A DIDACTIC ANALYSIS OF STUDENT CONTENT DEVELOPMENT DURING
THE PEER-ASSISTED LEARNING TASKS OF A UNIT OF SPORT EDUCATION

DISSERTATION

Presented in Partial Fulfillment of the Requirement for
the Degree Doctor of Philosophy in the
Graduate School of the Ohio State University

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The Ohio State University
2004

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ABSTRACT

Research on Sport Education (Siedentop, 1994) has shown the curriculum model to be effective in motivating students to undertake the specific sporting roles and engage in the student-centered tasks of the curriculum (Hastie, 1996). Despite this level of engagement, emerging evidence (Hastie, 2000) suggests that student leadership within the peer teaching tasks of the curriculum can be problematic for the development of particular content knowledge. The purpose of this study was to examine the evolution of content knowledge of a team of 6 students participating in the peer-assisted learning tasks of a Tag Rugby Sport Education curriculum unit. A qualitative case study design was employed. A didactic research methodology was utilized to study the evolution of participant content knowledge. The didactic protocol included collecting data regarding student intentions, actions and interpretations of content through the use of lesson observation and pre- and post-lesson participant interviews. Data analysis consisted of the identification of problematic episodes in the teaching-learning process or Critical Didactic Incidents (CDIs) during the peer assisted learning tasks and a search for configurations in the data across episodes.

Participants demonstrated a high level of engagement and compliance with the intended content of the peer assisted learning tasks. Results revealed the instructional approach of peer teaching to be efficacious in developing participants’ knowledge of many of the lower complexity tag rugby content learning goals of the unit. The provision
of coaching task cards within pre-lesson teacher brief sessions to coaches was effective in the alignment of student coach content knowledge with intended teacher learning goals. Participants failed to learn higher order content pedagogical strategy primarily due to deficiencies in the student coach’s ability to elaborate content through appropriate demonstration, error diagnosis and task modification.

The findings from this study lend support to Kirk and Kinchin’s (2003) proposal that the structure of the Sport Education curriculum allows students legitimate, peripheral participation in a community of practice. The ‘products’ of the peer assisted learning community, in terms of content learned, seems dependent on the quality of ‘coach’ preparation provided by the teachers. Teachers utilizing the curriculum must adequately prepare the student coaches for the tasks by teaching them, not only relevant content but also pedagogical principles required to effectively elaborate the intended content.
Dedicated to my wife, Leisa
ACKNOWLEDGMENTS

To my advisor, Dr. Mary O’Sullivan… sometimes when we reflect on our childhood schooling we remember a teacher or teachers who inspired us with their passion, communication and enterprise for the art of teaching. Mary, you are one of those people. Your professionalism, integrity and dedication to our field are a model to us all and I consider it an honor and privilege to have been one of your advisees. You have contributed greatly to the quality of this dissertation and my growth as a scholar as a whole and for that I thank you.

To my committee members, Dr. Phil Ward, Dr. Heather Davis, Dr. Janet Buckworth and Dr. Bruce Tuckman…you have provided both intellectual challenge and moral support through the process of my PhD program. I consider myself fortunate to have had the opportunity to interact with such conscientious, critical and caring scholars.

To Dr. Chantal Amade-Escot……thank you for providing the inspiration for the development of this project and continued guidance throughout its evolution.

To the participants in this study…..one of the joys of doing research in our field is interacting with teachers and students who are willing to embrace new ideas and work to make physical education a motivating experience for everyone involved. You all epitomize these characteristics. I feel honored to have worked with you all on this project and sincerely thank you for the time and effort you put into helping me with data collection.
To my friends from the program, Dr. Jackie Goodway, Dr. Susan Nye, Dr. Ismael Flores-Marti, Dr. Kim Bush, Dr. Kevin Lorson, Dr. Myung-Ah Lee, Dena, Carla and Bomna….without your camaraderie, humor and support over the past three years this process would have been a lot more difficult. Thank you for making life in America a lot easier…

To Peter and Dorothy……I feel blessed to have married into such caring in-laws. You have provided much needed respite during the high and lows of the program and I thank you for all the support you have provided Leisa and I to complete this part of our journey.

And finally to Leisa……Without your constant love and support I would not and could not have completed this project. Your selfless support and sacrifice will never be able to be repaid. I look forward to our continuing journey together…. 
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FIELDS OF STUDY

Major: Education

Minor: Sport and Exercise Education
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CHAPTER 1

INTRODUCTION

Over two decades ago, in an address to the curriculum and instruction section of the Commonwealth Games conference in Brisbane, Daryl Siedentop (1982) posited his belief that sport could be viewed as a subject matter of physical education. His belief was, however, tempered by his concerns regarding many contemporary pedagogical approaches to the teaching of sport in physical education and their presentation of content that he believed was often deemed by students to be, “dull and uninspiring” (Siedentop, 1987, p.80). He suggested that the reason for the lack of appeal for many of these games-based lessons was due to the skills of the game being taught in isolation from the context within which the sport was defined. In other words, the students were experiencing sport-based activities within physical education that were decontextualized from the associated sport culture the students understood.

Siedentop (1982) argued that sport could be viewed as a subject matter of physical education only if this situation were remedied, and students’ experience of sport in the context of physical education was both educationally rich and contextualized within their understanding of contemporary sport culture. To achieve this aim, Siedentop (1982) proposed a curriculum and instructional model that simulated key contextual
features of authentic sport and adopted an instructional structure where students gradually assume greater responsibility for learning within a range of student-centered learning strategies. This curriculum model was named, Sport Education and represented the genesis of a physical education curricular innovation, which has subsequently proliferated across the globe.

Although originally manifesting itself within an elementary school in the mid-west of the USA, Sport Education has since been implemented in physical education programs across many areas of the English-speaking world, including initiatives within schools in the USA (Hastie, 1996, 1998, 2000), New Zealand (Grant, 1992), Australia (Alexander, Taggart & Medland, 1993; Alexander, Taggart & Thorpe, 1996) and the UK (Kinchin, Quill & Clarke, 2002; Wallhead & Ntoumanis, 2004). Interest shown in the model by teachers has attracted the attention of sport pedagogy researchers, such that, within the past two decades over fifty peer-reviewed articles of both practical applications and data-based studies of the Sport Education curriculum have been published in the physical education literature.

