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Athlete Experience with Indirect Instruction in Synchronized Swimming

by

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Abstract

Bunker and Thorpe's (1982) Teaching Games for Understanding Model has traditionally been used with open skill activities or games; however, in this research it was used as a model of indirect instruction for coaching the closed skill sport of synchronized swimming. The purpose of this thesis was to explore and describe the experience of synchronized swimmers who were exposed to indirect instruction or teaching for understanding. This qualitative case study was collected and compiled through the use of athlete journals, a coach journal, coach observations and interviews with athletes. Three key participants from the researcher-coach's nine-member team were tracked during this study.

This research revealed that teaching for understanding or indirect instruction is an important instructional strategy that should be employed in the closed skill sport of synchronized swimming. Using indirect instruction means providing guidelines for athletes and structuring practices as much as possible around the judging criteria used to score performances in synchronized swimming. Team cohesion influenced the effectiveness of the teaching for understanding model in this research. The athletes in this study displayed the ability to see their actions in context and evaluate their own performances - these are desired outcomes of indirect instruction.

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1. COMING TO THE RESEARCH

I am a product of Canadian amateur sport. I was a synchronized swimmer for eighteen years and earned an Olympic silver medal in 1996.

I grew up in a home where sport was encouraged and revered but not demanded. My brother worked very hard at swimming and trained twice each day. His regimen as a distance athlete made me think that unbelievable effort was normal. I attribute much of my work ethic to his example. My brother also encouraged me to enjoy the creation and performance side of my sport. He brought to my attention the unique opportunity that lay within my discipline. Seeing and understanding the opportunity he brought to light kept me in synchronized swimming at least eight years longer than I would have stayed if I had not listened to my brother's perspective. These eight extra years included two Aquatic World Championships, three World Cups, four French Opens, three Swiss Opens, two Pan Pacific Championships, one Pan American Games and one Olympics.

In a post-Olympic seminar on career choices for elite athletes, I was told that one of my skills as a retired high performer was strong decision making abilities. I was shocked to hear this since I felt like I had left Olympic level sport with no ability to make decisions. I retired from sport knowing how to work really hard and sleep well and eat properly and control my nerves in competition. However, I did not retire from sport equipped to make good decisions.

As a coach today, I believe that an athlete needs to learn more than how to win a medal, but I struggle with that belief sometimes when I am coaching. There are instances when it is just easier to simply tell an athlete what to do.

I have a memory of at least twenty different coaches that I swam for during my career. I had one key coach who gave me confidence. This coach told me that the things I

came up with and the work I did was good and sometimes even excellent. She inspired me to play a significant role in an athlete's development and in her sport success. This coach inspired me to be a coach. I have never tried to be this coach but I often think of her and wonder how she worked seemingly without any effort or struggle.

The competitive season documented in this research is from my first year as the head coach of a team. The coach that I replaced in taking over this team had been coaching for over twenty years. In addition, I had not coached six of the nine swimmers on this team before this season.

My motto is lector et emergo, struggle and emerge. Oddly or perhaps fittingly, the model I chose to use with my swimmers in this research felt like a struggle a great deal of the time. The ultimate outcomes of teaching for understanding are noble and I think worth struggling to reap.

2. BACKGROUND

Canada has been a world power in synchronized swimming since it became a competitive sport in the middle of the twentieth century. The development of elite synchronized swimming in countries throughout the world is both exciting and challenging for Canadians at the close of this century. The demands placed on Canadian synchronized swimmers' physical and mental skills are rapidly expanding and increasing. For Canada to maintain its position on Olympic and world championship podiums, the most effective modes of instruction must be discovered and embraced by synchro coaches across the country.

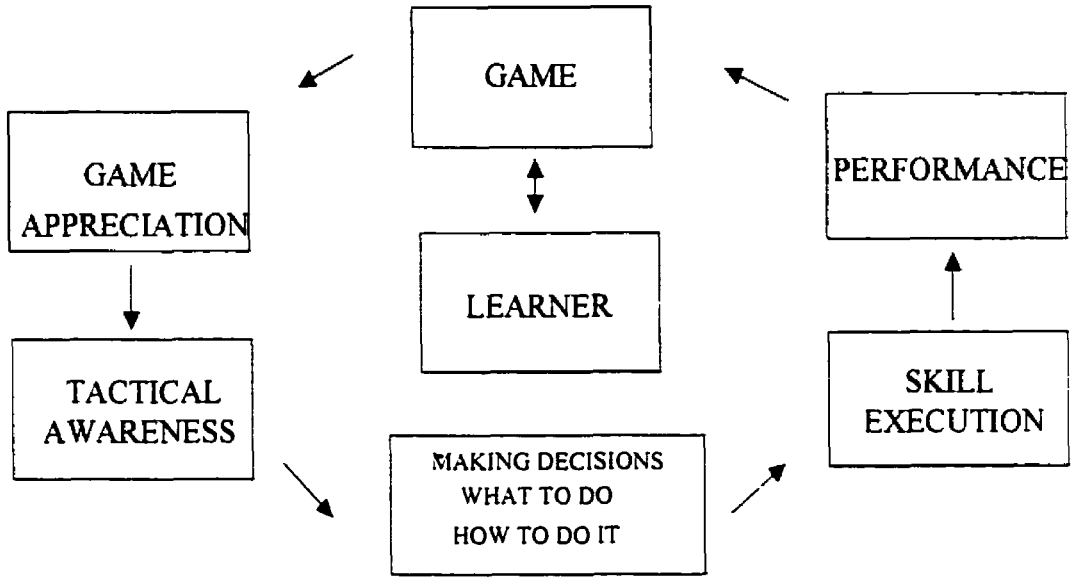
The body of literature and research studies produced by physical educators interested in nurturing successful students provides a valuable resource to consult in an effort to create

excellent synchronized swimmers. However, researchers in the physical education field have favoured the study of games or open skill activities over closed skill sports (Bunker and Thorpe,1986b; Werner, Thorpe, and Bunker 1996a; Mitchell, Griffin, and Oslin, 1994; Gabriele and Maxwell, 1995; Miller, 1995; Rink, French, and Graham, 1996; Werner, French, Rink, Taylor, and Hussey,1996b;). Open skills or games involve an unpredictable competitive environment where the athletes cannot predetermine their required movements (Schmidt, 1991). Closed skill sports like synchronized swimming take place in a stable setting which allows the participant to define every movement they will perform in advance of competing (Schmidt).

3. TEACHING GAMES FOR UNDERSTANDING

Physical educators studying and teaching at Loughborough University in the late 1960s believed that the teaching of games was presenting learners with isolated skills or techniques rather than the game itself (Werner, et al., 1996a). Bunker and Thorpe (1982) worked to develop a model of teaching games that focused on the learners' understanding of the game before focusing on its techniques. These authors believed that the understanding approach to games arose out of the belief that the reliance upon technique teaching in physical education was turning children off of physical activity rather than encouraging a lifelong excitement about it.

Bunker and Thorpe's (1982) model for the teaching of games in secondary schools stems from their belief that teachers emphasize technique before tactics by teaching 'how,' before they teach 'why.' To shift the emphasis to teaching tactics before teaching techniques, Bunker and Thorpe created a model that introduces learners to the game form first as a way of presenting the problems involved in playing games (see Figure 1).



Bunker and Thorpe, 1982.

Figure 1. Teaching Games for Understanding Model.

There are six phases in the Bunker and Thorpe model. In the first phase of the model, the game (or a modification that resembles the full game) is presented. After the game is introduced, game appreciation is developed through learning the rules that shape the game. The learner will discover how points are scored and what skills are required by the game that they are learning as they become familiar with its rules in phase two of the model. In the third phase of the model, learners are introduced to tactics. The learners are taught to identify problems and ways of solving them. Decision making flows out of this step and the learner is encouraged to determine, 'what to do,' first and 'how to do it,' once they have selected an appropriate tactical response. Skill execution follows decision making and the learner produces the required movements only after becoming familiar with why those

movements are important within the context of the game. Finally, the outcome of the previous steps or performance occurs. At this stage, the appropriateness of the learner's response and the efficiency of their technique during game play is measured (Bunker and Thorpe,1982). The learner reaches this point only after working through the previous five stages. The teaching games for understanding model reverses the traditional teaching sequence of introducing skills first and game play last. Bunker and Thorpe (1982) emphasize the sequence of the model as the most important break from traditional teaching because it begins with the game and its rules in order to encourage tactical awareness.

The teaching for understanding model exchanges the traditional focus on specific motor responses for an emphasis on the "contextual nature of games" (Bunker and Thorpe, 1986a). The Bunker and Thorpe model asks learners to build cognitive maps for the content that they are learning and to discover their own options for response within the framework of the game they are playing (Rink, et al., 1996). The teacher facilitates learner insight through game experience. The learner is taught to recognize problems that arise in a game and practices ways of solving them (Werner, et al., 1996a). The teaching for understanding approach allows teachers to exaggerate certain conditions of play to ensure players address the question "What must I do to succeed in this situation?" (Mitchell, et al., 1994). Teaching for understanding instruction asks learners to explore common principles and similarities amongst different games and permits full participation in lessons regardless of physical ability (Werner, et al., 1996b). The teacher who puts the teaching games for understanding model into action is freed up to circulate and help solve tactical or technical problems on a more individual basis (Thorpe, 1983) because learners do not depend solely upon their teacher for direction. This method of teaching allows learners to see their activity as a game "rather than a teacher-determined skill practice which bars them from playing"

(Werner, et al., 1996b). Learners are given the opportunity to play the game and discover for themselves what techniques they need in order to succeed. Through beginning with game play, the teaching games for understanding approach immediately involves the learner in problem solving. The teaching for understanding method stresses cognitive development. Learners come to understand what they need to do to score points regardless of their skill level or physical ability. By connecting the learner to the overall picture of what happens in the game and emphasizing their problem solving role in that image, the game becomes the learner's to experience.

4. FINDING THE GAME IN SYNCHRONIZED SWIMMING

Assessing the similarities between games and synchronized swimming routines is central to answering the question of whether or not a teaching for understanding model applies to this closed skill sport. A player in a game context does not face only one problem and therefore must practice solving the variety of problems presented by a game (Gabriele and Maxwell, 1995). Similarly, a swimmer faces more than one problem in developing and designing a synchro routine. Swimmers should practice creating multiple solutions for the problems presented by a routine. A diverse repertoire of movement patterns that display height in the water, difficulty, accuracy and originality should be developed and practiced by synchronized swimmers.

Just as a game involves craft and cunning (Bunker and Thorpe, 1982), so does the creation of a superior synchro routine. To emphasize difficulty, incorporate recovery time, display creativity, achieve continuous movement and highlight risk, the swimmer must craft a strategic solution to the routine problem. Judges of synchro routines demand and reward points for complex tactical responses. Games demand sophisticated tactical responses from

players (Rink, et al., 1996). There is a strong similarity between the complexity of responses required by games and synchronized swimming. Artistic impression scores are awarded for cohesive and creative choreography with a logical structure of continuous movement that balances a wide variety of elements staged for maximum effect and covering all areas of the pool. Technical merit marks are won through displaying maximum height, accuracy, extension, flexibility, clarity, strength, power, endurance and efficiency. Technical merit scores are also determined by the complexity of movement combinations performed and the inherent risk of the chosen movements in a synchro routine (FINA Synchronized Swimming Manual for Judges, 1998).

A synchro program must solve a large number of problems within a two to five minute time frame. The best solution for the multifaceted problem presented by a synchro routine will arise from an individual who understands the FINA judging criteria for awarding points in synchronized swimming.

Another point that synchronized swimming shares with games is that the common refrain "When can we play a game?" (Werner, et al., 1996a) is paralleled by, "When can we do team?" or "When can we do music?" which are both ways of asking to swim (play) full routines. Bunker and Thorpe's model of teaching games for understanding uses the learners' motivation and enthusiasm to play the game to create a discovery-oriented environment (Werner et al.). Further on this point, synchronized swimmers generally enjoy creating routines and it is a regular part of training. The creation of original routines by synchronized swimmers is similar to the creation of original games by game players, which is an integral part of the teaching for understanding games model (Ellis, 1986). In Turner and Martinek's (1992) study, the teacher investigated tactical problems with the learners by stopping game play and questioning students about the aim of the game. Synchronized swimming coaches

could get athletes choreographing routines on their own, stop them, and then question these athletes about what they are trying to achieve. By questioning swimmers about the aims of their activity, coaches would encourage the athletes to think about what their routine ultimately aims to accomplish.

The Bunker and Thorpe (1982) model asks game players how they will win a point and makes that question central to learning. Synchronized swimmers should be asked the same question and they should have a deep understanding of the list of judging criteria for awarding marks presented in the FINA Judges Manual for Synchronized Swimming (1998). To draw practical parallels between games and synchronized swimming, Appendix A lists indirect games teaching instructions and possible indirect synchro teaching instructions with similar phrasing and intent. The model of teaching games for understanding can be applied to synchronized swimming with some limitations. Central to these limits is the difference between the competition day performance of a game and a synchro routine.

Competing in a game and competing in synchronized swimming are very different. The changing demands of an open skill that confront the game player are not part of the synchro performer's closed skill situation. Open skills involve an unpredictable environment where the participant cannot predetermine their required movements. Closed skills take place in a stable setting which allows the participant to define every movement they will perform in advance (Schmidt, 1991).

Synchronized swimmers choreograph what they will perform weeks or months prior to competition. Games players cannot know what their opponents will do in an upcoming game nor how they will need to respond during game play. Pigott (1982) asserts that what is stored in memory for an open skill are the rules for action and not specific series of movement patterns. In a closed skill environment the competitor has processed specific

movement patterns at a cognitive level that enables near automatic performance of a pattern that has been trained for an extended length of time.

Another difference between games and synchronized swimming is the awareness of points during learning. The games player can see each point that is won or lost (Bunker and Thorpe, 1986a) whereas the swimmer will only receive a score from a judge four or five times each year. In badminton, for example, the clarity of a shuttle hitting the floor is extremely different from knowing whether or not one is performing routines and elements within routines that will score points. Turner and Martinek (1992) believe there is a division between those who can play games because they have acquired a certain skill level and those who cannot play games because they are below this skill level. In the competitive synchro environment, all athletes swim full routines from their first season in the sport. Younger swimmers simply perform less difficult, less complex and shorter routines than more experienced swimmers.

A final possible difference between synchro and games arises from the argument that synchronized swimming is like gymnastics in that it has fewer tactical demands than many games, thus making response execution a more important part of skilled performance than response selection (Rink, et al., 1996). However, Canadian synchronized swimmers share the role of choreographer for their routines with their coach. Choreographic and technical decisions demand tactical awareness and innovative thought.

5. INDIRECT INSTRUCTION: A DEFINITION

The understanding approach to games is also known as indirect instruction. Learning through the understanding (or indirect) approach encourages intelligent performance (Almond, 1986). Solving problems is rewarding (Almond, 1986) and through indirect

teaching, learners discover how to repeatedly reward themselves. Indirect instruction allows students to see the value of specific techniques or skills in game context. Students are likely to view skill practice "favorably because they appreciate the need for these skills within the game" when they are taught indirectly (Mitchell, et al., 1994). Focusing on tactics and decision making, guides learners toward an understanding of the ultimate aims of an activity (Almond, 1986). Direct teaching does not promote student improvisation, discovery or innovation because the instructor tells the learners exactly what is expected of them and how they must achieve it. The indirect method of teaching encourages thinking, designing, adapting and creating (Gabriele and Maxwell, 1995). Indirect, or teaching for understanding, offers a method of achieving the pinnacle of athletic success - a way for athletes to become self-reliant composers in their sport.

6. THE IDEAL CANADIAN SYNCHRONIZED SWIMMER THROUGH THE EYES OF NATIONAL TEAM COACHES

No researcher has asked whether Bunker and Thorpe's model of teaching for understanding (or indirect teaching) applies to closed skill sports like synchronized swimming. It is important to know whether the qualities cultivated in learners through indirect instruction are desirable in synchronized swimmers. I conducted interviews with Canadian National Team coaches in April, 1999, to develop a profile of the ideal Canadian National Team synchronized swimmer. Developing a profile of the ideal Canadian synchronized swimmer through detailing the characteristics or traits that expert Canadian synchronized swimmers possess was intended to facilitate the discovery of the most appropriate instructional strategies for synchro. The aim of this exploration was to discover whether individual problem solving ability, seeing the value of specific techniques in

context, understanding the ultimate aims of performance, and athlete creativity are necessary for international success in synchronized swimming.

