hockey Clinic - Level II	3.06
17	26.	Reading books about the psychology of coaching	2.94
18	16.1	Attending N.C.C.P. Hockey Coaching Clinic - Level I	2.92
19	25.	Reading articles in magazines... on the psychology of coaching	2.86
20	13.	Watching instructional films or videotapes....from library	2.85
21	9.	Watching N.H.L. games on TV	2.80
22	8.	Watching N.H.L. games live	2.75
23	5.	Talking with coaches from other sports	2.73
24	24.	Reading articles in the "Coaching Review".....	2.60
25	27.	Your experiences coaching other sports	2.54
26	10.	Watching Hockey shows on TV other than games	2.40
27	20.	Attending other hockey coaching clinics other than N.C.C.P. courses	2.37
28	12.	Watching teams play other sports, live	2.35
29	19.	Reading notes and manuals from Theory N.C.C.P. courses	2.26

RANK	SURVEY ITEM NUMBER	STATEMENT	RATING
30	18.1	Attending Theory N.C.C.P. Courses - Level I	2.25
31	18.2	Attending Theory N.C.C.P. Courses - Level II	1.79
32	18.2	Attending Theory N.C.C.P. Courses - Level III	1.60

Appendix E

28. If you think you have gained improvement out of something that is not shown above, please list it in the spaces below:

RANK	IMPROVEMENT ITEM	RESPONSES
1	Teaching and working at hockey schools	15
	Experience as a player	7
2	Listening to new coaches, players and parents	7
3	Teaching school	5
4	Teaching National Coaches Certification Program	3
4	Instructing and working at "Elite" hockey camps	3
5	Taking hockey courses at U. of A.	2
5	Progressing through the coaching ranks eg. moving up to higher calibres of play	2
5	Communication, goal setting, and management seminars in business	2
5	Working with Physical Education Teachers	2
5	Attending international clinics	2
5	Positive influence of father	2
6	Understanding principles of co-operation with kids	1
6	Understanding the importance of winning to kids	1

RANK	IMPROVEMENT ITEM	RESPONSES
6	Understanding the importance of maintaining composure	1
6	Developing committment from players	1
6	First Aid Courses	1
6	Reading Health and Development books	1
6	Listening to International Coaches	1
6	Working as a local hockey director	1
6	Self evaluations of coaching performance	1
6	Player evaluations of coaches and self performance	1
6	Watching high level teams play	1
6	Obtaining information on Nutrition	1
6	Developing a self-esteem program for players	1

Appendix E

29. In the 28 items above include all of the most important things you have done to become a better coach. Now, can you look them over for a minute and select the <u>three that you consider to be the most important of all</u>. List these three in the spaces below. (You don't have to rate these!)

RANK	NUMBER	STATEMENT	NUMBER OF RESPONSES
1	16.	Attending N.C.C.P. Hockey Coaching clinics	63*
	*29 respondents made special reference to Level IV.		
2	22.	Reading Books about Hockey	19
3	15.	Just thinking about hockey, your team and how to improve what you are doing	18
3	Not Listed	Playing Experience and experience gained from past coaches	18
4	4.	Talking with hockey coaches from other teams	16
5	2.	Experience gained through your own games	15
6	11.	Watching other teams practice	11
7	26.	Reading books on psychology	10
8	-	Experiences in hockey that were non-playing or non-coaching, eg. manager-parent	10
9	1.	Experience gained during your own practice	9
10	14.	Watching videotapes or films of your own team	7
11	18.	Attending N.C.C.P. Theory Courses	6
12	6.	Talking with your players or ex-players	5

RANK	NUMBER	STATEMENT	NUMBER OF RESPONSES
13	20.	Attending other hockey coaching clinics (not N.C.C.P.)	4
13	21.	Attending Coaching Clinics in other sports	4
13	-	Experience as an assistant coach	4
14	17	Reading notes and manuals from hockey clinics after the course is over	3
14	-	Personal challenge to improve	3
15	-	Working with other coaches	2
15	23.	Reading articles in Hockey Coaching magazines	2
15	25.	Reading articles in magazines ... on the psychology of coaching	2
15	7.	Watching other teams play	2
15	-	Coaching highest level available	2
15	-	Teaching school	2
15	-	Group discussions on hockey	2
15	-	Understanding principles of youth involvement in sport, eg. fun, fair play, sportsmanship, etc.	2

Appendix E

30. During your years of coaching you will likely have read a number of books about hockey, and used a number of coaching manuals or books. Of these books and manuals, list any which you found to be of great help.

RANK	TITLE OF TEXT	AUTHOR	NUMBER OF RESPONSES
1	Hockey Coaching Manuals Levels I - IV	C.A H.A.	69
2	Level V Proceedings 1979-81-83	C.A.H.A.	48
3	Hockey Systems	Ron Smith	14
4	B.C. Coaches Drill Book	Danny Gare Ernie Gare	10
5	Czechoslovakian Youth Hockey	-	9
5	Conditioning for Hockey	Lloyd Percival	9
5	Hockey Systems	Michael Smith	9
6	How to Play Hockey	Tom Watt	8
7	A.H.A.U.S. Coaches Drill Book	A.H.A.U.S.	7
7	European Hockey Drills	-	7
8	Hockey For the Player Coach and Fan	Fred Shero	6
9	Hockey Basic I and II	Howie Meeker	5
9	Complete Hockey Instruction	Dave Chambers	5
10	Goaltenders are not Targets	Vic Lemire	4
10	Total Conditioning For Hockey	Joe Taylor	4

RANK	TITLE OF TEXT	AUTHOR	NUMBER OF RESPONSES
11	Goaltending Fundamentals	Dave Dryden	3
11	In Pursuit of Excellence	Terry Orlick	3
11	Road to Olympus	A. Tarasov	3
11	How to be an Effective Coach	Joe Taylor	3
12	Psychology of Coaching	Tom Tutko	2
12	Hockey Instructional Class	Clare Drake	2
12	Coaching Review Magazine	C.A.C.	2
12	Goaltending	Jacques Plante	2
12	Every Kid Can Win	Terry Orlick	2
13	Game of our Lives	Peter Gzowski	1
13	The Game	Ken Dryden	1
13	The Psychology of Coaching Youth Sports	R.E. Smoll	1
13	Offensive-Defensive Hockey	R. Bukac	1
13	Bowman and the Canadiens	Red Fisher	1
13	Tips on Team Play	Jim Gregory	1
13	Swedish Ice Hockey	Gerry Wilson	1
13	Psychology Today	John Hill	1
13	Professionalization of Youth players	J. Vas	1
13	Mental Preparation	R. Niedefer	1