Much of the evidence from research on Sport Education points to the success of the curriculum in facilitating many student process variables that were objectives of previous physical education programs, but were never realized through the multi-activity, traditional approaches (Alexander et al., 1996). Research on Sport Education has provided evidence that the seasonal structure of the curriculum model motivates students to undertake specific sporting roles and engage in the student-centered tasks associated with the curriculum (e.g. Hastie, 1996). The research has also shown the model to be efficacious in developing other student behaviors. For example, the national trials of
Sport Education in New Zealand (Grant, 1992) and Australia (Alexander et al., 1996) provided evidence that the curriculum was effective in developing student social and personal skills, such as co-operation and peer support. Data gathered from teachers’ reflections on the model, emphasized that the curriculum increased the level of interaction and cooperation between students, and served to change the teachers’ thinking about how the more general aims of child-centered education, often embraced by terms like personal and social development, can be achieved.

Despite these positive findings, the research on the effectiveness of Sport Education in facilitating other important student educational outcomes are somewhat equivocal. Evidence from the large-scale studies of teacher perceptions of Sport Education (Alexander et al., 1993) revealed that teachers are skeptical that Sport Education can contribute to the development of students’ motor skills and content knowledge.

Arguably, the most significant pedagogical difference between the Sport Education curriculum and the multi-activity model of physical education (Locke, 1992) is its reliance on peer teaching instructional strategies. Research on the efficacy of utilizing peers to teach content in general education has proliferated since Bloom (1984) showed that the achievement level of a one-on-one tutoring condition was 2-sigma above the average control student taught under conventional group methods of instruction. Many contemporary peer-assisted learning strategies have been devised to simulate the conditions of the one-on-one tutoring condition. Student-centered approaches to teaching, such as peer assisted learning strategies have been shown to increase students’ motivation to learn by developing their self-regulated learning strategies (Pintrich, 1999). Deci and
Ryan (1985) have theorized that giving students responsibility for establishing their learning environments fosters perceived autonomy and perceptions of self-determination which leads to more self-orientated forms of motivation. Despite the evidence to suggest that peer-assisted learning strategies increase student motivation to learn, the potential of the pedagogical approach in facilitating student content knowledge in physical education remains largely untested. Specifically, research on the effectiveness of peer teaching based curriculum, such as Sport Education, on student content knowledge development appears somewhat equivocal.

Teachers initially expressed concerns regarding the potential lack of effective student leadership within the student-directed tasks. They questioned the efficacy of a model, which relinquishes much of the responsibility for teaching content to students (Alexander et al., 1993). This skepticism seems to have persisted and was reflected in the results of a recent survey of over 377 Australian teachers’ perceptions of the educational impact of Sport Education (Alexander & Luckman, 2001). The teachers were critical of the students’ role performance, especially in relation to the effectiveness of student coaches in facilitating peers’ motor skill and content knowledge development. Empirical evidence has supported these assertions by suggesting that some student coaches may be quality players, but are unable to provide quality practices for their students (Hastie, 2000), or provide the quality of error detection feedback needed by students (Carlson, 1995).

Despite the emerging concerns regarding the potential lack of effective student leadership within the peer teaching tasks of the Sport Education curriculum, there
remains a dearth of research that has investigated student interaction within these tasks and its effect on student development of content knowledge and performance.

Statement of the Problem

Although evidence suggests that student leadership within Sport Education can be problematic for the development of student content knowledge (Hastie, 2000), to date, little research exists that has examined this variable within the peer-assisted learning tasks of a Sport Education curriculum. Siedentop (1995) emphasized his concerns that, “a void exists in how to identify, teach, and provide practice for the leadership skills necessary for successful coaching within the tasks of the curriculum” (p.22). This void can only be filled by acquiring a greater understanding of the nature of student interaction that occurs within the specific content of the peer-assisted learning tasks of the curriculum, and how these behaviors shape peer content knowledge development. By developing a greater understanding of the dynamics of this instructional approach and its effect on student learning more informed recommendations can be developed on how to deliver the curriculum.

An ecological approach has been used to describe student interactions within the peer-assisted learning tasks of a Sport Education curriculum (Hastie, 2000). This approach, initially theorized by Doyle (1977), qualitatively examines classroom events from the perspective of the dynamic interplay between three main task systems in classrooms, the instructional, managerial and student social systems. Previous research (Hastie, 2000) using the ecological approach has revealed that a Sport Education season changed the way students socialized within class, such that they exerted greater effort within the instructional task system. A limitation of the Hastie (2000) study, as with other
ecological approaches to understanding how task systems operate in the gymnasium (e.g. Tousignant & Siedentop, 1988), is the lack of attention paid to the actual content taught and learned within the instructional system. Without attention to content-related participant behaviors within tasks, inferences on the effectiveness of peer teaching behaviors on specific content learned by peers is difficult.

A European-based research methodology that may have the potential to fill this void by providing a richer description of the interaction of students in attempting to learn the content embedded in the peer-assisted learning tasks of a Sport Education season is the didactical approach (Amade-Escot, 2000a). The purpose of this specific didactic methodology is to understand the teaching-learning process by taking into account the characteristics of the actual content intended to be taught, and learned within the instructional task system. The qualitative methodological framework associated with the approach focuses on the didactic system, which analyzes the interaction of the teacher and students as students engage with the lesson content. Within the analysis of the ternary system of teacher, student and content to be taught there is an assumption that the piece of knowledge to be taught is the salient variable in the whole teaching-learning process (Amade-Escot, In Press).

The epistemological roots of didactics are centered within social constructivist theories of learning (e.g. Piaget and Vygotsky) and the assumption that knowledge is constructed within situated social contexts. Within didactic analysis, learning is assumed to be shaped by the participants’ interpretation of the salient variable of content and their status and role in the immediate social context in which the interaction takes place (Schubauer-Leoni & Grossen, 1993). In other words, the meanings the teacher and
students attribute to the task from their own background and the specific roles each play within the triadic system underpin the evolution of content. The construction of content knowledge is therefore assumed to be dynamic and unpredictable as it is constantly evolving through participant interpretation within specific social situations (Amade-Escot, In Press).

During peer teaching contexts, such as in the Sport Education curriculum, where the student takes the role of the teacher, an auxiliary didactic system operates (Amade-Escot, 2000a). This auxiliary didactic system is made up of the student task leader, peer participants and the content embedded within the tasks. With the ecological and didactic approach, task leader’s and learner’s behaviors are important to understanding the teaching-learning process. However, it is the didactic focus on understanding the way these interactions are embedded in instructional tasks that allow for the specific study of content knowledge development (Amade Escot, 2000a).