Input from the coaches of the best Canadian synchronized swimmers on what they have seen and what they believe it takes to be a champion in synchro is central to discovering whether or not indirect teaching methods apply to this sport. Five Canadian National Synchro Team coaches were interviewed using open questions and neutral probes. At the time of interviewing, four of the interviewees were current National Team coaches and one was retired (Read, 1999). The years of synchro coaching experience represented by the sample ranged from twelve to twenty-six years. The survey questions were used as a guide for discussion; however, all five interviews were not constrained by the survey instrument. All five respondents discussed their experiences and perspectives openly. Each of the coaches thoroughly outlined what they believe it takes to be an expert synchronized swimmer.

When asked to brainstorm the ideal attributes of National Team synchronized swimmers, all five coaches mentioned that certain physical characteristics must be present for an athlete to become an expert synchronized swimmer. These physical characteristics include: long legs (in relation to body length), synchro specific endurance and strength, leg extension and total body flexibility, to name a few. Some of the physical attributes necessary for success as a synchronized swimmer "are changeable and some are not," according to the majority of the coaches. One coach says that both the physical and mental fitness of the athlete are important and that "one can offset the other if it is a real strength...if you have a mental belief system that says, 'I can do whatever I want to do,' and you go out there and do it, that can offset some physical limitations."

Although all coaches agreed that some physical characteristics are essential, they also consistently mentioned a number of cognitive characteristics required to be an ideal synchronized swimmer. In combination, the five coaches define mental fitness for synchronized swimming as the ability to believe in the work and the process, to be mentally tough, self-motivated, curious and capable of critical analysis. These coaches suggest that cognitive attributes must be present in addition to physical attributes in the ideal Canadian synchronized swimmer.

Bunker and Thorpe's (1982) model of teaching games for understanding ensures that athletes address the question, "What must I do to succeed in this situation?" (Mitchell, et al., 1994). Athletes who train with this question in mind practice their ability to critically analyze, seek answers for themselves and understand their sport. Swimmers asking themselves what they must do to succeed in a synchro specific situation are developing and using most of the cognitive abilities that the best coaches in Canada see in their top athletes. Coaches should be able to get synchronized swimmers thinking about what they need to do to get on the podium at international competitions. If asking this type of question does not come naturally to swimmers, coaches need to employ instructional strategies that encourage the necessary cognitive development at the most appropriate time for each individual swimmer.

Overall, the five coaches agreed that certain physical qualities to some degree predispose a synchronized swimmer to greatness. The coaches in this study do not believe that physical aptitude alone will take a swimmer to the top. Although the coaches in this study define mental fitness as a variety of attributes, all five focus on its importance. To summarize, Canadians need to discover instructional strategies that develop athletes' critical analysis, self-motivation, mental toughness, belief in oneself and curiosity. To be the very

best in synchronized swimming, athletes need to be encouraged to think for themselves. Many of the ideal attributes outlined by the coaches in this study are tied to self-reflection. Estimation of performance, reflection and critical analysis by athletes is defined by Lee, Swinnen and Serrien as "cognitive effort" (1994). Lee et al. (1994) argue that the "cognitive effort expended during practice has a critical impact on the learning process" (p. 341). A synchro practice must demand thinking or cognitive effort from swimmers who are expected to think critically about their performance. Instruction that demands cognitive effort maximizes learning (Lee, et al.). The indirect methods developed for open skill sports facilitate cognitive effort. How can the indirect teaching strategies employed by physical educators teaching open skill sports be adapted to develop synchronized swimmers who are successful both physically and mentally?

The survey question that probed the level of understanding elite swimmers have of synchronized swimming was engaging for all five coaches. Three of the five interviewees think that those athletes who succeed in synchronized swimming are those who "see the big picture," and understand how what they do each day "relates to where they want to go." The Bunker and Thorpe (1982) model is based upon connecting the learner to the overall picture of what happens in the game and emphasizing the players' problem solving role in that image. For two of the coaches, the key is knowing "when it is time to give instruction and when they are really open to learning and when it is going to be a benefit and when it is not." One of the coaches states "athletes that I have had that think too much and overanalyze have not been successful - it's almost a trust, to go in there and have a basic kind of ambiguous belief that they are great." Two of the coaches believe that both kinesthetic and cognitive connection are necessary for success. They believe swimmers who succeed are "connecting the brain to the body." In the minds of these two coaches, this kind of understanding is

critical. The indirect method of instruction focuses on tactics and decision making which guides the learner toward understanding the ultimate aims of an activity (Almond, 1986). By emphasizing the big picture and the learner's problem solving role in that image, the learner comes to understand their actions in context. Rather than engaging in over-analysis, the best synchronized swimmers are able to focus on the ultimate aims of their performance, trust their training and believe that they are prepared to perform. The best synchronized swimmers have great intuition and flow. Coaches must cultivate self-sufficiency in athletes to achieve successful international results.

All five coaches believe that the athletes' understanding of synchronized swimming can be encouraged. As mentioned above, two coaches think it is critical to know when and with whom teaching for understanding should occur: "maybe that's the x-factor of a coach." One coach states that she is a "self-responsibility, self-reliance advocate - I think if there is one thing great coaches do it's develop self-reliant athletes." Another coach believes "you can encourage" athletes to "understand what they are doing and how it relates to where they want to go." This coach supports Bunker and Thorpe's model which teaches learners to see the context of their actions, their problem solving role in that context and the ultimate aims of performance. One coach says, "I used to give [athletes] the answers but now I try to get them to give me the answers." The same coach believes top Canadian synchronized swimmers are "over-coach-dependent. If they could think for themselves more when they are in there - that's the key, connecting the brain to the body - quite often I think we are giving them so much feedback they're not doing that. They're just going through the motions." Lee et al. (1994) argue that the "optimal role of augmented feedback is to assist the learner to correctly interpret" the intrinsic feedback they receive when performing. Synchronized swimming coaches need to encourage athletes to interpret their own intrinsic

feedback in training. The athlete who strives to interpret her intrinsic feedback engages in cognitive effort (Lee et al., 1994). The synchronized swimmer who is given augmented feedback by a coach or a peer immediately following every action she performs does not engage in cognitive effort and will not learn to think for herself in the pool. Through indirect instruction, synchronized swimmers will learn to interpret intrinsic feedback. Swimmers exposed to indirect instruction will be encouraged to connect brain to body and develop their understanding of synchro.

Two of the interviewees believe coaches "have to ask way more questions and they [athletes] have to be thinking and feeling way more." One of these coaches cites an example of getting a group of athletes to write training journals "to make them more self-aware...and I think it has helped them with their understanding of the sport." She believes "the best are curious about how they can improve things. The other ones say, I don't know how, tell me." The self-regulation and reflection that these coaches are talking about is a learned skill (Brody, 1994). Synchronized swimmers who are expected to solve problems must be given the opportunity to reflect during their training. Instruction must include openness to the reflection process, having athletes work with other athletes and coaches in a reflective way and getting athletes to make structured observations and reflections about others' performances (Brody). To actively develop the cognitive skills that the coaches in this study believe are important determinants of success in synchronized swimming, coaches should include this type of work in regular training.

The height of athletic excellence is exemplified by athletes who can produce new knowledge within their sport. The coaches in this study were asked if they had ever worked with a swimmer capable of innovation. Four of the coaches said that they have seen a few instances of athletes improvising and producing new knowledge within the sport of

synchronized swimming. The majority of the coaches describe the level of composition or improvisation as a relationship that grows between athletes and their coaches where it becomes "too hard to separate who did what." Most of the coaches agree that "one idea works off of another and people work together" to produce new knowledge in synchronized swimming. One coach states that athletes' ability to "think for themselves and do the problem solving is a limiting factor" for Canadian synchronized swimmers at present. This coach has seen a few composers or innovators and thinks that athletes who produce knowledge within the sport "reach a certain level of confidence and believing" in themselves. These athletes have the "self-awareness to figure out another option" for themselves. Direct or top-down methods of instruction do not foster self-awareness in swimmers. Indirect teaching that demands cognitive effort will work to develop independent swimmers capable of self-evaluation (Lee et al., 1994). The discovery oriented environment that practitioners of indirect teaching create is an environment that the coaches interviewed for this study believe arises out of the right athlete-coach relationship. Again, the interviewees emphasized the role of the coach in setting the stage and allowing innovation to flourish. Both synchronized swimmers and their coaches need a great deal of self-awareness to be able to create a training environment where new knowledge - knowledge that pushes the athlete, the coach and the sport - is produced.

All five interviewees believe that coaches can encourage athletes to improvise and compose within synchronized swimming. "It's an awareness thing, knowing as a coach when and with who to do it." One of the interviewees does not think Canadians "take information and turn it around to create new ideas" enough. One coach asks, "If you don't let them [athletes] think for themselves what are you doing?" She believes that "opening their minds, doing different things, experiencing different things is part of it...if you are only

in your little pool and you work there everyday you don't ever see anything else." This coach believes that "you have to demonstrate it [curiosity]...because if you don't then you aren't encouraging it." The theme of self-awareness for both coaches and athletes emerges as the most important factor in getting athletes to reach the height of athletic achievement. The NCCP defines the pinnacle of athletic success as the point where an individual can improvise and design movements within their sport (National Coaching Certification Program Theory 3, 1994). The Canadian synchronized swimming coaches interviewed for this study agree that creating a training environment that promotes innovation is possible. The instructional methods that foster self-awareness, problem solving ability and independence in athletes that have been developed for open skill sports should transfer to the closed skill setting of synchronized swimming and create a training environment that fosters innovation.

The national coaches interviewed in this study agree that the best Canadian synchronized swimmers they have coached in the past and at present had or have great enthusiasm and motivation to swim. The love of the game is critical to success and one coach looks back and sees that every athlete she has "coached that had success loved being there and loved performing." She also sees that "some loved the training better than the actual performance. But I would say by the end they all loved performing." Two of the coaches find that they are drawn to athletes who display a love of the game and that they find such enthusiasm contagious across teams and coaching staff. "That's why we coach - for athletes like that" - athletes with a great deal of passion for the sport. This coach believes that athletes "with a deep down love of what they're doing...[are] the ones who really make a difference in the end." Another coach thinks that we see love of the game "in varying degrees because it is never going to be identical in each swimmer - but the [Canadian] team

as a whole has had that." This coach thinks "you can encourage it - and I wish I knew how to do it really really well - sometimes you just hit on something that you think was not terribly important and it may spark something in the athlete - or it could be an external thing of some sort or it could be exposure to an international competition or another type of training that all of a sudden makes total sense to them." Two of the five interviewed coaches think that the love of the game or the passion that comes from inside an athlete "is really hard to coach."

Having a love of the game is the trait that the five coaches in this study unanimously support as a key factor for success in synchronized swimming, however, no clear solution for instructing it in a synchro specific setting was made clear. Teaching for understanding "captures the motivation and enthusiasm which students have to play a game" (Werner, et al., 1996b) and uses that enthusiasm to create a discovery oriented, learner-focused environment. The motivation and enthusiasm to train and perform that the top coaches agree is an integral quality of the best swimmers can be accessed and encouraged through indirect instruction.

The ideal Canadian synchronized swimmer who goes abroad to represent Canada at Olympic Games and world championships will have the basic physical attributes specific to synchronized swimmers and well known to people involved in the sport. Beyond those physical qualities, an inner belief in oneself, curiosity and unchecked determination are traits that the best coaches in Canada think the top swimmers in Canada must have to succeed. The ideal Canadian National Team Member is able to see the larger context of her actions and she will make the brain-body connection in order to excel. She is able to critically analyze her performance without overanalyzing it. If a synchronized swimmer is thinking about what she must do to succeed in a synchro specific context she is likely seeing the big

picture, critically analyzing her performance, and making a solid brain-body connection. Coaches must use instructional strategies that will help Canadian swimmers reach the pinnacle of success where they have self-awareness, intuition and flow.

Learning through the indirect or understanding approach encourages intelligent performance (Almond 1986) and encourages self-reliance in learners. The inner belief in oneself, the determination and the curiosity that the top coaches are looking for in the best athletes will not thrive in a coach-dependent athlete. To believe in oneself and have the curiosity to seek out ever-increasing standards, an athlete must have some degree of self-reliance.

The combined responses of the five Canadian National Team coaches involved in this study show that it is not a question of whether or not teaching for understanding applies to synchronized swimming - the question is: How, when, and with whom can indirect methods developed for games be adapted and combined with other instructional strategies to achieve the greatest international results for Canadian synchronized swimmers?

Canadian synchronized swim coaches should be able to harness young synchronized swimmers' enthusiasm to swim and develop technically brilliant problem solvers who are capable of being the best in the world. The theme of self-awareness for both coaches and athletes emerges from the findings of this study as the most important factor in getting athletes to reach the height of athletic achievement in synchronized swimming.

The Canadian National Team coaches support the theoretical outcomes of indirect instruction (see Figure 2).

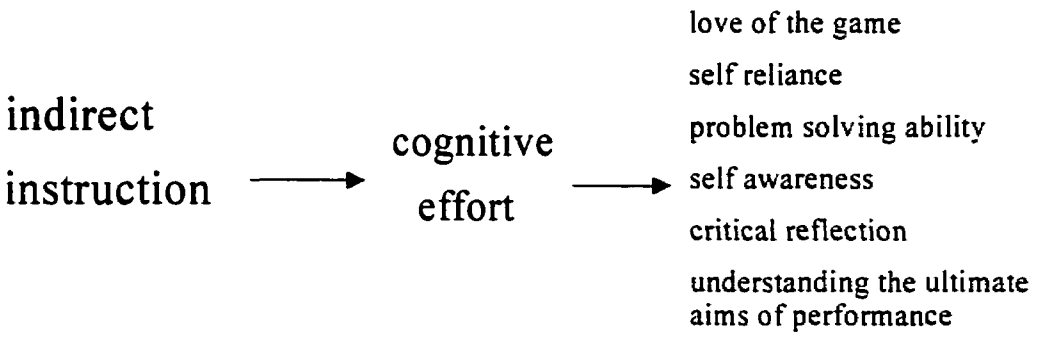


Figure 2. Desired Outcomes of Indirect Instruction.

The critical thinker with the self-awareness and curiosity to find innovative solutions to both artistic and technical problems who understands the ultimate aims of her routine is an ideal synchronized swimmer. Discovering how, when and with whom indirect instruction should be employed will involve participant observation research. The researcher must go to the field and discover what synchronized swimmers who receive indirect instruction experience.

7. RESEARCH CONTEXT

In Canada, novice synchronized swimmers are introduced to fundamental propulsion techniques as well as the most basic positions and transitions that form the foundation of synchronized swimming. Choreography or tactics are generally coach determined in the first

five to seven years of the swimmers' synchro experience. As athletes advance technically in the sport a concurrent artistic maturation is expected.

Advanced synchronized swimmers training in Canada, who are generally age fourteen and over, are instructed through a combination of indirect and direct teaching. The direct portion of the swimmers' program is comprised of general strength and conditioning, synchro specific fitness work and routine specific polishing or "nit pick."

The component of training that can straddle both direct and indirect styles of instruction is technical work. Developing technique or increasing the efficiency of techniques is a critical part of great swimmers' daily practice. A coach may employ direct teaching methods and tell swimmers exactly what they must do technically. Direct teaching is often necessary with less advanced swimmers who are uncomfortable in the water or struggling with a particular mode of propulsion or transitional movement. The coach who enlists indirect methods to help swimmers develop technically uses a more individualized approach. The indirect teaching technique is a problem-solving or creative-alternative-generating experience. The best possible technique for the individual swimmer is sought through indirect instruction. The swimmer and coach work together to discover the most efficient technique for the swimmer when indirect coaching is employed during this part of synchro training.