Purpose of the Study

The purpose of this study was to examine the development of content knowledge and performance of a team of 6 students participating in peer-assisted learning tasks of a Sport Education curriculum unit. Student content knowledge development within the student-led tasks of the curriculum was analyzed using a specific didactic research methodology (Amade-Escot, 2000b). This didactical approach is situated within a qualitative methodology and aims to describe the teaching-learning process by taking into consideration the characteristics of the actual content taught and how the students interact with the content as they engage with each other within instructional tasks. The didactical protocol was used to gather data about student intentions, actions and interpretations of
content knowledge during their engagement in peer-assisted learning tasks. The didactic protocol allows for analyses of the alignment from the intended learning goals, the knowledge taught to the actual knowledge learned, and thus the effect of the peer-assisted learning tasks on student content knowledge and performance development.

Research Questions

1. How did student knowledge and performance of the content of tag rugby evolve during the peer-assisted learning tasks associated within a unit of Sport Education?
   1.1. What (mis)alignment existed between the knowledge intended to be learned by the teacher, the knowledge taught by the student coach and the knowledge actually learned by the participants? What factors operated in the tasks to shape the evolution of the didactic contract of content learned?

2. What tag rugby content knowledge did participants understand and perform as a result of the peer-assisted learning tasks of the Sport Education unit?
   2.1. What (mis)alignment existed between unit learning goals intended by the teacher and actual student knowledge and performance demonstrated during practice and game play situations.

3. Did the participants learn, as a result of the peer-assisted learning tasks, any additional content knowledge not intended by the teacher. What is the relevance of this content knowledge to participant performance?

Significance of the Study

The research is significant because currently little empirical evidence exists in the field of sport pedagogy on the development of content knowledge within peer-assisted learning tasks associated with a Sport Education curriculum unit. This study allows
greater insight into the quality of instruction provided by students when they lead content development and also provides a closer examination of the degree to which the Sport Education model allows for the transmission and/or transformation of content by students. From a methodological perspective this study extends the ecological research methodology by employing a theoretical framework and data collection strategy, which analyzes the teaching-learning process embedded within the specific content of instructional tasks. This study is the first known US sport pedagogy research to utilize the didactic protocol to analyze the teaching-learning process within peer teaching contexts and serves to expand the methodological possibilities for examining this complex and dynamic instructional phenomenon.

From an applied perspective the findings of the study provides important information about the nature of student task leaders’ understanding and transmission of content knowledge within the peer-assisted learning strategies associated with the Sport Education curriculum. The study provides a rich description of the dynamics of peer interaction during instructional tasks and the impact these student interactions have on content learning. This information will be valuable for subsequent Sport Education professional development programs as it provides a greater understanding of the ways peer teaching tasks operate to develop student learning and thus provides information to guide the design of more robust Sport Education curriculum interventions.

**Limitations and Delimitations**

There are several limitations and delimitations of this study.
Limitations

1. The study was limited to obtaining students’ perceptions of the interaction within specific tasks of the curriculum. It was not possible to determine the impact of outside effects on the dynamics of participant interaction and development of content knowledge within the tasks.

2. Although efforts were made to “negotiate consent” (Denzin & Lincoln, 2000, p.633) by attempting to build and share mutual trust with participants, given the relative short duration of contact time involved in the study the degree to which the students shared their feelings and attitudes towards their peers and the tasks was a concern.

3. A quasi-ethnographic design of data collection was utilized in this study. This design meant that interpretations of behaviors were made by participants as well researcher observers (Denzin & Lincoln, 2000). The students acted as “informants” during a collaborative data collection and interpretational study design. The same students were also participants and so had a vested interest in the outcome of the curriculum which may have confounded valid interpretation.

4. The data collection protocol included post-lesson stimulated recall interviews with participants. The focus of these interviews was limited to reflections on participant behavior during instructional tasks and not scrimmage game performance. This focus limited the potential for description of participant interpretation of game play performance. The provoked reflections may have also acted as an artificial catalyst for participants to reflect and evaluate their content
knowledge. This intervention would not normally occur during a regular Sport Education unit.

Delimitations:

1. This case study was limited to the description of the content development of a single group of six students within a Sport Education participated in by a full class of 26 eighth grade students. As only a single group of students was analyzed cross case analysis was not possible within data interpretation.

2. The study took place within a suburban public middle school consisting of students from middle to high-income households. Care must be taken in suggesting patterns of content development to other Sport Education interventions conducted in, for example, urban settings where the availability of resources and facilities may be significantly reduced.

3. The duration of the study was only 15-lessons which precluded the content knowledge development associated with the normal 20-lesson Sport Education unit length.

4. The teacher involved in the study was purposefully sampled, based on her knowledge of both tag rugby and the Sport Education curriculum. The instructional tasks utilized within the unit were also designed by the researcher, who had an extensive knowledge of tag rugby. Caution must be taken in interpreting the content development of students within this intervention to the content development of students who are experiencing a unit of Sport Education taught for the first time by a teacher new to the curriculum and activity of tag rugby.
Definition of Terms

**Affiliation** – students become a member of a team immediately and maintain that membership throughout the length of the unit. Used to allow for role differentiation and individual responsibility relative to the group (Siedentop, 1994).

**Auxiliary Didactic System** - The irreducible three-way relationship linking student coach, students and the piece of knowledge taught (Amade-Escot, 2003).

**Competent Performer** – “a sportsperson who has sufficient skills to participate in games satisfactorily, understands and can execute strategies appropriate to the complexity of play, and is a knowledgeable games player” (Siedentop, 1994, p.4).

**Content Knowledge** – Specific knowledge of the activity (tag rugby) required to perform the instructional task, e.g. knowledge of how to pass the ball accurately to execute a 2v1 Pass and Support task.

**Content-Embedded Accountability** – Tasks where there is accountability intrinsic to the manner in which the activities develop and the goals are to be achieved (Hastie & Siedentop, 1999). For example, a task that has specific content learning goals and has value to the outcome of the lesson or unit of work.

**Critical Didactic Incident (CDI)** – Classroom events or a set of activities linked with the pedagogical content taught in which a significant failure in the teaching-learning process is observed. (Amade-Escot, 2003).

**Didactics** – The study of the features of teaching that are specific to the content knowledge taught (Amade-Escot, 2000).

**Didactic Contract** – Negotiations between teacher and students on content knowledge to be taught and learned in a given task (Amade-Escot, 2000).
**Didactic System** – The study of content and its function in the teaching-learning process. The irreducible three-way relationship linking teacher, students and the piece of knowledge taught (Amade-Escot, 2003).

**Didactic Transposition** – “The phenomena of transformation, elaboration and reconstruction of the knowledge to be taught” (Amade-Escot, 2000a). How the teacher/student coach transforms and verbalizes the knowledge embedded in the task to the participants during the teaching process.

**Ecological Approach** – A qualitative research methodology, which examines classroom events from the perspective of the dynamic interplay between the task systems of instruction, management and social system (Doyle, 1977).

**Extrinsic (Etic) Data Sources** – Data obtained from the observer including lesson observation (Amade-Escot, In Press).

**Enthusiastic Performer** – “A sportsperson who participates and behaves in ways that preserve, protect, and enhance the sport culture” (Siedentop, 1994, p.4).

**Institutionalized Sport** – Sport that is governed by a codified set of rules and has a public role within part of a culture (Siedentop, 2002).

**Intrinsic (Emic) Data Sources** – Data obtained directly from participants including pre- and post-lesson interviews (Amade-Escot, In Press).

**Literate Performer** – “a sportsperson who understands and values the rules, rituals, and traditions of sports and is able to distinguish between good and bad sport practices” (Siedentop, 1994, p.4).

**Necessary Breach in the Didactic Contract** – An intervention provided by the teacher served to re-align participant learning with intended goals.
Pedagogical Content Knowledge (PCK) – “The special amalgum of content and pedagogy that is uniquely the province of teachers, their own form of professional understanding” (Shulman, 1987, p.8).

Play Education – Theory which argues that cultures of physically active play are fundamentally important to collaborative social life and that bringing children and youths into contact with those cultures through educationally sound practices is sufficient to justify physical education as a school subject (Siedentop, 1968).

Problematic Breach in Didactic Contract – An episode of classroom interaction where there is a significant misalignment between the intended and actual content learned by participants. The majority of the students (80 percent) fail to achieve the intended learning outcomes.

Seasons - The length of the curriculum unit, usually two to three times longer than a normal physical education unit. Encompasses both practice, competition and a culminating event.

Sport Education - “a curriculum and instructional model designed to provide authentic, educationally rich sport experiences for girls and boys in the context of school physical education” (Siedentop, 1994, p.3). Siedentop integrated six key features of sport within the Sport Education curriculum that were derived from how sport is conducted in community and inter-school contexts. These features were seasons, affiliation, formal competition, record keeping, festivity and culminating events.

Student Social System – Students’ motivation to socialize and have fun whilst achieving a passing grade and performing the minimum amount of work (Hastie, 2000).
Tasks – The organizational, goal-oriented practice designed to transfer the knowledge of content, e.g. 2v1 offensive overload task to teach the content of appropriate timing of the pass.
CHAPTER 2

REVIEW OF LITERATURE

In a recent retrospective on Sport Education, Siedentop (2002) indicated that around 50 articles on the curriculum model now exist within the sport pedagogy literature, with a large majority of these being research based. Despite the proliferation of research that has focused on the model, to date, there has been no attempt to synthesize the results of this research. The purpose of the first section of this chapter is to provide an overview of the model and synthesize the main findings of the research on the Sport Education curriculum. This review will serve to inform the relevance of the research questions posed within this study and situate the theoretical and methodological review of peer assisted learning research that is provided in section two.

The second section of this chapter provides an overview of the theoretical frameworks and methodological perspectives, which have been utilized to study peer-assisted learning strategies in education. The section begins by providing an overview of behavioral, developmental and socio-cultural perspectives of student learning and their potential application to understanding the peer-teaching instructional context. The section concludes with an overview of two methodological perspectives that have been used (or have the potential for utility) in understanding the dynamic teaching-learning process.
during peer assisted learning tasks. The approaches to student learning within physical settings reviewed as are the ecological and didactic perspectives. Concluding the chapter is a summary of the research in physical education that has used the relevant approaches.

What is Sport Education?

The Sport Education curriculum model emerged from a coalescence of Daryl Siedentop’s interests in the relationships between physical education and play, and in teacher effectiveness research in school physical education. Drawing heavily on the work of Huizinga and Caillois, Siedentop (1982) argued that physical education was best explained by reference to play education theory. This theory argued that cultures of physically active play are fundamentally important to collaborative social life and that bringing children and youth into contact with those cultures through educationally sound practices is sufficient to justify physical education as a school subject (Siedentop, 1968). Siedentop (1982) went on to assert that sport, when done well, is the apotheosis of play. Play education, as a curriculum theory, did not have a sufficiently substantive form to guide practice (Siedentop, 1998) and so, “Sport Education was developed as a logical extension and concrete form of play education” (Siedentop, 1987, p.80).

In addition to his support for play education within physical education, his conceptualization of Sport Education resulted from reflections on teaching effectiveness research (Siedentop, 1987). In observing both pre-service and in-service teachers, Siedentop (1987) described, “that often teachers could utilize reasonably effective managerial and instructional strategies and still have a lesson that was sometimes dull and uninspiring to students” (p.80). He posited that the reason for the lack of appeal of these games-based physical education lessons was because the skills of the game were
taught in isolation from the context that provided the framework within which the sport was defined. In other words, the students were experiencing activities within physical education that were decontextualized from the associated sport culture of out-of-school youth sport. In essence, the Sport Education model, evolved in response to Siedentop’s search for more educative ways of presenting sport in the school curriculum and creating learning tasks with more meaning and value for the students. Siedentop (1987) stated that, “this search for contextuality gave birth to the Sport Education model” (p.81).

Siedentop’s devised Sport Education as, “a curriculum and instructional model designed to provide authentic, educationally rich sport experiences for girls and boys in the context of school physical education” (Siedentop, 1994, p.3). To achieve this authenticity of experience, Siedentop integrated six key features of institutionalized sport within the Sport Education curriculum. These features were seasons, affiliation, formal competition, record keeping, festivity and culminating events.