The part of elite Canadian swimmers' training that is often coached through indirect instruction is the choreography of competitive routines. Most coaches provide swimmers with a tactical blueprint for choreography and then ask the swimmers to improvise to the music within the agreed upon parameters. Athletes collaborate with their teammates and coaches to flesh out the body of their routines. A variety of movements, images and expressions arise from the athlete-coach and athlete-athlete relationships within a synchro

team. The swimmers and coach combine and elaborate upon each others' ideas to create the final product, which is a competition routine. A great routine is a seamless work of strategically placed events that captures the audience's attention from start to finish.

Pride in ownership, authenticity and believability are supported by the indirect style of choreography because the athletes who will perform the routine in competition are involved in the choreographic decisions made during creation. Indirect instruction is at the centre of the creative journey that the most successful Canadian synchronized swimmers and their coaches take together.

This research focused on the preparatory phase of the season when choreography of the competitive routines is the central part of practice. This study will detail indirect instruction as it occurs in a synchronized swim setting and explore athletes' reactions to this method of instruction. Athlete experiences, performances and reflections will be the focus of this research.

8. RESEARCH METHODOLOGY

8.1 Purpose

The most effective methods of instruction for developing ideal Canadian synchronized swimmers have not been studied in the past. This research looked at the impact of indirect instruction on synchronized swimmers' development in an effort to expand instructional theory. In this study, I was the researcher-coach. I worked to discover systematic methods of instruction for this closed skill sport that develop ideal traits in Canadian synchronized swimmers.

8.2 Qualitative Case Study Research

Qualitative research is a process of inquiry that works to build a complete picture of the human issue or question of interest (Creswell, 1998). The profound understanding that qualitative researchers seek is found through "visiting personally with informants, spending extensive time in the field, and probing to obtain detailed meanings" (Creswell, p. 193). There are five distinct methodological traditions within the field of qualitative research, only one of which will be used in this research. Qualitative case study is the most appropriate research method for this study.

The qualitative case study method generates an in-depth description of a bounded system over time (Creswell, 1998). The bounded system in this study was a team of nine nationally ranked synchronized swimmers training together nine times each week with me as their coach. The time of interest in this study was the team's pre-competitive phase of the year. Case study research is an effective method for studying an event, an activity or certain individuals' experiences (Creswell). Qualitative case studies are best suited to the examination of contemporary events in settings where behaviour cannot be manipulated (Yin, 1994). Manipulation of control and experimental groups did not occur in this study. All nine athletes received the best possible program and instruction throughout the research. The strength of a case study design lies in its ability to deal with a wide variety of evidence (Yin, 1994). In this case study, evidence was collected through participant-observation, athlete journals, a coach journal (which included daily training plans) and athlete interviews. Through data collection, a detailed description of the case emerged. Stake (1995) suggests that the description of the case should be followed by an analysis of themes and interpretations about the case. The qualitative case study was used to explore and describe many research questions, including: What do synchronized swimmers who receive indirect

instruction experience? How do synchronized swimmers who receive indirect instruction perceive, create and interpret their world? What are synchronized swimmers' perceptions of indirect instruction? The purpose was to use an exploratory and descriptive approach to investigate the effect of indirect instruction in synchro.

8.3 Participants

Although studying more than one individual case can dilute analysis, case studies that research several individuals can establish depth through cross-case analysis (Creswell, 1998). Creswell recommends three or four cases as an appropriate choice because this number of cases will strike a balance between depth and breadth of inquiry. I coached and observed my team of nine synchronized swimmers as a whole and focused on three members of the team in particular in this study.

8.3.1 Selection Criteria

It is important to select individual cases that will present different perspectives on the experience or world of interest (Creswell, 1998). Three individual cases that represent the best possible cross-section of the team were selected for this case study. The range of age and competitive experience that existed on the team of interest was represented by the three key participants in this study. The key cases were articulate members of the nine member synchronized swim team who were able to convey their perceptions, ideas and reflections.

8.4 Data Collection

The researcher is at the centre of qualitative research, seeking patterns and looking for synthesis (Cote, Salmela, Baria and Russell, 1993). I constructed a comprehensive

description of the athletes' experience and explored the patterns and relationships that emerged from the various data sources in this study. Describing and exploring the whole experience of synchronized swimmers exposed to indirect instruction demanded an examination of the way swimmers "perceive, create and interpret their world" (Cote et al., 1993).

To paint a detailed picture of the athletes' experience, I triangulated multiple sources of evidence. Triangulation provides the opportunity for evidence from diverse sites to converge and make findings more convincing or accurate (Yin, 1994). In this particular case study, evidence from athlete journals, a coach journal, my participant-observations, and athlete interviews were triangulated. The convergence of these data sources created a more accurate and complete picture of the case than any one source of evidence could provide.

8.4.1 Athlete Journals

The swimmers on my team were writing daily journals which I collected, reviewed, and photocopied on a weekly basis. Journaling is a regular part of the swimmers' training program and was not created as a result of this case study. Yin (1994) notes that the strength of documents for case study research lies in their capacity to provide exact, hard copy evidence in an unobtrusive way. The weakness of documents as a data source is the potential reporting bias of their authors (Yin). To combat potential reporting bias by athletes in this study, I communicated the importance of maintaining honesty and openness in athlete training journals before, during and after the study took place. I made the swimmers aware of what indirect instruction is and what the desired outcomes of this instruction are at the outset of this study. The picture of what the athletes experienced was painted together by the swimmers and me, the researcher-coach.

8.4.2 Coach Journal

I was a participant-observer in this study and was responsible for documenting three distinct types of information after each training day during the data collection phase of this study. The coach journal will include the daily training plan, observations of the swimmers during practice, and coaching reflection. The bias of the investigator and selectivity of observation are potential weaknesses of participant-observation (Yin, 1994). My biases and assumptions were recorded throughout the study in order to make the research transparent to all readers. I controlled for selectivity through documenting three diverse sets of information at the end of each training day during the study. Yin cites the ability to produce an insider's snapshot of reality and the opportunity to delve personal motivation and behaviour as the strengths of participant-observation. The daily training plan documented what I planned for each practice. The participant-observation section of my coach journal described the actual events of each training session. The coaching reflection section of my journal pushed me to make connections and look for emerging patterns in the case study.

8.4.3 Interviews

The skilled qualitative interviewer lets the informant know that he or she is interested in how the informant talks about things, sees things and understands their world (Spradley, 1979). The input from five Canadian Team coaches that has been used as a background for this case study was elicited through qualitative interviews conducted by me, the researcher. Unstructured interviews were be used to expand the evidence and information that builds the case in this study. Guiding questions for the interviews emerged from athlete journals, participant-observations from practice, and my coach journal. The interviews focused on feedback about training. Training events also acted as catalysts for discussion in the

interviews. I worked to be a learner and put the informant in the position of the teacher during interviews (Spradley, 1979). The participants were given the opportunity to construct their reality in their words and assign personal meaning to concepts in their interviews. The timeline for this study is outlined below (see Figure 3).

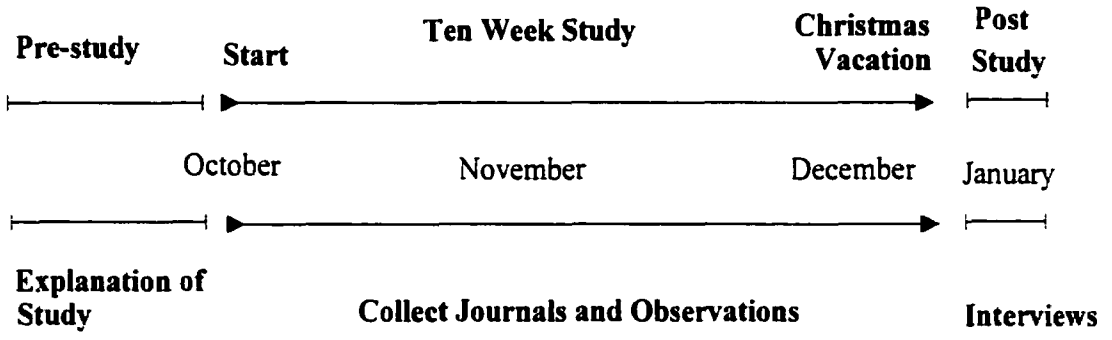


Figure 3. Timeline for the Study.

8.5 Data Analysis

The goal of analysis in this study was to obtain a unified and comprehensive picture of the athletes' experience. Creswell (1998) defines the analysis of qualitative case study research as a three-phase process: description, theme generation and assertion or interpretation. This study was analyzed through interpretational qualitative analysis. Interpretational analysis involves dividing the data into meaningful segments of information and categorizing the data segments according to an organizing system that is principally derived from the data itself (Cote et al., 1993). Tesch (1990) calls the first part of analysis "organization," in which a tag is created for each segment of text that contains one idea, episode or piece of information. The second phase of analysis involves comparing the

variety of tags generated in phase one and grouping the tags into categories. A classification system emerges through coding and inductive inference (Cote et al.). "Theoretical saturation" will be reached when the categorization of new data can be done without creating a new category in the classification system (Cote et al.). This method of analysis was performed manually using typed transcripts of the journal and interview data. Upon completion of the categorization phase of analysis, assertions about the athletes' experiences were made.

Writing itself is a form of inquiry and it provides a way of discovering things about the writer (Richardson, 1998). Throughout the writing of this study, I have interpreted the variety of data and have not endeavored to make myself invisible. I have used the process of weaving together the data in this study as a method of discovery (Richardson).

The final stage of analysis was an effort to expand theory. This case study does not represent a random sample and statistical generalization will not be a research goal (Yin, 1994). The goal of this research was to explore and describe the participants' experience and to determine the appropriateness of indirect instruction for teaching synchronized swimming to the athletes involved in this study. This research may expand theory and generate hypotheses. I have related the case study findings to the theoretical outcomes of indirect instruction.

8.6 Validity and Verification

Marshall and Rossman (1999) state that an "in-depth description showing the complexities of processes and interactions will be so embedded with data derived from the setting that it cannot help but be valid" (p.192-193). Within the parameters of the bounded system being investigated, the proposed research will be valid. The bounded system of study

was the nine-member team of synchronized swimmers training with me during the 1999-2000 season.

Case study research requires extensive verification (Stake, 1995; Yin, 1994). Creswell (1998) suggests a minimum of two procedures be used to verify all qualitative research. This study employed prolonged engagement and persistent observation, triangulation, clarifying researcher bias and rich thick description (Creswell) to verify the research findings.

I was immersed in the culture of the synchronized swim team being studied and worked to build the trust of all team members. Prolonged engagement consisted of coaching forty hours per week for a ten-week period. Persistent observations were made on an hourly basis during practice time and recorded in my coach journal daily.

Triangulation of data sources allows evidence from diverse sites to converge and increase the accuracy of the findings in this research. Themes and assertions in this research have been verified through the convergence of data from athlete journals, observations from practice, and my coach journal. Expanding upon themes or elaborating athlete journal comments in the interviews further defined and confirmed the findings of this case study.

Clarifying the researcher bias allows the reader of the case study to understand assumptions or perspectives that may impact inquiry (Merriam, 1988). I was a synchronized swimmer for eighteen years and am the coach of the team that was being studied in this case study. The biases that may have affected my collection and interpretation of the data in this study include my belief in the soundness and necessity of indirect instruction for synchronized swimmers. Other biases and assumptions that I brought to this research are discussed in sections 1 and 16 of this thesis.

Rich thick description allows the reader to ponder the transferability of the case study because the setting and participants are relayed in great detail (Creswell, 1998). A case study database was assembled so that the sum of all evidence, unaccompanied by the assertions of the researcher, is available for review. The data sources may be cross-referenced to view any particular incident or practice from the perspective of the training plan, participant-observation, or athlete/coach reflection. Although qualitative research does not claim to be repeatable, preserving the data for possible reanalysis addresses the concern for replicability (Marshall and Rossman, 1999).

8.7 Ethical Considerations

All team members were informed of this research and their important role in this study. As researcher-coach, I had to ensure that all nine athletes received the best possible program over the course of the season (1999-2000) when this case study took place. Team members were coached equitably and treated with respect throughout the study.

The identity of all participants is undisclosed and pseudonyms have been used to refer to all of the athletes involved in this study. Journaling is a regular part of the swimmers' training and was not created as a result of this case study. Photocopies of the central participants' journals and transcripts of their interviews were kept in a secure place and shredded once data analysis was complete (September, 2000). The key participants were informed that they may withdraw from the study at any time. A fourth swimmer was treated as a reserve participant and her journal was photocopied throughout the data collection phase of the study. In the event that any of the key participants could not complete the study the reserve swimmer would have been interviewed and included as one of the athletes of focus in this study. Participation in (or withdrawal from) this study did not affect any athletes' rank

on the team of interest. All participants under the age of eighteen were required to gain parental consent before participating in this study.

9. EXPLANATION OF THE STUDY TO THE SWIMMERS

I explained to my team of nine athletes that my research goal was to paint a picture of what we do at the pool through indirect instruction. I told the swimmers that indirect instruction was not something completely new to them and that the process would be business as usual. We read through the consent forms together and I asked for parent calls if clarification was needed. A picture of the Teaching Games for Understanding model helped me describe the research to my team. Some of the swimmers really were not interested in this discussion; while some were intrigued.

I asked if there were questions and one swimmer asked about the purpose of the interviews. We talked about triangulation at this point. None of them knew what this term meant so I next explained that this was a way to enhance the clarity of the picture we were going to draw as a group. By cross-referencing journal ideas with interview discussion and observations, the picture of their training experience would be clarified. I explained that the vividness of the picture that I wanted to create would increase through expanding on events or ideas from our journals in follow-up interviews.

Kit and another swimmer (Lorraine) said that what I was doing was very clear. I next explained to the team that on the road to reaching their full human potential, I wanted them to become innovators, problem solvers and self-aware reflectors. Following this point, I said that the process could at times be messy or frustrating. I tried to explain what I meant by messy by saying, "If I told you exactly what to do in your routines and did not take your input as choreographers, the process would be very tidy and the instruction would be direct." The

swimmers seemed to understand the difference between direct and indirect instruction by the end of this discussion.

10. THE KEY PARTICIPANTS: SASHA, JANE, AND KIT

The criteria for selection in this study included membership on my 1999-2000 team, age, and experience as a synchronized swimmer. I collected all nine athletes' journals once each week and studied only four of the team members' journals for the purpose of the ten-week study. Although studying more than one case can dilute analysis, case studies that involve more than one individual can establish depth through cross-case analysis (Creswell, 1998). Creswell recommends three or four as an appropriate number of cases because this number strikes the best balance between depth and breadth of inquiry. In this research, three cases have been analyzed.

My intention was to track four members in case one of the athletes did not participate fully in the research. The swimmers did not know which athletes I was specifically tracking during this research. I told the team that only three members of the team would be interviewed at the close of this research and that these three athletes would represent a cross-section of the team in my thesis. The four participants whose journals I tracked were chosen because they represented the best possible cross-section (age and experience) of the group. The ages of the four participants were: 21, 17, 15 and 14 years old. The 17 year old athlete in this research was unable to participate fully in training because of injury and is not included in the following documentation and analysis.

Sasha, 21, is a swimmer who has fourteen years of experience in synchronized swimming. She is a current National Team member. I have coached Sasha both part-time and full-time over the past three years.

Jane is a fourteen year old athlete who has been a synchronized swimmer for six years. I coached Jane's solo when she was twelve. This was the first year I was Jane's full-time team coach.

Kit is fifteen years old and has been competing as a synchronized swimmer for eight years. This season was the first time I coached Kit.

11. INDIRECT INSTRUCTION IN THIS RESEARCH

The goal of this research is to build a complete picture of the experience that athletes had during a ten-week period when indirect instruction was employed by me, the researcher-coach. Indirect instruction is a method of teaching that asks learners to solve problems for themselves. The indirect method of instruction encourages learners to think, design, adapt and create (Gabriele and Maxwell, 1995). In contrast, direct instruction does not involve the learner in problem solving. An instructor or coach using direct teaching tells learners exactly what to do and how to do it (Mitchell, et al., 1994). In the following section, examples of indirect instruction from my lesson plans and journal are cited.