From a curricular standpoint, Siedentop (1994) suggested that students in a Sport Education unit should participate in a “season” that is two to three times longer than the typical physical education units. The basic premise of his argument being that fewer activities covered in greater depth will result in better educational outcomes. Utilizing the term, “affiliation”, Siedentop (1998) also delineated that within Sport Education, students should become members of a persisting team that allows them to, “plan, practice and benefit from the social development opportunities that accompany membership in a persistent group” (p.18). Another essential feature of Sport Education is the “schedule of competition” which is organized at the outset of the unit, and allows all students to practice and play within a predictable schedule of competition. This schedule should
provide all students with the opportunity to participate in games throughout the entirety of the season and minimizes exclusionary schedule formats such as “knock-outs”. Within the schedule of competition, Siedentop (1998) suggested that “records” of student performance are kept for purposes of motivation, feedback, assessment and to build standards and traditions. Finally, Siedentop (1998) emphasized that the season be “festive” with continuous efforts made by the teacher and students to celebrate success and a “culminating event” planned to mark the end of the season and celebrate the achievements of the students.

Siedentop et al, (1986) believed physical education should educate students in regard to the associated skills and strategies and promote aspects of positive sport culture, including making students advocates for fair play, equity and inclusion. To avoid some of the considerable problems associated with professional sport culture, such as elitism, inequity and cheating (Curnow & McDonald, 1995) Siedentop purposefully did not devise Sport Education as a direct simulation of institutionalized sport. Instead, Siedentop (1987) designed the curriculum, such that participation was emphasized and, “all students play equally and have equal opportunity to learn positional play” (p.81). He delineated that the sport forms used in Sport Education should be matched developmentally to the abilities of students and while playing hard to win should be stressed, the dominating “ethic” of Sport Education is to take part fairly and to improve individual performance. The Sport Education curriculum was thus situated within a larger educational and cultural purpose, to educate students on the facets of a more positive sport culture. Recent discourse (e.g. Penney, 2003; Shehu, 1998) has questioned the potential of Sport
Education to be an agent of change in reproducing more positive sport cultures due to its hegemony with prevailing sport practices in Western society.

The implementation of the essential structural features of Sport Education necessitated a reliance on differing instructional strategies. Within Sport Education students learn diverse roles including referee, captain, scorer or coach. Siedentop (1998) suggested that these roles are best learned through a combination of instructional strategies including direct instruction, co-operative small-group work, peer teaching and conflict-resolution mechanisms. These pedagogical strategies were proposed in response to Siedentop’s perception of a climate of tensions that were prevalent in contemporary “win-at-all-costs” sport culture. Siedentop (1998) stated that, “the conflict-resolution mechanisms are necessary and become important aspects in the Sport Education format as with students participating on teams for the duration of a season, conflicts will arise. Students should be taught, “appropriate ways to respond to refereeing decisions and those behaviors should be enforced” (p.19).

Through the utilization of these specific curricular and instructional strategies Siedentop (1994) posited the ambitious goals for the curriculum. Sport Education should “educate students to be players in the fullest sense and to help them develop as competent, literate and enthusiastic sportspeople” (Siedentop, 1994, p.4). In establishing these goals, Siedentop (1994) went further in delineating his interpretation of what he meant by the phrases, a competent, literate and enthusiastic sportsperson. A competent sportsperson was defined as someone “having sufficient skills to participate in games satisfactorily, can understand and execute strategies appropriate to the complexity of play, and is a knowledgeable games player” (Siedentop, 1994, p.4). A literate
sportsperson is, “able to understand and value the rules, rituals and traditions of sports and can distinguish between good and bad sport practices whether in children’s or professional sport” (p.4). Finally Siedentop (1994) defined an enthusiastic sportsperson as, “someone who participates and behaves in ways that preserve, protect and enhance the sport climate, whether it is a local youth sport culture or a national sport culture” (p.4). Siedentop’s vision was that student learning in physical education should not only be contextualized but should provide a stimulus for students to be motivated to positively contribute to the sport culture within the wider context of society.

To achieve the goals of the curriculum, Siedentop (1994) proposed that students who participated in a Sport Education curriculum would have to achieve specific learning objectives. In common with the objectives of many of the contemporary sport-based curricular programs, such as multi-activity models, students participating in a Sport Education unit would have to develop their motor skills, tactical decision-making and fitness specific to the particular sport being studied. In addition to these objectives, Siedentop (1994) delineated that students be able to provide responsible leadership, share in the planning and administration of the sport experiences, and participate at an appropriate stage of development whilst working effectively within a group toward common goals. Siedentop (1994) emphasized that students should become critical consumers of the sport experience by appreciating the rituals and conventions of sport and developing the capacity to make reasoned decisions about sport issues. Specifically, Siedentop (1994) highlighted his goal that students should learn the conventions of record-keeping to celebrate success and should be a proponents of the ethos that, “neither gender, race, SES, disability or age should be barriers to sport participation” (p.6)
Findings from Research on Sport Education

Research on Sport Education conducted over the past two decades has served to provide empirical evidence of the efficacy of the model in facilitating many of Siedentop’s envisioned goals. Evidence points to the success of the Sport Education curriculum in facilitating student outcomes that were objectives of many previous PE programs, but were never realized through the “multi-activity, traditional approaches” (Locke, 1992, p.365).

One product of the Sport Education experience that Siedentop envisioned students would achieve was the development of enthusiasm. Stemming from his behavioral perspective of student outcomes of physical education, Siedentop (1994) defined enthusiasm as high levels of student engagement and participation in instructional tasks. A common theme of Sport Education research is student engagement with instructional tasks and their participation within the defined roles of the Sport Education structure. Student reflections of their experiences within a Sport Education season seem to suggest their perceptions of higher levels of engagement (Bennett & Hastie, 1997) and more practice time (Pope & Grant, 1996) than in previous physical education lessons. Studies that have utilized quantitative observations of student behavior (Carlson, 1995; Hastie, 1996, 1998b) have supported these findings by providing evidence of high levels of student participation within both practice and scrimmage tasks associated with the curriculum. Utilizing a systematic observation instrument (ALT-PE: Siedentop, Tousignant & Parker, 1982) Hastie (1996) reported a high level of student engagement and accuracy whilst participating in non-playing roles associated with the curriculum. Utilizing student interview data to provide insight into students’ rationales for their
engagement, Hastie (1996) found that the students reported enjoying taking administrative roles and expressed a preference for student coaches in relation to teacher direction and persisting team membership. The formalizing of competition also seemed to help promote involvement, especially with the lower skilled students (Hastie, 1996).

Most of the Sport Education research that has examined student participation within the curriculum has utilized assessments of student engagement defined in terms of the percentage of time students are on-task. Recent public health discourse on the potential role of physical education in promoting lifetime physical activity has begun to stimulate inquiry into defining participation, not just in terms of student task engagement, but also in terms of levels of student physical activity. In light of this policy, Hastie and Trost (2002) examined Sport Education from the perspective of the extent to which it provides students with sufficient opportunities for developing moderate-to-vigorous physical activity (MVPA) within physical education. Utilizing a single group of nineteen, 7th grade boys, within a season of floor hockey, Hastie and Trost (2002) revealed that, “both high and low skilled students averaged greater than 54 percent MVPA throughout a 20-lesson Sport Education unit of floor hockey” (p.28). Although no comparison group was employed within the study, the level of student physical activity achieved exceeds the threshold of 50 percent of MVPA per lesson delineated as a goal of Healthy People 2010.

To provide a theoretical explanation for the high levels of student engagement and participation observed during Sport Education, Carlson & Hastie (1997) examined student participation from an ecological perspective. Utilizing a combination of qualitative data sources, including fieldnotes, interview and videotape data, Carlson and
Hastie (1997) found that a Sport Education season changed the way students socialized within class, such that they exerted greater effort within the instructional task system. “The data suggested that because students were placed in both instructional and managerial leadership roles, the typically teacher-driven task system became an integral part of the student social system” (Carlson & Hastie, 1997, p.176). In other words, the social interaction created by the instructional strategies of peer teaching and co-operative group tasks implemented within the model was motivated students to engage with the content embedded within the instructional tasks.

Teachers’ reflections on student social interaction during peer teaching provided initial evidence that Sport Education may also have the potential to produce meaningful personal and social development outcomes (Alexander et al., 1996). Teachers reported that Sport Education increased the level of interaction and cooperation between students, and served to change their thinking about how the more general aims of child-centered education often embraced by terms like personal and social development, can be achieved (Grant, 1992). “Students were developing qualities such as leadership, teamwork, peer support and active pursuit of socially responsible and equitable participation beyond what was evident in previous teaching approaches” (Alexander et al., 1996, p.37). Alexander and Luckman’s (2001) survey of 377 Australian teachers’ perceptions on the educational impact of Sport Education provided some anecdotal evidence for the increase in socialization skills. They suggested what was being learned in Sport Education units had shifted markedly toward personal and social skills. Such a shift in outcomes has been aided by the co-operative group structure and constructed by a
model and a pedagogy offering an extended season, persisting groups, less direct teaching and more responsibility for students (Alexander & Luckman, 2001).

Based on the assumption that student on-task behavior is a proxy for student skill development, teacher anecdotal evidence of high student engagement seemed to have propagated a perspective that the curriculum may also be effective in developing students’ motor skill and tactical knowledge. Early large-scale trials in New Zealand (Grant, 1992) and Australia (Alexander, Taggart & Thorpe, 1996) supported this assertion by suggesting that the curriculum facilitated student motor skill improvement. Teachers involved in the Australian project (Alexander et al., 1996) reported that students’ motor skill had improved and was as a result of, “a combination of a longer unit of work, increased motivation amongst students as they learned to work effectively in persisting groups, the relevance offered by competition and the removal of the need for teachers to always be organizers and disciplinarians” (Alexander et al., 1996, p.36).

Despite these positive results, exemplars of research that have contradicted these findings have begun to emerge. For example, Curnow and McDonald (1995), using field notes taken from videotape observations and student surveys, reported that the skill development of low-skilled girls was not achieved within a co-educational Sport Education season, as males often dominated possession and contact with ball.

Although some evidence (Hastie, 1998a) has been provided to support the assertion that Sport Education is effective in developing student game-play competence, other findings (e.g. Curnow & McDonald, 1995) suggest otherwise. The verdict on the effectiveness of the curriculum in developing student content knowledge and performance is still out and further empirical evidence is required to validate the claims.
Hastie (1998a) provided one of the few studies to attempt to quantitatively assess students’ skill and tactical competence development within a Sport Education season. Observing six students during a 30-lesson unit of ultimate frisbee, Hastie (1998a) found a significant improvement in team game-play efficiency performance (Grehaigne, Godbout & Bouthier, 1997) as the season progressed. In terms of specific skill dimensions, there was a significant increase in team passing and receiving consistency, however, it should be noted that no individual player made significant improvements in passing or catching. An analysis of specific tactical dimensions of game play revealed an increase in the students’ utilization of short, efficient passes and an improved percentage of interceptions’ of opposition passes within game play. The results of this study emphasize that while the Sport Education curriculum may serve to motivate students to engage in instructional tasks and facilitate knowledge of team game play strategy it may not effective in developing individual motor skill.

The lack of empirical studies that have specifically examined development of student skill and tactical competency along with equivocal evidence from other large-scale studies of teacher perceptions of Sport Education (Alexander et al., 1993; Alexander & Luckman, 2001) has provoked a debate on the efficacy of the instructional strategies embedded within the curriculum in facilitating improvement in skill execution and tactical decision-making. After the Western Australian trial (Alexander et al., 1993), teacher’s identified some concerns with the model, believing a more prescriptive approach to skill development was needed. “If affective outcomes were to be sought through developing students’ responsibilities, teachers would need to develop other means of arranging the psychomotor learning environment.” (Alexander, 1994, p.7). This
concern seems to be reflective of Alexander & Luckman’s (2001) recent survey of Australian teachers’ perceptions of the educational impact of Sport Education. When asked if motor skill development was more achievable under Sport Education than their previous approach, only 54 percent of the teachers agreed or strongly agreed. Of interest, is that the two outcomes of skill development and knowledge of game strategies had a combined importance rating of 60 percent under Sport Education. In other words, many teachers still highly valued these student outcomes within their delivery of the Sport Education model but believed the outcomes were less achievable (Alexander & Luckman, 2001).