The framework for the whole team routine that I presented to the swimmers included the judging criteria for awarding points and videotapes of top team routines from the preceding season. To further emphasize the framework of a whole team routine to the swimmers, I combined the judging criteria and videotapes with a discussion of what a team routine needed to have in it in order to succeed at Nationals.

I began many practice sessions throughout the study with the question, "What must you do to succeed in this event at Nationals?" The swimmers generated their own answers and often, I would record those answers to ensure that we followed through on this vision. I worked more with the less experienced swimmers on generating the answers to this question

than I did with Sasha in her solo and duet sessions. The younger athletes needed more prompting and in some cases, suggestions from me, to get them thinking about what they needed to do to succeed. Sasha combined three years of exposure to my questions about her own success with international competition. The combination of these factors made Sasha more aware of what was required for success in competition than her younger teammates. Sasha came up with most of the answers to the question of what she needed to do to succeed in the solo event at Nationals. Sasha appeared to have the independent thinking style necessary to succeed in an indirect teaching environment.

Near the beginning of the study, the athletes and I generated categories of importance for a team routine performance. The swimmers then improvised to the free team music with these categories in mind (e.g. height in the water, energy, accuracy, originality). I asked what the swimmers took from this exercise and they said that it gave them a feel for the music. Kit said it gave her something to think about. Others said it gave them a chance to understand the music.

At the following practice, I asked the swimmers to generate a profile for success in the free team routine. They said that they wanted to have "wow" highlights that made people eager to watch their team in competition upon seeing them training. We listened to the free routine music and Sasha said that the Americans create all of their highlights first and then choreograph around these key moments afterwards. I felt it was a risk working this way because it might jeopardize the flow of our routine but I wanted to try it because the direction truly came from the swimmers.

Early on in the study, I found that I was seeing the indirect method as very messy, emotional and circuitous with my team. At different times one or two swimmers would remove themselves from the team discussion in the centre of the pool and come to the wall

where I stood. These athletes wanted me to stop the team's solution-making and tell them what to do. I found this frustrating and disappointing at the time. I took it as a personal failure if all nine athletes were not working together towards a solution.

Team highlights are movements that demand six or seven of the team members to work together and lift or throw one or two other teammates in a high risk maneuver. In the second week of this ten-week study, when the team highlights were not working I did not attempt to fix them. The athletes corrected each other and themselves and their highlights did improve. Later in the practice I had Jane and two other teammates get out of the water and look at what the other six swimmers were doing to make a choreography decision.

I asked all of the swimmers to think for themselves about what a perfect "10" transition would look like in compulsory figures and then to perform what they imagined. After this exercise, each athlete told the group what she was thinking about to be a "10." The descriptions of a perfect performance were insightful and on track according to the rules of judging synchronized swimming figures.

At the start of the third week of this ten-week study, I asked the team to tell me what they were trying to describe or express in the free team. Five of the nine swimmers shared their answers to this question. These swimmers described the technical and emotional images they wanted to leave with the judges and the audience in competition.

During the same week, when working on required technical elements I spent half of my feedback time asking questions like: what is the one thing you would change on that element, what did that feel like, and what is this swimmer doing differently from you that gets her height. At some execution stations I used direct feedback throughout the study. There were some athletes that truly disliked being asked questions about execution and wanted to be told what to do.

We did a free team improvisation exercise to the entire free routine music at the next practice. One swimmer requested that we repeat this the next day with half of the team watching and half of the team performing so that good ideas could be seen, remembered and used in the team.

I asked the team to choose a part of the technical program that they would like to fix after they swam the whole routine through once at the beginning of the fourth week of the research. The team had to vote eventually because I told them that I wanted them to come to a consensus as a team. I asked the athletes to make a decision as a team a number of times throughout the study. Most of the time, full agreement was difficult for this team to achieve.

I smiled a lot and felt like we had a good practice in the middle of the fourth week. It felt strange waiting for the swimmers to work things out on their own all of the time this day. When I saw that not every team member was buying in or paying attention to the process I felt annoyed and wanted to intervene; however, on this occasion I kept my voice to a minimum. I guided the creative process by setting parameters for the team to work with. I told the swimmers that they were working really well together as a team and that I really valued that.

The team was to plan a two hour practice based on the question, "What do we need to do to succeed in this situation." The practice did not go well. The swimmers did not bring a plan for what they wanted to accomplish. We ended up getting stuck on some land drill issues and the swimmers were frustrated. The swimmers got very tense and rude with each other - I called them on this behaviour and said that they needed to be good to each other. I asked the swimmers in the afternoon what would have made the team-run practice better and they said more of a plan. When I explained how I made my daily lesson plan some of the athletes recognized that indirect instruction relies on a good plan in the same way that direct

instruction does. It was interesting to see them come to that conclusion without any prompting from me. Prior to this discussion I think that some of the swimmers thought that indirect instruction could be equated to no plan from the coach.

In the middle of week six, the team picked a challenge to perform for each other at the end of practice. The team chose a difficult and very inventive challenge. This choice showed me that the athletes were thinking and creating when given the option to do so.

At the beginning of the eighth week of the study, I asked the swimmers to do variations on the required technical element movements to expand their understanding of the movements. It was strange for them at first but after a few minutes, the swimmers' ability to stretch out and expand the set patterns became quite amazing and creative.

Near the end of the research, I gave the team land drill time and I stayed removed from what they were doing. I watched team members help people who had missed a practice and they worked very well without me directing them.

Sasha wrote in her journal near the end of the study: *The way you are coaching is different - not really different but different to other coaches: it's different because you pretty much let us do everything but following a plan of course, if you did any less it would be like you weren't coaching us - you give us more responsibility...it probably teaches us more - about how to learn to improve more...probably not faster than anyone else but in the long run we understand things more...it's good you get us to think about how to fix it but then you also give us corrections.*

Comments on Indirect Instruction

Early on in the study, I found the indirect method as frustrating and circuitous. I worried about the times when the team members were working on their own but, in my mind, not getting anywhere.

The framework for the whole team routine that I presented through combining videotapes of successful routines, the judging criteria, and discussion was central to indirect instruction in this research. However, focusing on the whole team routine was difficult for the athletes on my team. I think I needed to use this framework more consistently as a reference point during team routine choreography.

In hindsight, I think indirect instruction was accepted by most but not all individuals on my team. The responsibility given to athletes who are involved in indirect learning is great. For a few of the members of this team this responsibility was too heavy. Without acceptance from all team members in synchronized swimming, it is difficult to be successful with indirect instruction.

I could not understand why some days I seemed to have the patience to let things happen without much intervention and yet other days I was not able to let things flow along. When I did not see the work flowing, I saw the team splintering into divergent groups. At these times I intervened and used more direct instruction.

Almond (1986) comments on the rewarding feeling that solving problems brings to the problem solver. I believed all of the swimmers on my team would feel satisfaction through solving problems and finding their own answers. Only one out of nine swimmers was resistant to answering the many questions that I posed to the team throughout this research. This swimmer was eager for competitive success and focused quite narrowly on the way the current national champions (Montreal) are coached. Montreal coaches use a very direct method of instruction that drenches the swimmers with large amounts of feedback.

There were clearly marked moments in the research when the swimmers were eager to take control of their journey and take bold risks. At other times, it was a struggle to get the team to come together and work as a unit on the task or question which I presented to

them. The team element is one of the most important parts of this research that I did not consider as a variable before undertaking this work. The team's ability to come together and think, design and adapt as a cohesive unit determined in large part the success of indirect instruction in this study.

12. THINKING ATHLETES

The Bunker and Thorpe (1982) model of teaching for understanding (see Figure 1) engages learners in "cognitive effort" (Lee et al., 1994). Teaching for understanding or indirect instruction asks learners to discover their own options for response within the context of the game they are playing (Rink et al., 1996). In this research, the synchronized swimmers on my team displayed a varied, yet strong, overall ability to critically analyze and understand the work they were doing at the pool. The thinking themes that emerged from the journals and interviews in this study are: seeing specifics in context, finding solutions, thinking and understanding, evaluation, and the role of videotape feedback.

12.1 Seeing Specifics in Context

Students who learn through indirect instruction should learn to view skill practice favorably because they understand the need for skills within the game as a whole (Mitchell et al., 1994). One afternoon in a compulsory figure session, where athletes perform set technical movements individually, Lorraine said: *Figures are going to help us with way more than National Team Trials - they will help with everything.* This is a great example of an athlete seeing the value of specific techniques and basic skills in a larger context. The techniques learned through compulsory figures apply to all competitive events in synchronized swimming.

Sasha commented in a similar way: *I don't really like figures but they are a good training tool. Figures not only help your sculling, but they teach you accurate lines, control and flexibility...doing the same figure helped increase body awareness and self-correction.*

Kit wrote: *Being Seniors we are largely responsible for our club's success as well as our own.* I think this is an example of seeing and understanding one's actions in a larger context.

Jane talked about keeping the big picture in mind: *The big picture is the Nationals swim...I remember last year thinking oh, this is what we've worked for a whole year and it put a lot of pressure on it because we only had one chance...I think if I'd thought about it more then I would have worked harder for it...thinking about it definitely motivates you more.* Jane learned about the big picture through experience and used her understanding of the big picture to motivate herself.

Comments on Seeing Specifics in Context

The swimmers came to this research with a wide variety of experience and understanding. When exposed to indirect instruction in this study, the athletes showed they were able to understand the context of their actions in a variety of examples. Focusing on choreography and decision making focuses the learner on the ultimate aims of their sport (Almond, 1986). I think the context, or big picture, could be emphasized and reinforced more frequently with synchronized swimmers in order to promote a broad understanding of the swimmers' ultimate aims.

12.2 Finding Solutions

Some days I gave the team the video of a full team performance to watch without me and they shared insight and ideas with each other about what they thought would make the team better.

Five of the nine team members consistently created good pattern solutions and solved mechanical difficulties for the team. I came to rely upon the insight and contributions that these athletes made to the choreography of the team routine.

At the start of the fifth week of this ten-week study, the swimmers and I created a list of what they needed to do to succeed specifically in the last two sections of the free program. The list included: a big cadence on the piano music, simple strokes together somewhere, split boost, twist spin, detailed angle figure, body boosts, cool memorable strokes on the last music, side flutter, angled float on the last music. We checked items off the list as we choreographed them into the routine.

At a practice in the eighth week, I thought that the athletes took control and sent the team in the direction that it needed to go. The athletes were fully engaged in the desired indirect instructional outcomes of thinking and resolving situational dilemmas (Gabriele and Maxwell, 1995) at this practice. It was exciting to see the team come up with solutions for things they needed to work on. The team answered the question, "What must I do to succeed in this situation," definitively at this practice.

Kit said that: *...if a problem is presented to me then I think I'm pretty good at solving it but I don't think I'd go out and find things - I think I'm good at working with what I'm given but I don't pick that exactly out of a routine to fix.* Jane had a similar view on problem solving: *I think I'm a problem solver but I wouldn't really do it unless I was asked to...I wouldn't start looking for problems to solve...*

Comments on Finding Solutions

Bunker and Thorpe (1982) suggest a break from the traditional teaching sequence which starts with basic skills and builds to the final game or routine. As a starting point, I presented my team with the entire five minute routine. The swimmers were involved with finding the best possible design solution to the complex problem of a routine from the very beginning. The majority of the team members were skilled at finding good solutions. Whenever I asked the team what they needed to do to succeed in a given situation many solutions and answers were voiced.

The swimmers were good at finding solutions to problems and questions that I presented to them but not equipped to seek out problems on their own. Both Kit and Jane saw themselves as problem solvers who lacked the ability to recognize problems. I believe that over time Kit and Jane will recognize problems and find solutions for them if this skill is consistently encouraged. Sasha has been asked to discover and solve problems for two years longer than Kit and Jane and her skill in this area is more advanced.

12.3 Thinking and Understanding

The Teaching Games for Understanding model that Bunker and Thorpe (1982) created gives learners the opportunity to understand the game and discover for themselves what techniques they need in order to be successful in the game. The athletes on my team were asked to think, be innovative and understand what they were doing at practice during this research.

In the sixth week of this ten-week study, Sasha recorded in her journal: *Maybe in nit pick there is lack of brain and muscle communication? Meaning, instead of thinking about how to fix it, the swimmer relies on the coach for corrections. They fix it but a few minutes*

or days later they need corrections again, because their mind doesn't remember how to fix it. Maybe you should 'teach' this learning style more...when we do nit pick they need to understand that what they perfect is the correct movement.

When Sasha worked with young swimmers she found it strange: *I would explain how to do it, they would attempt it, but then get it wrong. It was as though they had no connection to their bodies. That would definitely develop over time though.*

Sasha said: *...knowing what the judges want and seeing other people helps me to analyze more. I used to look at my solo and know what was wrong with it but not know how to fix it and now, this year, watching the videos and knowing what the judges are looking for helped me to fix it. In the past I knew there was a problem but I didn't know how to fix it...I think now I am just thinking more and I understand more - the brain body connection.*

Jane loved the library style of choreography (see section 14.3) because: *...it's building the vocabulary thing...it's the best way to put new movements on my body.* She also decided early on in the year that in order to succeed she needed to do more repetition of one section of the team routine where she knew all team members' positions. Jane was thinking about how to be successful and making good decisions that positively impacted her ultimate outcomes in competition.

I asked the team what they thought would have made the team-run practice better and they said more of a plan. This session truly made them think. It gave the athletes a deeper understanding of indirect instruction as well because I explained how indirect instruction relies on a plan in the same way that traditional teaching does.

Sasha and her duet partner watched a video of the world champions in the duet event, a Russian pair, and talked about the differences between the Russians and Canadians. Sasha wanted to know how the Russians train from a young age and how they choreograph their

routines. I could not answer this question. Sasha wondered if the Russians created their own routines. She commented, in her interview at the end of the ten-week study, that creating her own routines helped her development because it got her to make things and think for herself.

Sasha wrote about being able to self-correct and feel her corrections in a movement: *It amazes me how much I can feel my corrections...sometimes I fix a correction midway through a movement...I almost don't need a coach.* She claims this ability arose out of working without a partner: *I just had to fix myself...I think it's just also understanding or remembering once you do the movement right once then being forced to listen to that...I don't do something and not think about it.* Sasha said in her interview: *You have to understand how to do something right and then remember that and think to be good.*

Comments on Thinking and Understanding

Sasha commented far more about her ability to think and understand than did Jane and Kit. Sasha had been swimming for many more years than the others and was six and seven years older than Kit and Jane respectively. Sasha had simply been asked to think more frequently in the past than the younger swimmers.

Fitts and Posner (1967) outline the three stages of learning a skill. In the first stage, the learner begins by drawing upon things or movements they already know. The intermediate stage of learning a skill is characterized by the formation of new patterns from individual learned units. The complexity and newness of a skill in part determines how long this second stage of learning will last. The final stage of learning, Fitts and Posner propose, is the autonomous phase where highly practiced skills become akin to reflexes. Given this theory of skill acquisition, Jane and Kit may have simply been working through the intermediate phase of problem solving while Sasha had graduated to the final or autonomous stage with her thinking and understanding skills.

Kit and Jane were young swimmers who had not worked with me before this season. Both of these swimmers told me in their individual interviews that they were not accustomed to being asked questions by their coaches in the past. I do not think coaches are asking young swimmers many questions or demanding that the swimmers link their brains to their bodies in this sport. However, the youngest team member, Jane, was able to understand everything to which she was introduced and the thinking that she was doing was apparent in her journal. Kit progressed from saying little in team practice to taking on a positive leadership role over the course of this research. Kit's ability to think and understand improved during this study. Sasha had been asked to reflect upon and critically analyze her swimming over the past three years. Overall, it seems that thinking and understanding need to be encouraged over years in order for the processes to become natural and effective for swimmers.

12.4 Evaluation

An important branch of the thinking and understanding skills that synchronized swimmers are encouraged to develop is the ability to evaluate their work on videotape. During this research the use of video feedback occurred at nearly every practice.

Jane wrote about the last figure in the free team: *I really like the figure. I'm glad that we took our time to make it up and didn't force anything. It is really unique and looks really difficult. I just think we need to work on the synch on the last part but it looks good on the video.*

In Sasha and Ling's duet, the swimmers evaluated the first length of their routine using the video and then commented that it looked hard but needed to move more. On

another occasion, Sasha and her partner said: *We need to make the fast stuff obviously fast for variety and contrast...the music really goes high after the combined spin and we're not.*

Sasha's evaluation of her solo programs was done using the video of her routines and reflecting on the videos of past winning solo routines. She synthesized her work with the swimming of past champions to complete an incisive evaluation. Sasha determined what she needed to revise and create in order to be successful in the solo event at Nationals.

Comments on Evaluation

I think every member on the team improved her capacity to evaluate routines during this research. We discussed evaluation at length and used it very consistently. As evident in their comments, some of the older swimmers got to the point where they could evaluate their routines as a judge would evaluate them. This skill grew out of the indirect instruction they were provided with during this study. The younger swimmers needed more time and experience to get to the level of evaluation that Sasha reached.

12.5 Videotape Feedback and its Role

In a team meeting half way through this study, the athletes told me that they liked to use the video as much as possible so that they could see what they were doing. I had a stigma attached to the video because one of the coaches I swam for videotaped everything we did but never coached us. I also found that the things I saw through the small video lens were quite different from the things that I saw with the naked eye and that through videotaping I was missing things. However, in spite of my misgivings, I videotaped the team at nearly every practice as a result of their request.

Sasha said: *...watching other videos really helps. I don't really think at competition about why people do better than me but watching the video I can figure it out*

Jane liked the video because she found: *it's easy to look at it (the video playback of her swim) and feel on my body what I should try and fix.* Jane believed that about 70% of the time she found herself able to do just that type of self-correction. She thought she had always had that ability.

Sasha wrote: *I really like watching the video for team purposes. It gives an overall 'big picture' impression which helps during choreography...it allows more input from everyone. The coach isn't the only one who gets to critique. It allows swimmers to be the coach or the judge. It allows for more valid input on how to make something look better.* Sasha wrote on a different day: *Maybe we needed to see the video (of team) to admit to ourselves that we really need to swim it better.*

Sometimes the video was not helpful. Jane felt really disappointed when she saw her weakest figure in the video and could not decide if watching this figure helped or hindered her improvement.

Comments on Video and its Role

The video was an invaluable tool in this research. Bunker and Thorpe (1982) advocate putting the ultimate aims of the sport at the centre of instruction. Through showing the athletes a picture of what they were doing and combining that picture with a discussion of the elements that would score high marks in competition, I was able to make the ultimate aims of the routines central to learning. Through combining the videotape with a discussion of evaluation, I used the video not as a crutch but a ladder for indirect instruction. Videotape feedback gives swimmers the opportunity to recognize problems and generate solutions for their routines.

13. RULES OF THE GAME: HOW TO SCORE POINTS WITH JUDGES

Bunker and Thorpe's (1982) Teaching Games for Understanding model focuses the learner on the game first and develops an appreciation for the game through teaching the rules that govern and shape the game first. The rules are introduced early on so that learners can begin to make decisions about what they need to do in order to be successful from the outset.

At one of the first practices in this study, I introduced and described the judging criteria or rules for synchronized swimming to my team. The swimmers made posters of the six categories of analysis that a judge uses to evaluate a routine in synchro. Sasha and Jane found the creation of the posters quite fun.

Jane thought that she learned a lot about the one category for which she created a poster but thought all six categories needed to be reinforced more often. Prior to this season. Jane had never been exposed to the areas of evaluation for routines. Sasha said that she knew the judging criteria before this season but did not always know what excellence in each category entailed.

Kit did not feel that looking at the categories of analysis changed our routines. *The specific choreography didn't reflect directly on all of those (criteria) but in the instances where you said we have to have more difficulty or whatever - I think that was good - when you did touch on it it was good.* Kit believes that: *Focusing on one category or all of them limits your ability to come up with something that really suits that part (of the routine).*

In the middle of the fourth week of this ten week study, I noted that I needed to revisit the judging criteria with the team because they were evaluating their work on the video without mentioning the criteria judges would be using to mark them with in competition.

The following day, we watched a video of the first draft of the team technical routine. I asked the swimmers to comment on the six components of synchro on which judges base their mark in competition. The swimmers began talking about specific corrections and I intervened to say that I thought there were three categories that we could really evaluate at this point in the season: choreography, music interpretation and difficulty; however, I did not think that we could evaluate execution, synchronization and manner of presentation at this time. The swimmers understood that choreography, music interpretation and difficulty were the areas we had set through creating the routine. I explained that execution, synchronization and manner of presentation were the areas we would work on once we were satisfied with the choreography choices that we had made.

In Sasha's duet, I asked the two swimmers for an evaluation of their routine based on the judging criteria. This was a good process to go through as each partner had something valuable to add to the analysis of the duet routine.

For Sasha's solo draft evaluation, I provided a sheet for her to refer to while she watched the videotape of her routine. This page listed the judging criteria and brief definitions of the six categories of analysis that all judges use to evaluate synchronized swimming. She said that her figures did not look as difficult as they actually were to execute and that we should change some of the moves to more obvious, traditional elements that would show difficulty. Sasha thought her music interpretation was good. She realized that her choreography lacked variety because too many of the movements looked the same on the videotape. We next watched a video of a former Canadian champion's solo and Sasha commented on what she believed was good about it: precise movements, clear execution of difficult things, and obvious sustained height. After this assessment we began revising the routine based on Sasha's evaluation. This is an example of an athlete who successfully

combined her knowledge of the rules or judging criteria with images of winning routines from the past to critique her own work. The result of Sasha's efforts was a superior solo routine.

At the end of the eighth week, when I asked the swimmers to evaluate the team free routine they did not refer to the judging criteria. This showed me that I either needed to emphasize the criteria more regularly or that the success they had seen in the past in this sport did not seem to be determined by the judging criteria as listed in the rule book for synchronized swimming.

Comments on the Rules of the Game

I do not think that I revisited the judging criteria in the team setting enough throughout the study. I was better at returning to the rules and using them to evaluate the solos and duets that I coached. I think I did less repetition of the rules with the team because of the number of diverse responses I got from the team on most topics. This team did not agree easily.

One swimmer commented to me at the end of the season that she thought this was a difficult team to work with because the experienced members were internationally seasoned athletes and the younger members were talented leaders who felt like they had to voice themselves in order to prove who they were and play a role on the team. Most of the categories, themes and questions that I am left with at the end of this research are tied to the variable of team. I look back and see that I needed to get this team to listen to each other, consider each other, help each other and accept each others' differences. Bringing the team together into an effective and cohesive group would have increased the impact of indirect instruction with this group. This will be discussed in greater detail in section 19 of this thesis.

14. CHOREOGRAPHY

Choreography in this research refers to the creation of a set series of movements to music that becomes a synchronized swimming program or routine that will be performed in competition. The choreography phase of my team's season is documented in this research. Most Canadian synchronized swim teams spend the fall and early winter months building their routines for the competitive season. Qualifying meets for Canadian National Championships in synchro begin at the end of January. Choreography is usually finished by the Christmas break. The collection of data in this research covered the ten-week period leading up to Christmas vacation.

Early on in this study, I noted that there was a five-step pattern to the way we were choreographing the team routines: I would set the parameters loosely for what was required in the routine (e.g. strokes, figures, highlights). Then, athletes would work in groups of two or three with the music, improvising and then performing a set of choreography for the other athletes and myself to watch. I would next ask the athletes what choreography they thought would be best for the team. It often got tough at this point because movement that works well with two or three people does not always look good in a group of eight. We would next work through the movements in team formations or patterns. During this fitting stage, everyone worked together to find the best fit or to further develop the group work. This indirect process allowed the swimmers to be as involved as they wanted to be. I often wondered if the athletes who rarely said anything in this process truly had nothing to contribute. Sasha and Kit commented on choreography often during practice. Jane would write about choreography in her journal but did not contribute to the team dialogue in the water when

they were choreographing the team routine. Jane had ideas for the routine but was not comfortable expressing them to her teammates.

During choreography, I sometimes felt as if I was doing a nonintervention with indirect instruction because I believed that if I had given the swimmers finished choreography they would not have enjoyed what they were doing. I would have altered the essence of the athletes' sport if I had given them a routine to learn and repeat.

Jane noted that in the 11-14 age group there was not much variety in the choreography that the swimmers created: *...there isn't a very big vocabulary and its really expanded for me just because they (older swimmers) have a different view of strokes and stuff.*

I asked the swimmers if it made a difference to them whether the idea to set our highlights first came from a swimmer or coach. Jane said it did not make a difference and that the important thing is to have good ideas.

During the choreography stage, Sasha liked using the video in team because it allowed: *swimmers to also be the coach and judge and for more valid input on how to make something look better.* Most of the athletes on the team wanted me to videotape their routines so that they could evaluate their work.

Comments on Choreography

The team wanted to have great routines. An interest in choreography was common to all nine athletes on the team. Indirect instruction encourages designing, adapting and creating (Gabriele and Maxwell, 1995). I believed I could get the athletes to become creators and innovators much more quickly than I now realize they could. As with most of the desired outcomes of indirect instruction, more time was needed to see the growth of these skills in synchronized swimmers.

More specific categories of choreography that emerged from the journals, interviews and reflections are discussed below. The categories that contributed to choreography in this research were: comfortable to create, creating a library, art and perfection, no parameters, choreography roles, and the creation atmosphere.

14.2 Comfortable to Create

Kit found it took time to get comfortable with expressing herself to her new teammates but that as it developed: *...it's very hard to perform in front of someone else on a whole new team...it's difficult to express yourself to your full potential when you don't know everybody on the team.* Kit did not feel comfortable sharing her choreography with her teammates at the beginning of the season but found that she could open up over time. Sasha agreed with this: however, as a veteran of this team she noted that it would only be difficult in the beginning for the new people to the team.

Jane talked about one of her teammates who was willing to do anything and create without inhibition: *...she just doesn't even think about it...she just kind of does it and comes up with cool stuff. I think I'm more willing to try that now.*

Comments on Comfort

The comfort level of the swimmers during creation is an area I did not account for at the outset of my research. I suppose I was so far removed from being the youngest on a team and being self-conscious or shy about expression that I forgot that it might be part of this journey. Once again, it is clear that I needed to assert my role as coach-coordinator. The coach of a cohesive team effectively brings the diverse talents and backgrounds of the athletes together to create a synergistic team that is stronger than the sum of its parts (Yukelson, 1997). Perhaps if I had encouraged and celebrated the contributions of the

younger members of the team more, the creation setting may have been less intimidating for them. Indirect instruction affords the opportunity for every learner to play a role in the creation of a team outcome.

14.3 Creating a Library: Playing on the Video

Well into the study, I decided to try a new style of indirect instruction with my team. I developed a different way to choreograph with the team and the swimmers called it the library. I asked the swimmers to improvise by themselves and play around to the music that we were going to set choreography for later. I videotaped the swimmers' individual improvisation to the team music. We spent time watching the videotape and allowing swimmers to develop ideas that they liked - either their own idea or someone else's movement that they saw on videotape.

At the beginning, there were only a few people improvising but by the end of the session nearly every team member had developed something unique. We finished by showing each movement and called this creating a library of movement that we would draw on when we were setting choreography for this music. This method seemed to be enjoyable for everyone involved. It took more time but developed more original work than our traditional mode of creation.

Kit enjoyed the library approach: *It was good to look at what everyone else was creating...to look through and find moves that we liked and didn't like and centre around those and then go out and do it again and get more specific - I liked that idea...you don't feel so self-conscious because we are all watching the video to find things we want to do.*

Sasha thought the library approach was good: *because it was hard music to make up to and being taped and not having to worry about what you were doing, just sort of doing*

what you want probably brought out more creative movements or more different movements than we would have made up in a group where you're trying to synchronize with everybody.

Jane had never worked with the library approach before but liked it a lot because: *you could watch someone and try to do what they did and even though it would be different it would be cool still - I really liked choreographing that way.*

Comments on Creating a Library

I will use the library approach to choreography again because it was so enjoyable and successful for a wide variety of swimmers. This method of creation is one of the greatest discoveries I made through using indirect instruction in this research. Asking the athletes to build a library of movements got them thinking, adapting and improvising. Based upon the comments that all nine athletes wrote in their journals, I think the library method freed the swimmers. Creating movements for the library allowed each swimmer to innovate without judgment and enabled them to go beyond the constraints of our regular structure.

14.4 Art and Perfection

Typically, a coach works together with her team and choreographs the club team routine in the early, pre-competitive months of the synchro season. At Canadian National Championships in May, individual swimmers from clubs are selected to form new national and provincial teams who train together and compete during July and August. The provincial and national team athletes often learn a new team routine that was not choreographed in their club. The schedule is cyclic and works much like a school calendar. Because of their experience with club, provincial and national teams, Kit and Sasha were able to outline the differences between learning someone else's routine and being part of the creation of their own routine.

Kit did not think it would be bad to be given a team routine to learn - finished and ready to perform - because she had learned routines and swam them before and found that they were easier to perfect when they were complete: *I think it would probably look better...it just wouldn't be as personalized...in the end it wouldn't feel like it was your piece of art.*

Sasha thought that swimming a routine that was already choreographed: *...would be like swimming on the National Team - it makes it easier to get things perfect and get it more the same just because you don't change things, you don't debate how something is done, it's set...I think it would be boring though, that's the most fun part - making up - it probably also wouldn't help your development, to think for yourself and make things.*

Sasha found that swimming someone else's solo for the National Team and therefore not being involved with the music selection or choreography caused her to: *...just swim it and I didn't have any feelings for any of the music or anything...when you interpret the music yourself it's more of yourself in it rather than copying someone else's movements.*

Learners who receive indirect instruction are asked to discover their own options for response within the context of the game they are playing (Rink, et al., 1996) or synchro routine that they are creating. Because the aim of this research was to get swimmers to develop their own design solutions for the complex problem of a routine, I asked the swimmers if they felt like they owned the team technical routine. I asked if they were invested in it and if they had a sense of pride upon completing the choreography of the routine. Kit felt that early in the season she was not really open with the team and comfortable doing choreography with them. *I felt like I was learning more - I contributed but I was learning the choreography and now (January) it's more personalized, now I don't feel like I am swimming someone else's routines. At the beginning it wasn't like a personal piece*

of work of mine. I have become more comfortable expressing things with everyone. Sasha wrote: *The technical team routine is completely ours.* Jane had a different perspective. She wrote in her journal: *I feel really proud to be swimming our team even though I didn't come up with the ideas and movements. I have always looked up to every single person on the team and admired their routines. I think it is neat just to do the movements they made up.*

Kit believes that if the team was given a routine rather than creating their own, "*you wouldn't feel like it was your piece of art.*"

Sasha believes: *Your routine is your little work of art and everyone puts what they really want in it - if you made it up for us we'd lose that whole artistic side of the sport.*

Jane said: *I don't think it would have been as creative and I don't think we would swim it as well...it's really knowing that you made it - the team made it and you just put more into it.*

Comments on Art and Perfection

The experiences that Sasha and Kit have had with learning and competing a set routine allowed them to appreciate the simplicity of perfecting a known series of movements. They further agreed that a set routine is easier to perfect and clean than a routine under construction. Jane mentioned the pride she felt in swimming a routine made by her heroes. All three swimmers labeled the routines that they create for themselves as pieces of art. The artistic ownership and pride that these swimmers feel for their routines is great.

Overall, the emotional investment and ownership that comes with choreographing a routine seemed to be more important than swimming something that was created and ready to be learned. Balancing the need for a clean and perfected routine with the feeling of artistic ownership is key to satisfying these synchronized swimmers. Understanding the big picture

and the context of all actions (Werner, et al., 1996a) should allow synchronized swimmers to marry the diverse categories of personal art and perfection over time.

14.5 No Parameters: A Blank Slate

In team practice during this study, I gave the athletes a blueprint that outlined the parameters for the choreography. The team used the blueprint as a structure and then created specific choreography to flesh out the routine.