Explanation for the potential ineffectiveness of the model in facilitating student skill and tactical development has pointed to the lack of leadership skills exhibited by students within the peer teaching instructional tasks of the curriculum (Hastie, 2000). Since the early large-scale trials of Sport Education in Australasia, teachers have been skeptical of the efficacy of a model, which relinquishes much of the responsibility for teaching content, whether it be related to skill execution or tactical decision-making, to students. Alexander et al. (1993) found that many teachers had concerns about the educational aspects of the model, for example, the development of effective teaching behaviors. Alexander and Luckman (2001) also found that secondary teachers were more critical of students’ role performance especially in relation to the effectiveness of student coaches. Research has also suggested that some coaches may be quality players but are not able to provide quality practices for their students (Hastie, 2000) or are unable to provide the quality of error detection feedback needed by fellow students to learn the content of the lesson or unit (Carlson, 1995).
In addition to this criticism of student leaders’ inability to provide appropriate pedagogical content guidance within the peer teaching tasks, several research studies (Curnow & McDonald, 1995; Hastie, 1996, 2000) have also questioned whether the students who are given responsibility are able to act in ways that do not alienate or oppress their teammates. Although Alexander (1994) reported that the model may have the potential to be a positive agent of change in altering student attitudes towards gender inclusivity, Alexander’s et al (1996) findings on the issue of inclusivity were somewhat contradictory, as analysis of the student’s journals revealed that teachers’ perceptions of equitable arrangements seemed to be overly optimistic.

In a case study investigating gender inclusiveness within a co-educational unit of Sport Education, Curnow and MacDonald (1995) revealed that a number of gendered notions became evident as the season progressed. Boys dominated possession of the ball within games and occupied many of the central roles of power within the season. Hastie (1998b) also found aspects of gender inequality were evident within a Sport Education season. Boys, again were given power positions and a number of gendered notions became evident, interviews with participating students revealed perceptions that, “boys are naturally better at sports, boys automatically make better players and boys are more serious about sport” (Hastie, 1998, p.169). Curnow and McDonald (1995) proposed that the increased freedom associated with the Sport Education approach allowed the reinforcement of such gender stereotypes. Hastie (1998) went on to suggest that, “the Sport Education unit, although not outwardly promoting these opinions, did nothing to correct or modify them. It may have provided equal opportunities for girls to practice and become skillful but it did not overtly address equality issues” (p.169).
In summary, it seems the results of the Sport Education research emphasize the model is effective in socializing and motivating the predominance of students to engage within the instructional tasks associated with the curriculum. What is not clear, to date, is how effective the pedagogies that operate within the instructional context are in facilitating inclusive practices that are conducive to student skill and tactical content development. Arguably one of the more significant pedagogical differences between Sport Education curriculum and the multi-activity model of physical education is its reliance on a peer-assisted learning instructional strategy. Despite this seemingly important difference, research that has specifically analyzed the nature of student interaction and learning within the peer assisted learning tasks of the curriculum has not been well studied. The purpose of this study was to provide a greater insight into the nature of peer interaction and subsequent content learning that goes on within the peer teaching tasks of a unit of Sport Education.

Peer Assisted Learning

Within general education over the past two decades, the pedagogical strategy of using student peers to directly and indirectly facilitate learning outcomes has become more commonplace in schools. Although there has been a longer history of the use of peers in education, arguably the empirical stimulus for the proliferation of this practice occurred in 1984, when Bloom reported on two dissertations that compared learning under conventional instruction, mastery learning and tutoring. Bloom (1984) revealed that for the one-on-one tutoring condition the average student was 2-sigma above the average control student taught under conventional group methods of instruction. He noted
that, “the average student in a tutorial instruction class performed better than 98% of the students in the conventional instruction class” (p.4).

Despite the “tutors” in Bloom’s study being college education majors and not peers of the tutees, the large difference in student achievement between instructional settings seems to have provoked subsequent research into the use of peers as a potentially effective teaching strategy. The use of peers as a strategy for teaching has been labeled, “peer assisted learning” (Ward & Lee, In Press, p.1). Ward and Lee (In Press) propose that, “peer assisted learning (PAL) can be further classified into teaching strategies that use peers as a component of direct instruction (Rosenshine, 1979) such as teaching by tutoring, modeling and assessing or those that involve structured and often sequenced collaboration to achieve a common goal for a group such as cooperative learning strategies” (p.7). “During peer tutoring and peer teaching the instructional task stays the same, while in co-operative learning tasks each student is required to contribute a piece of the total task” (Ward & Lee, In Press, p.3).

Within the general education literature, reviews of peer assisted learning (e.g. O’Donnell & King 1999) have separated the two pedagogical strategies of peers in direct instructional roles (tutoring and teaching) and in co-operative learning roles. Ward and Lee (In Press) suggest that:

The reasons provided for this distinction include: (a) the absence of specific error correction techniques in cooperative learning (b) emphasis placed on the distinction between the knowledge held by the tutor in peer tutoring versus the shared learning role of students in cooperative learning arrangements (c.f. Slavin,
1991), and differentiating between competitive versus cooperative arrangements (c.f. Johnson & Johnson, 1982) (p.7).

These distinctions, although arguably based upon reflections on fundamental differences in pedagogical strategy, may also represent differing theoretical positions on the nature of student learning within peer assisted learning tasks.

Theoretical Frameworks for Understanding Peer Assisted Learning

Behavioral Learning Theory

Research utilizing a behavioral approach to investigating peer tutoring is extensive in both general and special education settings (Greenwood et al., 1989; Greenwood et al., 1991). Behavior analysis emphasizes the external environment in shaping students’ behaviors. In their review of peer assisted learning, Ward and Lee (In press) noted:

the behavioral view includes consideration of private behaviors that occur within the person such as thinking (e.g. self-reflection, self-talk, and problem solving) and feelings (e.g., love, anxiety, and joy), rather than seek to explain these behaviors in terms of mediational constructs or to attribute agency to them, behavior analysts look instead for explanations in the environment (e.g., current and historical determinants) (p.13).

Ward and Lee’s (In press) perspective thus categorizes behavior analysis as non-mediational. In other words, it draws its explanation of learning through an analysis of the interaction between the environment and behavior. Environmental learning processes are defined by their effects on behavior that can be described in terms of the development of a new behavior, maintenance of a behavior, and the decrease or cessation of a specific
behavior. These behavior changes are categorized into the key processes of generalization and discrimination.

According to Hineline (1992), “to discriminate is to behave differently in different situations and to generalize is to behave similarly in different situations” (p. 1276). During peer assisted learning tasks, behavior changes are often judged in relation to tutors’ observed discriminating and generalizing behaviors. Within physical education, for example, a peer teacher has exhibited discriminating behavior when he/she gives praise to a student who is adopting a behind offensive support position in tag rugby and corrects the offensive support player who is in front of the ball. If this type of discriminating behavior is then provided to a student whom the peer teacher has not previously worked with relating to this content, generalizing teaching behavior is said to have occurred. Behavioral research on peer assisted learning includes assessment of the effect of the tutor’s discriminating and generalizing behaviors (environment) on the tutee’s performance (behavior).