Through interview discussion, I asked the three participants what it would be like to have no parameters from me during the creation of the team routine. If I had come to the pool without patterns or parameters for the team, Kit feels they would have been completely lost. Sasha thinks that it would have been inefficient and hard to work with because: *figuring out the patterns while you're in the pattern is really hard...just having that little bit of structure is good.*

Jane said that it would have been very chaotic and there would have been a lot more frustration and anger among the swimmers if I had not set parameters for the team routine. Jane wrote in her journal: *I really liked the way we choreographed free. Putting in the highlights first set the frame and made it easier to know what to put in. When you start at the beginning and just go through with choreography it seems like at the end you are just trying to cram things in and so I think it really helped to cut it down and plan for each highlight.* Kit thought doing the highlights first made the creation process more organized.

Comments on Parameters

Indirect instruction does not mean learners start with a blank slate; parameters can be given in an indirect way. It is clear that the athletes did not want me to give them a blank slate on which to write the team choreography. Team routines are very complex.

Controlling the team patterns and the overall routine structure was something that I was not sure I should do at the beginning of this research. I believed that through teaching the routine form and its rules first - as Bunker and Thorpe (1982) would with a game - the swimmers would be prepared to create and able to control the entire creation process.

Based upon the experience of this research it is clear that getting an athlete to a point where she could oversee the creation of a team routine would take more than the few weeks that I had with this group. I think it would take a few years of consistent indirect instruction to get these athletes to take control of the choreography process for a team routine. In addition, the team would need to be a cohesive group functioning at a very high level in order for the athletes to be able to take control of the structure of the routine. To have a truly cohesive group, all members must be willing to put the welfare of the team ahead of their own desires (Yukelson, 1997). Again, I think it was clear that not every member of the team in this research was willing to put team needs before her own goals.

14.6 Who Created the Routines?

In estimating how much of the routines were swimmer created and how much coach created, Kit believed: *...the specific movements are 0% coach but the basis of them, like double arm strokes or do this here and this here is probably about 60% coach and I don't think it's a bad thing at all - I'd much rather have that and do 100% of the movement creation.*

Jane believed the choreography was: *...90 - 95% swimmers probably, because it was turn on the music and go out and do whatever you want or go do it in partners.* Sasha saw the breakdown as: *...30% you (coach) and 70% us (swimmers) because you would come with an idea for what to do and we would make stuff up...I think that was good, it's just that*

sometimes the way we got to it (the final choreography) wasn't the best. Sasha thought I needed to teach some swimmers to listen to each other effectively. She believed that when the team struggled with communication that I should have simply told them what to do without asking for their input.

Comments on the Roles in Creation

It is interesting to note that the three swimmers saw my structural and overall guiding role as 30%, 10% and 60% of the outcome or final routine. This discrepancy shows me that the content is more heavily weighted than the structure to these swimmers. I think it has been their experience to have input into the content of their routines but not the overall structure of those routines. This supports the idea that swimmers are not being taught to understand the big picture or routine as a whole in synchro. My indirect instruction began with presenting the team routine as a whole to the swimmers in this study.

A whole team routine is a five minute piece of choreography that includes twenty different patterns or group formations, five substantial underwater sequences and four team lifts or highlights. Highlights are high risk maneuvers that require all team members to work together to lift or throw one or two teammates high out of the water. The athletes cover approximately 100 metres of pool space during a five minute team routine. In addition, throughout the team performance, eight individual swimmers must create and maintain a variety of relationships and act as one organic body in order to be successful. The five minute team routine is a seamless presentation of difficulty, strength, speed, complexity, grace, flexibility and originality.

The complex nature of team routines make them more difficult to understand and digest as a whole. Prior to this season, I do not think any of the swimmers were asked to look at the team routine as a whole. The athletes found taking an overall look at the team

routine both foreign and challenging. It will take more time to get the swimmers to a level of understanding that encompasses an entire team routine.

14.7 The Creation Atmosphere

Jane talked about the importance of team relationships with regard to choreography: *...if one person has an idea and the other person can expand on it then its good, not like when you are with someone and just say, well do this, but you really don't want to be anywhere near each other.* Jane thinks that when teammates are not getting along during choreography that the creation suffers.

When everyone was relaxed and in a good mood, Kit and Jane felt the choreography went smoothly. When they felt rushed or anxious, these swimmers thought choreography was stressful.

Comments on Atmosphere

The comments that Jane and Kit made are central to the way indirect instruction succeeds or fails in a synchronized swim team setting. If the team cannot function as a unit it cannot take on responsibilities and tasks. This brings me back to the question of team dynamics. Team cohesion affects nearly every facet of this research.

A cohesive and healthy team is a team with strong ties and solid unity. Carron (1985) asserts that there is no simple formula that will guarantee team cohesion; however, increased communication, conformity to group norms and shared goals will positively impact team health (Carron). Building the group's distinctiveness, demanding individual sacrifice for the team, emphasizing unity of goals and clarifying roles will create a more cohesive group (Carron).

15. LOVE OF THE SPORT

The rewards for training six days each week and creating routines come with performing. This year, we presented a club Christmas show in the ninth week of this ten week study. The show acted as a fundraising event for our spring training camp. This show included every swimmer in our club. We spent approximately twelve hours preparing as a club for the Christmas performance. The routines performed in the show were the same routines the swimmers presented in competition throughout the competitive season. When preparing for the Christmas show, I realized that some of the coaches on deck felt frustrated because they were not following their training plan. As I watched the swimmers rehearse I could see that performing was their joy - the love of the sport for all of them. It made the swimmers so pleased to have an opportunity to perform early in the season.

Kit said: *It doesn't necessarily have to be a meet but every so often I really feel like I'm performing and that's probably what keeps me swimming.* Kit found that the opportunity to perform early in the season was really fun and commented that the only thing she thinks is missing from synchronized swimming is enough opportunities to perform.

In the fourth week of this ten-week study, Jane: *really clicked with the free team,* and began to look forward to the middle section because she thought the music would pick the team up when they were tired. Jane found that when the music was easy for her to get into she had a lot of fun swimming. Jane believed that the team would make a great impression: *I think it is going to be one of the teams where people say, 'You have to see that team.'* Jane needs to feel like she can get into the music in order to create and perform something she loves. She finds that the connection to the music and the movements makes synchronized swimming fun and different from other sports.

Kit wrote: *I love what we do on "Great Balls of Fire"! It's going to look so good when it's done* Kit does not swim only to perform. She notes that: *Performing is only five minutes out of however many hours you train...I really like working in a team and the atmosphere that comes along with that.*

Sasha finds joy in the creation of: *unique and personal routines.* She believes that she has stayed in synchronized swimming from a very young age because of the creative opportunity it presents. Sasha enjoys creating and performing routines more than any other aspect of synchronized swimming.

Comments on the Love of the Sport

Bunker and Thorpe (1982) developed the Teaching Games for Understanding model because they believed that the focus on technique and skill that pervaded physical education did not encourage an excitement and love for games. Performing is the joy that is common to the majority of athletes in synchronized swimming. Swimming routines for an audience is what the swimmers want to do most. The driving force behind synchronized swimming is performance and it should be incorporated into training to tap the athletes' true joy. Through indirect instruction, I hoped to encourage my swimmers' love of synchronized swimming. Certainly the instruction they received did not stifle the swimmers' love for performing.

16. MY ASSUMPTIONS AND REALIZATIONS

A difficult part of this research was being the researcher and coach of the team at the same time. I found the balance between researcher and coach difficult to maintain by the fifth week of this study. I wondered if I erred on the side of coaching them and pushing them as athletes instead of watching what they experienced through indirect instruction. It was an ever-present struggle to refrain from just coaching my team.

It would have been ideal to have someone watching me with the team, videotaping every practice and documenting all that was said and done throughout the study. However, the strength of being researcher-coach and being at the centre of the journey was that I caught the nuances of what was going on and I built relationships and trust with the athletes.

The following reflections are excerpts from the coaching journal that I wrote in each evening after practice. The insights that I wrote allowed me to move forward and evolve over the ten weeks of this research.

On the second day of this study, I felt drained, unsure, and disorganized. I found it really difficult to integrate the athletes who came to practice over an hour later than the others. I did not think the youngest athletes were very good at taking responsibility for the work they needed to do on their own. I felt like I was not used to athletes who did not have the ability to work hard on their own.

The following day, I realized that I needed to prepare to hear and see things that were not exactly what I wanted to hear or see if I was truly interested in encouraging thought and critical reflection in this group of swimmers. I was finding practices very messy at this time. I was realizing that because I was asking the swimmers to make decisions for themselves, they would not always decide to do something the way I imagined it should be done.

In the third week of the study, I began to see that the idealist in me assumed that the swimmers on my team were creative and keen to write their own routines, and that as a result, the process should be clear and simple. The process was not simple at this point. Through reflection, I began to see that individual differences often muddied the water during creation in team. Strong individual preferences sometimes hindered the team's ability to choreograph as a unit.

I had to remind myself early on that the swimmers would never listen all at once and that they would never all answer the questions that I was posing but that some would get something out of what we were doing.

In the fourth week, I felt like I learned a great deal. In talking with one of the swimmers I realized that it is important to first discover what each individual needs before I can do a good job of coaching them and helping them learn. The point is to be flexible and to cultivate a myriad of strategies and styles as a coach, a mentor, a teacher and a friend. I started to think about something that I read in an undergraduate literature course, "You must be a sensitive psychologist to lead people. It's necessary for the teacher to live within the pupil; and teaching is not primarily concerned with _____ (swimming)." This is from Vera Lysenko (1954) and is written in relation to singing, but it applies to teaching or leading any discipline.

This same week, I saw that any coach using indirect instruction cannot take the athletes' criticism personally. I needed to separate myself from the choreography so that when I asked the team to critique it, I was not offended by the swimmers' dislike of certain sections. Distancing myself from the critique sounds so simple but it was not easy for me.

I often wondered if I needed to work on stepping back more and letting the swimmers work out problems without detailing those problems for them. This was the largest error I made during the study. I was equating indirect instruction with independent learning. I have learned through putting this thesis together that many of my frustrations can be linked to this false definition of indirect instruction.

There were times when they wanted me to tell them what to do, and there were times when I probably should have done just that. For example, when six of the nine athletes were not listening to each other during team practice I should have pointed this out to the group.

Half way through the study, I wrote some of the assumptions that I brought to the pool each day and therefore, to this research. I was assuming that the team of swimmers wanted to think and wanted to increase the amount of control that they had over their work and process. I assumed that they would be motivated by those desires. In hindsight, I think that was an unfair assumption to make about the entire team.

Once we had choreographed about half of the team routine, I found myself thinking about the high need for perfection that so many of the athletes on my team displayed. I also have that need. I think the sport breeds this need for perfection. The sport is all about doing things a certain way: perfectly synchronized, high out of the water, and with breathtaking originality. It is difficult to perfect something and simultaneously learn about the larger context of one's actions. I thought at this point that perhaps I was expecting the swimmers to understand the big picture without spending enough time showing it to them.

Seven weeks into this research, I wrote in my journal that building the lines of communication between athletes and between athletes and coach is central - it is everything. I viewed getting the swimmers comfortable and clear with how communication works best as the most important thing I needed to do at this time.

At the beginning of the eighth week, I was happy to record that I stayed calm. The area I needed - and still need - to improve most in order for indirect instruction to work is staying patient. I was expecting to see excellence from minute to minute. I was coming from an Olympic perspective when I really needed to remember that many of the team members were still in high school and not near their Olympic training moment. I needed to let them be teenagers sometimes and this was something that I did not realize I would need to do before working with them. I assumed that talent superseded all things and erased all other traits. This was an impeding assumption to make.

During this same week, I wrote that I was so tired I felt ineffective at the pool and that I could not catch my breath. Being tired made me less patient with the team. I knew that I needed to give the swimmers more time to figure some things out at practice. I needed more hours of sleep.

It seemed like the athletes were better at knowing what they needed to be successful in their solos and duets than they were at knowing what they needed to be successful in team. However, the solos and duets I was coaching were made up of the older and more experienced swimmers. The swimmers who had been coached by me in previous years in solo or duet were accustomed to evaluating their routines. In the past and present, I had asked them to critique what they needed and what they already had that would lead to competitive success. I do not think any of the nine athletes on my team were used to being responsible for knowing what it takes to have a successful team routine. I prepared to ask if the swimmers were accustomed to having the coach solely in charge of the team routines.

Comments on my Assumptions and Realizations

What I have learned over the ten weeks of this research, in the final months of the competitive season, in sifting through all of the journals and interviews that I collected and in writing this thesis is immense. I discovered that my Olympic lens was not appropriate and needed to be removed in order to increase my patience. Practicing patience is central to using indirect instruction. Because the focus of indirect instruction is letting the learner play the game or swim the routine, the teacher or coach must give the learners time to develop their play. I realize now that I did not cultivate the patience necessary to let play happen without hurrying it along. As well, I needed practice and experience as an indirect instructor so that I could ask the right questions of the athletes on my team. A great indirect instructor asks the best possible question in any given situation rather than giving a command. Too

often I intervened with a directive rather than a question because I felt pressed for time or frustrated by what was going on in the pool.

I saw how fundamental the relationships amongst teammates and between coach and team is for indirect instruction to work with a team. I realized that individual needs must be understood by the coach before any method of instruction will work on a team. The cultivation of many strategies is more important than any single teaching style. No method can fit every swimmer all of the time. I have learned how critical team cohesion is for success.

17. THE ROLE OF THE COACH THROUGH KIT, SASHA AND JANE'S EYES

Kit said that: *I still rely quite a bit on the coach's opinion and other swimmers...I'm not really at the point where what I make up looks good and I know it looks good.*

Kit did not see the coach as separate from the team. *I have never really considered the coach a level above...they're more a part of the team than anything and I don't think it matters who ideas come from - coach or swimmer.*

Kit thought that it was important for the coach to bring in parameters for choreography: *I think we'd be really lost without parameters because everyone on the team has very different ideas of what the routine should look like and I think you shouldn't give set counts but you don't just let us flounder around because we need direction.*

When I asked Kit if she was used to having a coach who acted as if she knew exactly what needed to be done she said yes. Kit liked that because if she was not quite sure of what needed to be done, she liked knowing that the coach was sure of what was going on. Kit thought that I knew: *what was going on more than everyone else, which is good.*

Kit noted that she appreciated the times at practice when I was able to stay calm and relaxed. She found those days more productive than the days when I became annoyed.

Sasha wrote in reply to the question of what she thought my role was: *You have shown me that being a good listener is important. But also to help solve problems and analyze situations. I suppose your role to me is a teacher.*

When Jane was younger, she found that the coaches did not allow the athletes to choreograph as much: *It was more 'how about you do this' it wasn't really from the swimmers...I think it might have been because from a younger age you do the same things all the time and have the same kind of movements and so I think that kind of helped at a younger age but at an older age I don't think it would be very good.*

Comments on the Role of the Coach

The differences in the athletes' views of the role that the coach should play are as diverse as the individuals on the team. However, the need for leadership is common to Kit, Sasha and Jane. The athletes look to the coach for guidance when they need it. Indirect instruction uses the teacher as a guide who highlights problems for learners and shapes the direction of their learning (Bunker and Thorpe, 1982). I think I came to this research with the idea that I could make myself expendable and unnecessary. I do not think now that it is the logical role of the coach to become extraneous. I was taking the model to an extreme. What I take away from this research is the knowledge that I am meant to be the athletes' guide when I use indirect instruction. The biggest error that I made during the research was sometimes equating indirect instruction with silence and direct instruction with interference in the athletes' work. The problems this created for me are outlined in the following section.

18. WHERE OR WHEN

In Bunker and Thorpe's (1982) article, "From Theory to Practice: Two Examples of an 'Understanding Approach' to the Teaching of Games," the authors outline the role of the teacher instructing badminton and basketball with an understanding approach. The teacher asks many incisive questions during instruction and, without giving commands, the teacher shapes the lesson effectively. The most important thing that I realize now, looking back at this article, is that I was often either silent or interrupting my team and not asking enough timely questions. This section cites examples of the difficulties I experienced with determining where or when to intervene or instruct the team and where or when to let them work things out on their own.

In the second week of this ten week study, I wrote that it was difficult to let the team go on for so long with the highlights and that sometimes I thought they did really well without me but at other times I thought I should intervene. I found it difficult to know when to speak up and when to be quiet. With highlights I could not see what was going on underwater and thought that this was something I should leave to the team to figure out.

This same week, I was feeling very low on confidence as a coach. I did not think I knew when to let the swimmers gallop and when to pull in the reins. I decided this day to let the swimmers develop their ideas more before I said anything. I knew this would take far greater patience than I was showing at the time. I thought I needed something concrete to remind myself of my ultimate aims.

I tended to try to move things along when I thought that the swimmers were spending too much time on any one issue. I found that giving the athletes ample time to create choreography on their own did not guarantee that great ideas grew out of that time.

In the fourth week, I noted that the team was great at taking initiative and getting on task sometimes. On this day I thought my distance allowed me to control my intensity. I had the athletes peer coaching.

At a practice during the sixth week, the team was working well together and, I consciously stopped myself from adding to what they were saying four different times.

In this same week, I felt badly that I again, did not know when to step in and intervene or change the course of what was going on. This was the day that the swimmers ran two hours of the practice and it was not a positive experience for them. I realized that when I was in charge of planning the practice for an indirect setting I was making unconscious decisions about what the swimmers would figure out for themselves and what I would tell them.

At the start of the seventh week, I kept out of the team discussion. The team was in the water trying to figure out a group pattern and I heard one swimmer say, 'There are five people telling us what to do and none of us know what to do!' She said this to her teammates and not to me. She was absolutely right, it was a chaotic and tense environment. I know some of the swimmers wanted me to step in and just tell them what to do but I felt that if I had stepped in it would have been negative. This chaos is an example of me letting them take control and the team struggling with that responsibility. I thought that the struggle had to happen for the athletes to learn how they could be the best possible team. Upon reflection now, I do not know if I agree that this kind of struggle is necessary.

In the eighth week, I wrote in my journal that the irony of what I was trying to do in my coaching was baffling. As a teacher and a researcher, I was drawn to the philosophical underpinnings of Teaching Games for Understanding; however, as a person, I found I lacked the patience that this model of teaching demanded. I did not feel like I provided enough wait

time. I thought that the swimmers wanted me to intervene more often. My greatest struggle at this point was knowing when to intervene and when to stay quiet.

Near the end of the study, I sat back and let the team do land drill without my input. This went really well and the athletes peer coached in a kind yet informative manner.

Sasha said: *In team, it would be better if you just told us what to do - it's especially hard in team and especially this year because people all have their ideas and they all want to tell their ideas and sometimes it gets crazy. So in team I think it would be better if you just said, 'This is what we're doing and do it,' but still gave a little bit of freedom...it's not that you have to tell us what to do all the time but maybe if you want us to figure something out you need to give us more time...and I think people on the team need to listen more, there have been times when other people on the team have said ideas and other people just keep talking about their idea...* Sasha added *...in solo and duet it's good (to let athletes figure things out)...well I guess it depends on the person...but I think it's good to let us figure things out.*

Drawing the line and stopping play and initiating play at the right time was something that I did not feel I was good at doing. I wondered at the end of November if my inexperience as a coach and my idealistic view of what was going to happen on my team and to my team was getting in the way of practices. I thought I needed to communicate more with the swimmers about our direction.

When I removed myself from the revisions that the team requested to do at the end of November, I had a negative experience. The swimmers seemed to resist me when I came to them after about fifteen minutes and asked if they were finished. I thought the team revised the section quite well and they worked from the question: What do we need to do to succeed in this situation?" However, the feedback I got from a few of the swimmers was that they

thought I was angry at them because I walked away for a few minutes. This situation provides another example of the need for increased communication with indirect instruction. I should have taken the time to explain why I wanted the team to make the revisions without me as much as possible.

On the last day of this study, I wondered if maybe the best time to intervene with the team was when they asked me to. However, I do not think this is the right solution to the question of 'Where or When,' because it takes a lot for them to ask for help and often what comes before a request for help is painful for some of the team members.

I wrote at the close of my ten week journal that I believed the research sped up my acquisition of patience and my evolution as a teacher and coach. I did not know what it was doing for the athletes - I do not know if we could know this for a few years.

Comments on Where or When

I think the problem that I document herein, and which is excruciating to reread, is lack of good clear communication. I do not think I was clear enough or experienced enough to develop the right questions and ask them at the right times during this research. The team struggled at times when they did not need to because of what I said or did not say. I thought I needed to talk less, step away, and watch when in fact I needed to communicate more to the swimmers. I do not think I always needed to 'tell them what to do,' in the classic and direct sense of the phrase. More communication means better leadership. It was not that I needed to tell them what to do or how to do something but why they needed to do things. The greatest mistake I made in this research was to equate indirect instruction with silence at times.

If I could go back and repeat this study I would never walk away from the action. I would stay closer to all of the conversations that the team had and ask questions in an effort to get the team on track with their decision making.

19. TEAM

In synchronized swimming, athletes are members of a team before any other event is added to their repertoire. Indirect instruction was used with a team of nine individuals in this research. An important part of the experience that the athletes in this study wrote about and talked about was their team. Prior to this research, I did not consider team as one of the important variables that would be affected by indirect instruction.

In an effort to bring the team together early in the season, I had the members watch a videotape of a gold medal winning speed skater who discussed how his individual success arose out of membership on his team. We discussed our teams' strengths after viewing this video. Each athlete named a strength she thought she brought to the group and the team named one other strength they believed each individual brought to the team.

Values for the whole team generated by the individuals at this meeting were: friendships, communication, and cooperation. The athletes agreed that they needed to leave things from outside the pool out of practice and be responsible for their bodies and their actions. Unfortunately, the team did not discuss how to communicate effectively or how to facilitate cooperation. In addition, we did not talk about resolving conflict on the team.

The values and behaviors that the team generated were great but were not acted upon in daily training. If the team had lived by these values and remembered each individual's strengths rather than noting them on paper in the fall and then forgetting them, I believe the team would have been more successful. I should have taken the time out of the pool to

revisit the ideas that were recorded at the meeting we had near the beginning of the year. I think that if the team had lived by their roles and values throughout the season, taking control of the ultimate aims of their performance and problem solving as a group would have been more natural and effective on a daily basis.

The journal entries, interview comments and events from practice that relate to the variable of team in this research have been grouped into more specific themes. Working together, diversity, unity, support and leadership are the key team categories that emerged from this study.

19.1 Working Together as a Team

The following examples provide snapshots of how the nine athletes on my team worked together over the ten-week duration of this study.

In the third week of this ten-week study, I gave the team the opportunity to create their own dry land challenge. The team chose to do a tuck jump and chin up test. I was surprised at how demanding their choice was and was very pleased to see everyone on the team push so hard to achieve their best score in this challenge. Later in the year, after this study had ended, we did another team challenge like this and one of the speed swimming coaches said he was truly impressed with the determination he saw in my group as they pushed themselves to produce the highest number of chin ups that they could.

During the same week, the team was given a choice of music and decided as a group what they could spin to the best. There were two different choices that emerged from the group and I rated which looked best when all nine athletes were spinning.

At a practice in the fourth week of the study, the team had to come to a consensus on what we would spend an hour doing in order to succeed. The swimmers elected two leaders

to document what they wanted to do and everyone agreed with the action plan these two athletes brought forward.

The team worked really well as a group without my intervention at a practice in the middle of the study. I held back when I could tell that the swimmers were working things out amongst themselves in the water. I think that the pool we were training at was helpful because unlike our home pool, it was quiet and I could eavesdrop on what was being said out in the water. Because I could hear what the swimmers were saying, I knew that they were working together as a group to solve a team routine problem.

In the middle of week eight, the team had a really good practice and they generated a list of things that they wanted to work on. I felt that I could tell them what I wanted to work on but that the list from them meant more and gave them a sense of ownership.

In her interview, Jane said she thought this group worked well as a team. When she compared this team to others she had been on that were made up of people that were all her same age. Jane found the fights to be less important and drawn out on this team. Jane's view of team cohesion was different from both Sasha and Kit's perspective on the team. Sasha found some communication skills were weak and Kit did not think the team bonded effectively.

Jane believed that the team choreography throughout the research was affected by how well teammates got along. Jane said: *When people get mad they don't work as well and especially when people get mad at each other and talk to each other really rude - it's really hard when people get after you and you don't want to say anything because you don't want to start a fight - and it's really hard when you're younger too...they can get pretty scary sometimes...you kind of get hurt but then they talk to you normal ten minutes later and you kind of realize that it's nothing personal.*

Kit wrote during the early weeks of the research: *I wish everyone would relax so we could ease into it (choreography). Sometimes it feels like we waste our time feeling rushed and coming up with the wrong things over and over.* By December 17, Kit thought that the team was: *...getting way better at doing stuff like this (revisions) as a team.* However, Kit stated in her interview later that she did not think the team bonded enough to be a great team. She believed the team had to spend time together outside of the pool getting to know each other in order to bond effectively.

Sasha felt the team worked pretty well as a group even though they had such different ages and experiences. She added that some of the people on the team worked hard to always be heard but did not really take the time to ever listen to their teammates. Sasha saw this as a team weakness.

Comments on Working Together as a Team

The ability to work with teammates is demanded of all synchronized swimmers. The team event, where eight athletes perform as one unit, is the foundation event in this sport. Working together, communicating, lifting each other out of the water, being astonishingly synchronized and holding perfect patterns with all team members - this is what is required to be a good team player in synchro. Ninety percent of all training is done in a team. Kit, Sasha and Jane had different comments about how well this team worked together. Jane was satisfied with the team while Kit and Sasha commented on problems with the team's ability to communicate effectively.

There were practices when the team worked well together and others where the team splintered and was unable to function as a unit. Comparing this team to others I have worked with and swam on, they were about average in their ability to work together. Orlick (1990) talks about what happens when a team truly comes together: "Harmony grows when you

really listen to others and they listen to you, when you are considerate of their feelings and they are considerate of yours, when you accept their differences and they accept yours, and when you help them and they help you" (p. 143). I do not think this team could be categorized as harmonious using this definition. However, the indirect instruction used with this team allowed the swimmers to experience some great moments where they came together and worked as one strong force.

I think to succeed with indirect instruction in a team setting the team needs to be able to work together as one unit.

19.2 Team Diversity

Most sport teams are characterized by variety and diversity of members. The team in this research was extremely diverse in experience, age and background. The nine swimmers who comprised my team ranged in age from 14 to 21. The swimmers ranged in synchro specific experience from a first year Senior club swimmer to a third year National Team member. A Senior club swimmer is ranked in the top nine in our club but is not necessarily ranked in the top fifty nationally. A National Team member is ranked in the top twenty in Canada.

In the third week of this ten-week study, I noted that some of the swimmers on the team really did not have a lot of experience with training at an elite level. The young age of some of the swimmers did not allow them to be seasoned by practice and competition. They were all very talented and I wanted to have eyes for that natural athletic talent only at times during the year.

Prior to swimming on the Senior team, Jane: *always looked up to every single person on the team.* Jane was less mature and simply younger than the rest of the team. She was used to admiring her teammates from a distance and not swimming beside them everyday.

Early in the research, I was finding that some swimmers responded well to the questions I was posing while others did not like being asked questions during training. I had to remind myself that in a team, it is difficult to accept that every person is not achieving or learning the same things because they are individuals and could never possibly need or get exactly what their teammates do.

In the fifth week of the study, one of the team members shared a concern and said that she thought the team needed to revisit their commitment to hard work at all times. This was interesting to hear as some of them agreed and some of the team members definitely did not agree with this comment.

Kit believed that everyone on the team could: *get in really cranky moods - especially when the music was a little frustrating.* However, she found one teammate who she could depend on to be pleasant at all times.

Jane said that about 75% of her motivation comes from within; however, she found that if people were in bad moods it really affected her and her motivation. She found it hard to focus when a teammate acted tired and impatient.

Kit found that the team was more difficult to bring together than any she had been on in the past: *Some people are in it for themselves - it sounds bad but when they're really not striving or you get the impression they're not really striving for the team. They work on team but their goal is not based on that, their goal is to go to the National Team and it's sort of limiting when you don't have anything else and you want to focus on this team...it's hard to*

unite that when they're not focused on team...to bond as a unit you have to have everybody willing.

Comments on Team Diversity

This team brought diverse backgrounds and experience together for twenty-two hours each week. The youngest member of this team was 14, the oldest member was 21 years old. Three of the swimmers were National Team athletes, two came from a very successful junior team, one swimmer came from a second string junior team, one came from a different country and one skipped an age group to swim on this Senior team.

The trait the team members shared was talent. I am left wondering if talent is a satisfactory criteria for team membership because this was a group of talented synchronized swimmers but not a consistently cohesive team. Talent is easy to identify and it is necessary for competitive success. However, we can read talent without seeing emotional maturation. Problems of individual compatibility compounded the high degree of diversity on this team.

I think more relevant than age or experience is team compatibility. One of the eldest athletes did not work well with others on the team on a regular basis. My experience with teams tells me that it is not so much age that determines how well a team will come together as shared commitment to a common goal. Yukelson (1997) believes that to have a cohesive group, each individual must be able to place the good of the team ahead of personal goals. Kit and I both noted in our journals that every individual on the team was not able to put the team ahead of individual goals.

19.3 Team Unity

A team's ability to rally around a common goal and create shared values and behaviours that support the achievement of that goal is central to success. The team's ability

to be united determines, in part, its ability to achieve great things. Team cohesion develops increased self-esteem, lower anxiety and strengthened ability to work under pressure in individuals (Carron, 1985). When a team is cohesive, they put greater effort into group goals and are more persistent when working together toward their goals (Carron). The athletes in this study mentioned team unity in their journals and I followed up with their comments in the individual athlete interviews.

Sasha wondered if working out the highlights first was a team building exercise in October: *We worked together to lift one or more people out of the water. Maybe now that we have worked together we will be more unified for the rest of the year. Who knows?* Jane thought the team had unity because: *everyone wants to be here and has the same goal to win.*

Kit said:...*team bonding is really important - the difference between a good team and an awesome team is how they swim together...you just know the best ones are a team and they know everything about each other.* Kit noted in her journal three different times that the team could not win Nationals if they did not bond as a team.

Kit believed that to unite as a team and truly swim to its full potential the team members needed to know each other very well: *You have to know their personality to know what they are going to be like and understand what is important to them...you have to have a friendship relationship with the people on your team and not just a working relationship throughout the whole season.* Sasha agreed that knowing teammates well was an asset: *you know if they're having a bad day and you just get used to them.*

Sasha was not convinced that the team needed to be unified in order to achieve success: *When we won Nationals (in 1997) we weren't very unified at all...half the team was gone, I was by myself when I found out we won. I know other people would say that they want the team to be all happy and hugging but I don't really like that. Everyone being*

together would be good...if everyone is fighting it makes a difference and isn't good but I don't think we have to be best friends. For instance, when I was on the National Team last year, we got along really well and we still didn't swim that well. I don't think it makes that much of a difference - as long as you can focus on what you are doing and all work together - that's more important.

Comments on Team Unity

Kit, Jane and Sasha spoke from experience and offered good insight into the team unity issue. The swimmers' views on team unity are as different as they are unique individuals. It is difficult to measure team unity, however, based on my experience in team synchronized swimming, I believe this team was not completely unified. Every member of a team must take responsibility for the unity of the team. Every member must leave as much individual baggage out of the team situation as she can in order for the team to function well together.

To me, a united team is one that can work well together nearly all of the time. I believe it was difficult for this team to work as a unit at times. Diverse school schedules ensured that the team did not work together at all training times. Injury and personalities were obstacles that combined with difficult schedules and hindered this team's ability to become a great team. The question I am left struggling with is: Could I have done something to unite this team more effectively? Indirect instruction provided the framework for these athletes to work together yet without a foundation of unity, the opportunities afforded by indirect instruction could not be maximized by this team.

In the team building process, Yukelson (1997) sees the coach as the person who should involve all group members and capitalize on each individuals' strengths while involving them in decisions that affect them directly. I involved the individuals on this team

in a great deal of decision making. However, I do not think I did a thorough and consistent job of tapping all team members individual skills and ideas. I should have pulled the more quiet members in to the centre of discussions more often. If I had clarified the diverse roles and expectations for each individual on the team, I may have helped build a more cohesive team. The swimmers defined their strengths and roles near the beginning of the season but I do not think I followed through and emphasized the unique contribution made by every athlete often enough during the season.

19.4 Team Support

For a team to work together and unite, members must support each other on a daily basis. Team members must listen to each other, respect each others' feelings, and accept each other for a team to truly come together as a cohesive unit (Orlick, 1990). In synchronized swimming, eight or nine athletes work closely and interact continuously in an effort to perform like one flawless body in their team routine.

Sasha thought: *It was interesting to see how people push themselves. It was also interesting how the team encouraged the athlete in a strength challenge.* She recognized the intra-team support that happened sporadically during the season.

Jane wrote in early December: *What I really like about my team this year is that everyone works hard to make everyone else stronger. I have never had this where it's a total support system before.*

Jane wrote that her teammates did not treat her like a younger sibling: *Sasha and Lorraine talk to me like anyone else and its not like they are just trying to talk to me. They are especially nice and always friendly when I ask a question. Helen makes sure that I know*

the counts and she helps me when I'm in a new position...I found it awesome when Sam said that what I was doing was beautiful. It was one of the best compliments I've ever gotten.

Comments on Team Support

Again, the individual participant's experience of the same team varies tremendously. Jane found a support network on this team that she went without on other teams. Kit did not comment on the support of her team and Sasha found it 'interesting.' From my experience as a member of twenty-six different teams, I see the mutual support given and received as crucial to the building of trust and, by extension, team unity. Peers must support one another, help one another and be there for each other, particularly in times of need (Yukelson, 1997).

The team in this research showed support for one another but not consistently enough to build the foundation for unification that I think they needed. There were as many examples of teammates cheering each other on as there were examples of athletes not listening to each other on this team. Carron (1985) cites many factors that can develop a cohesive team of individuals. Group distinctiveness, team success, clearly defined roles, large amounts of communication, homogeneity of composition and shared goals will bring a team together (Carron). As the coach of this team, I should have encouraged and created opportunities for these factors to be developed and nurtured on a regular basis. As a coach using indirect instruction, I should have created lesson plans and shaping questions that worked to bring out the cohesion factors that Carron (1985) identifies.

19.5 Team Leadership

The successful teams that I swam with always included a few strong leaders to whom everyone listened and respected. Leadership on the team in this study was only commented

on by one of the three participants. Kit wrote and spoke about leadership at length while Jane and Sasha did not mention it.

Kit wrote in her journal that when one teammate was missing the practices got off track. Kit felt that Lorraine brought a creative eye to the team that no one else did: *without her we were just lost.*

In the fourth week of this ten-week study, we were short of a full team for nine days because of illness and injury. When all nine athletes were together at practice again the atmosphere changed completely. Lorraine was the athlete who seemed to be responsible for altering the team morale in a very positive way. Everyone got excited and they took on the choreography as a team. It was wonderful to watch them play with the "Great Balls of Fire" music and know that they were truly invested in what they were creating. The facial expressions, body language and on-task focus of all nine swimmers displayed how they felt at this practice. I tried to figure out why the atmosphere varied so drastically and what I could do to create an atmosphere like the one that emerged on this occasion. Lorraine in particular had been missing for a whole week and I asked Kit about this in her interview because she mentioned it in her journal. Kit saw Lorraine at the centre of good team practices and I agree that Lorraine's leadership created a positive environment for the team.

Kit found that when Lorraine was missing and the rest of the team spiraled into a bad mood it was impossible to get things done at practice. When Lorraine returned, Kit thought it was a really productive practice. On one occasion, Kit noted that even though Lorraine was away the team accomplished a lot and she was surprised. Other swimmers took turns leading the group in a positive way at this practice.

Kit said: *Even though Sasha isn't the biggest leader on the team I think we all came in expecting her to be and I think that was a huge reality check because you see her as the*

most experienced and the strongest on the team and then you go in and she's not a good leader...it's different to find someone else to go to.

Comments on Team Leadership

Kit commented extensively on leadership while Sasha and Jane did not mention it in their journals or interviews. Leadership from within keeps the spirit and connectedness of a team strong (Yukelson, 1997). I believe it is important to have good leadership within a team in order to achieve success.

I realized over the course of this study that age and experience did not determine leadership on the team. I think it was difficult for Kit and some of the young members of the team to accept that the people they thought would be leaders on the team had no interest in nor aptitude for the job. The difficulty that this team struggled with was the lack of leadership shown by some of its most experienced members. Lorraine was the strongest leader yet not the oldest or most accomplished member of the team.

As the coach, I needed to pull diverse individuals together more effectively to create a great team. I should have used indirect instruction to create situations that demanded contributions from the full range of team members in this group. Equally important to the success of this team was the leadership that came from within the group. Unfortunately, the leadership from within was inconsistent and fragmented. In addition, what constituted leading to some members of the team was not recognized as leading by other members of the team at times. The most positive and sweeping leadership came from Lorraine; however, a chronic injury kept her away from most of the training and no other party stepped in to do what she did so well for the team when she was healthy.

19.6 Summary of Team

Team in this study included these specific categories: working together, diversity, unity, support and leadership. Smith and Smoll (1997) document that research has consistently found the most cohesive teams to be the most successful teams. Coaches who show supportive behaviors and encourage the athletes on their team create better intra-team attraction on their team (Smith and Smoll). I should have worked to be more encouraging with my team members. I think overall I was less positive and encouraging than I should have been with this team. Indirect instruction had no impact on my ability to be positive. My disposition and personality prevented me from being positive frequently. The frustrations I experienced and the struggles I had with the team over the way they were swimming sometimes got in the way of my ability to bring the team together. In the future, I will create situations in my lesson plans that will encourage team cohesion and not assume that cohesion will simply happen without any shaping or guidance from me, the coach.

I believed that through giving the team the responsibility for their own journey and their own success that I was enabling them to be a more united and supportive team than any other in the history of synchronized swimming. The problem was that I did not pull the team together enough myself and the leadership from within the team was too inconsistent to keep the group together.

20. INTERPRETATION

20.1 General Assertions

The time frame for this research was not long enough to develop athletes' ability to fully understand and take responsibility for the structure of a complex team routine. If the

athletes were exposed to consistent indirect instruction for a few years, I believe they would start to seek out and solve problems for themselves.

Synchronized swimmers are only awarded marks by judges at three to five competitions each year. I believe the swimmers' understanding of the ultimate aims of performance would be accelerated if they were given more opportunities to perform and compete. Through competing in a series of small competitions in the first part of the training year, swimmers would be evaluated by judges and exposed to the judging criteria for awarding points more frequently.

The love of the sport that indirect instruction should encourage was difficult to assess in the time frame of this research. Performing is something that all of the athletes in this research loved to do. The instruction that my team received fostered pride in ownership of their routines and love of the sport.

The ability to see their actions in context and the evaluation skills that the swimmers in this study displayed were great. These skills could be emphasized more in the future with swimmers of similar experience. The library approach to choreography which emerged out of the indirect instruction in this research was a great breakthrough and an effective method for getting the athletes to create novel movements.

"Cohesion has been and continues to be recognized as a desirable group property by leaders from a wide variety of fields" (Carron, 1985, p.6). Team cohesion affected all facets of this research. I believe there are things I could have done to foster cohesion within this team. Smith and Smoll (1997) believe the coach needs to make the members of the team confident in each other by clarifying the vital role that each member plays, making each individual feel needed and by building a supportive, encouraging environment. In the future, I will emphasize team cohesion more with the teams that I coach. Building the group's

distinctiveness, demanding individual sacrifices for the good of the team, emphasizing unity of goals and clarifying roles will create a more cohesive group (Carron).

In order to be cohesive, a team needs to communicate openly and honestly, listen to each other, help each other and accept each others' differences (Yukelson, 1997). I needed to follow up on the values of friendships, communication, cooperation, being at practice and being responsible that the team generated for themselves early in the season. I did not remind the team of these values enough throughout the season.

Sasha wrote, quite succinctly in her journal the thought I am was left with at the end of the ten week study: *Sometimes you need to tell us what to do and other times we need to figure it out for ourselves. I guess what would be hard is deciding when to do either.*

In summary, the most important realization I am left with now, after discovering so much through this writing process is: I needed to ask good questions more often in order to get the athletes working towards good decisions.

20.2 Does Indirect Instruction Work in a Closed Skill Sport like Synchronized Swimming?

In this research I have departed from the work of many physical educators (Bunker and Thorpe, 1986b; Werner, Thorpe, and Bunker 1996a; Mitchell, Griffin, and Oslin, 1994; Gabriele and Maxwell, 1995; Miller, 1995; Rink, French, and Graham, 1996; Werner, French, Rink, Taylor, and Hussey,1996b;) and studied indirect instruction within a closed skill sport. A closed skill sport takes place in a stable setting where participants are able to define their movements before competing (Schmidt, 1991). In an open skill or game, the competitive environment is unpredictable and athletes cannot predetermine their movements prior to game play (Schmidt).

Synchronized swimmers do not face an unpredictable competition setting; however, they need to develop many of the characteristics that open skill athletes rely upon for success. In order to create the best possible series of movements for competition, a synchronized swimmer must solve a diverse range of problems. The most successful synchronized swimmer or team of swimmers will craft a strategic routine that will achieve the highest possible score with a wide variety of judges.

The most important difference between synchronized swimming and games is the athletes' awareness of score or points during practice. Game players see a ball go through a net or into a goal and know the amount of points they will receive for that event. Synchronized swimmers train daily without judges and only receive scores for their routines between three and five times every twelve months.

As a result of this research, I have become aware of the lack of knowledge that synchronized swimmers in general possess with regard to the judging criteria used in competition. Synchronized swim judges are trained to award a technical merit score that is weighted to reflect execution, difficulty and synchronization. The artistic impression score is awarded for manner of presentation, music interpretation and choreography (FINA Synchronized Swimming Manual for Judges, 1998). The athletes in this research ranged from being familiar but not well-versed in the criteria to not knowing what scores were awarded for in their sport.

My experience lends credibility to both the possibility and importance of teaching for understanding or indirect instruction with athletes in synchronized swimming. Synchronized swimmers must learn how to obtain high marks in their sport. I worked to develop the swimmers' understanding of their sport through introducing the athletes on my team to the entire routine and the criteria by which routines are evaluated with by judges. One season

did not provide enough time to ingrain a thorough understanding of the sport or how a routine is evaluated. However, during this research, I realized that the athletes are keen to understand how they are marked in competition and how they can better evaluate themselves throughout the year in between competitions. Because the exact judging criteria has not been emphasized with athletes historically, the criteria represented a large amount of new information to digest and use.

Indirect instruction works in the closed skill sport of synchronized swimming. The most obvious improvement that was made by the athletes in this research was the ability to evaluate their own work. All nine swimmers improved their problem solving and critical reflection skills during this ten-week study. As a result of indirect instruction, the swimmers on my team clearly developed their understanding of the ultimate aims of performance.

20.3 Reshaping Myself as a Coach

The most important change I will make when working with indirect instruction in the future is to plan for and ask good questions more often. The questions should shape the swimmers' learning and get them thinking about the ultimate aims of their performance.

Using indirect instruction means providing guidelines for athletes and structuring practice time as much as possible around the judging criteria used to score in synchro. During choreography, the parameters I give to swimmers need to stimulate cognitive effort without overwhelming athletes. I go forward using the video recorder as a tool for teaching critical reflection and evaluation.

I will begin every season with a presentation of the whole routine and lessons that focus on what it takes to score a perfect ten in competition, just as I did in this study. Beginning with the ultimate aims of performance is an effective way to teach athletes about

the judging criteria in synchronized swimming. In future years, I will come back to and reinforce the way points are scored in synchro more frequently than I did during this research.

To become a successful indirect instructor, I need to practice this type of teaching. The biggest mistake I made was to jump into this study with an imbalance of knowledge and experience. Experience with developing good questions and asking them at the best possible time is important. I think it is important to sample and experiment with teaching for understanding rather than adopting it wholly at first. Reading about indirect instruction, working with it and going back to the pool again to use it after reflection - this is what I need to do in the future. Keeping a coaching journal in conjunction with lesson plans is a valuable way to learn about strategies that work - why, when and with whom they work. The process of becoming an adept indirect instructor is cumulative and demands much time and reflection.

When a coach begins to ask synchronized swimmers questions, it is common to encounter some resistance from some athletes. The most important point I learned through dealing with athlete resistance during this research is to cultivate many coaching strategies. Ultimately, as a coach I must work to develop the individuals' potential and not all swimmers will adapt equally well to teaching for understanding. I will work to communicate as much as possible about where the program is going and why to all swimmers that I coach.

Going forward, I will get the teams of synchronized swimmers that I coach to create a library of movement more often. The unanimously positive response that the athletes had to the library was very exciting and memorable. The library creation showed me how powerful indirect instruction can be when it taps athletes' improvisation and design skills.

The teams that I coach will be built upon a foundation of team cohesion. I will never assume that team cohesion will grow without my guidance and encouragement. Emphasizing the unique contribution and strength that each swimmer brings to the team will be repeated consistently throughout the year. I will create situations that demand universal contribution from team members. In addition to having team meetings where team values and behaviors are generated, I will revisit this team code throughout the life of the team. Through good planning and shaping questions, I will illuminate the team's characteristics that foster group cohesion (i.e. distinctiveness, shared goals, group successes).

Finally, I am now a coach who understands that indirect instruction does not mean no instruction. My role is that of a guide. Great indirect instruction uses the coach as a teacher who escorts athletes through the larger context of their actions. Through timely and incisive questions, I will get the athletes to discover rather than repeat.

20.4 Future Directions for Research

Bunker and Thorpe (1982) developed the Teaching Games for Understanding model because teachers were realizing that for many children, techniques were of little value and that letting them play the game rather than focusing on technique teaching allowed children to enjoy themselves and develop a love of the game.

The difference between the swimmers I worked with in this study, and the children in physical education classes for whom Bunker and Thorpe (1982) developed their method, is that my swimmers knew the value of specific techniques before we started working together. These nine swimmers had enough experience in synchronized swimming to know what specific techniques they wanted to improve in order to swim their routines with success.

Future research should employ teaching for understanding with young synchronized swimmers who truly do become turned off by the repetition of techniques early in their careers and do not know the value of these techniques in context. The model would be tested for its ability to get young swimmers excited about synchro and have them fall in love with the sport. This research could look at the numbers of swimmers who stay in the sport after being first introduced to it through indirect instruction. In addition to sliding international results, lack of participation is one of the greatest threats synchronized swimming faces in Canada. I believe using indirect instruction and introducing the whole routine first could get more children excited about synchro and keep them in the sport for life.

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Appendix A

"Modified games forms were used to present tactics related to the need for service rule, how to score a point, hitting to open spaces, long and short game, left and right game...buying time to recover from a weak shot...analyzing an opponent's weakness" (Werner et al., 1996).

Modified routine forms can be used to present tactics related to the need for difficulty, how to score points, placement of highlights, artistic and technical games, height, power and efficiency games, buying time to recover from a difficult movement or section, analyzing an opponent's weakness (in pre-competition phase and through video analysis).

"When do you feel most comfortable hitting a ball, when the ball bounces near your feet or when it's up around your waist" (Thorpe 1983)?

When do you feel most comfortable switching to flutter kick, when you are sitting upright or when you are half way onto your side?

"What happens if you stand in the middle of the court and your opponent hits to the back? Go and see" (Thorpe 1983).

What happens if you press to overhead scull and the element requires additional height after your press? Go and see.

"When are defenses at their most vulnerable?...Is (the fast break) working? If not, why not?...What spaces did you find it best to use" (Bunker and Thorpe 1982)?

When are you at your weakest in a routine, why? Is your propulsion working? If not why not? What other kinds of propulsion could you use here? What space in the pool is it best to put your most difficult element? Why?

"Off the ball movement is often ignored but these movements should be taught if student's game performance is to be maximized" (Mitchell et al., 1994).

Transitional or between element movement is often ignored but should be taught if swimmer's routine performance is to be maximized.