According to Ward and Lee (In Press), if a tutee’s differential feedback (e.g., praising correct performance, but not incorrect performance) alters subsequent tutee performance then the peer tutor becomes part of the instructional contingency because the tutor’s behavior functions to change or maintain the behavior of the tutee. Within behavioral learning theory, the differential behavior of the peer teacher has become a contrived contingency or consequence of the tutee’s behavior. Within the physical education learning environment, there exists other natural contingencies that may shape subsequent peer behavior. Examples of these include negative outcomes such as scoring a
try in tag rugby after utilizing a sidestep maneuver or punitive outcomes such as the ball carrier having their tag stolen when failing to run forward quickly into space.

The contrived contingencies within peer assisted learning tasks may be arranged differently. Within co-operative learning tasks the contrived contingencies are arranged in the form of group-oriented contingencies (Litow & Pumory, 1975). Group-oriented contingencies occur when reinforcement for the group is contingent upon a particular behavior or set of behaviors by a member or members of the group.

Group-oriented contingencies have been categorized as dependent, independent and interdependent (Cooper, Heward & Heron, 1987). Within a dependent group-oriented contingency the individual or small group must meet the criterion for all members to receive the reinforcement (e.g., points awarded to a team in a Sport Education unit for good refereeing by a team member). In an independent group-oriented contingency only those members of the group that complete the task receive the reinforcement (e.g. best coach award at end of Sport Education season). In an interdependent group-oriented contingency, group members both individually and as a group must accomplish the task (e.g., points awarded to a group who has all their members warming up).

Within the Sport Education curriculum the structural features of persisting group membership within “teams” supports the utilization of group-oriented contingencies. Siedentop (1998) highlighted his philosophy that the goals of Sport Education are best achieved using a combination of instructional strategies of direct instruction, co-operative group work and peer teaching. The tasks of co-operative group work and peer teaching within Sport Education are often made accountable through interdependent group-oriented contingencies that reinforce whole team involvement in learning tasks.
In addition to the application of behavioral theory of learning to the peer assisted learning context, authors (e.g. De Lisi and Goldbeck, 1999) have rationalized student learning through a mediational perspective and the utilization of a constructivist orientations. One of the constructivist theories utilized is Piaget’s developmental model of learning and is described in the following section.

Developmental Perspectives of Learning

*Piagetian Perspectives on Learning*

Piaget (1985) classified knowledge as physical (knowledge about objects), logical (abstract knowledge) and social-arbitrary (i.e. cultural specific). He delineated a developmental learning model consisting of four stages, sensorimotor, preoperational, concrete operational and formal operational. Piaget (1985) proposed that these stages of learning are progressive and the transition from one stage to another occurs as a function of three processes: assimilation, accommodation and equilibration within and across stages. When students encounter knowledge similar to what they already know it is assimilated. When students encounter events different to what they know they may modify their thinking to accommodate the new knowledge. After accepting the new knowledge the students are said to be in equilibrium.

This process of accommodation produces cognitive conflict, or disequilibrium, and in order to reconcile these two viewpoints the student constructs meaning by rethinking their position. One of the aims of physical education is for students to engage in health-promoting physical activities, for example jump rope. Unfortunately, many male students are reluctant to participate in this physical activity due to their belief that it is a feminine or a stereotypical ‘girls’ activity. To produce disequilibrium and to facilitate
accommodation of the new knowledge that the male students should participate in jump rope the strategy of questioning about famous sportsmen who use jump-rope as a key form of training. Many of the student responses revolve around typical ‘macho’ sportsmen including boxers. This realization creates a cognitive conflict and may be facilitative in creating a new equilibrium of knowledge and a willingness to engage in the activity.

The primary implication for the teacher from a Piagetian perspective is to consider the student’s cognitive development relative to the task (De Lisi, 2002). Within peer assisted learning tasks De Lisi and Goldbeck (1999) suggest that assimilation occurs through repetition or practice. Peer teachers engaging their peers in questioning, explaining, and predicting may foster accommodation. Within the Sport Education curriculum, the group task of deciding on the best defensive strategy to reduce the effectiveness of another team’s offensive strategy may facilitate accommodation of new knowledge. The degree of accommodation of new knowledge seems to be dependent on students’ willingness to engage with questioning new perspectives or confronting stereotypes of behaviors (De Lisi & Goldbeck, 1999).

In their review of research on the use of peers from a Piagetian perspective, De Lisi and Goldbeck (1999) as cited in Ward and Lee (In Press), “noted that while there is evidence that children’s logical and spatial reasoning improve using peer interactions, much less is known about the nature of those interactions relative to instructional tasks” (p.7). The ability of students to effectively assimilate and accommodate new knowledge within peer assisted instructional tasks may be dependent on their knowledge and willingness to engage in self-regulatory learning strategies.
Cognitive Science Perspectives on Learning

Self-Regulated Learning. “Self-regulated learning has been defined as a constructive cognitive process whereby learners set goals for their learning, monitor and regulate their behavior” (Brown, 2002, p.5). Zimmerman and Martinez-Pons (1986) have defined students, who exhibit self-regulated learning qualities, as, “individuals who organize and create advantageous learning environments, display initiative, and demonstrate personal responsibility for their learning” (p.52). Scholars in general education have suggested that students’ use of self-regulated learning strategies plays an important role in their achievement (Pintrich, 1999). Research cited in Brown (2002), “have shown that the use of self-regulated learning strategies enables students to reach their desired academic goals (Pintrich, & DeGroot, 1994; Zimmerman & Martinez-Pons, 1986)” (p.17). The self-regulated learning strategies of self-observation, self-judgment and self-reaction have been to shown to be facilitative of student learning through interpretation of the social cognitive framework (Bandura, 1986). From a theoretical perspective, cognitive theorists (e.g. Tuckman, 2001) have posited that without “strategies” to regulate their learning behavior, students are less able to negotiate the development of proximal competencies (e.g. to dribble a soccer ball in a 1v1 task) and require for more distal, desirable goals (e.g. beating a defender during a game). Within the Sport Education curriculum students are within instructional contexts where contingencies and feedback related to performance are primarily the responsibility of a peer instead of a teacher. Despite the obvious implications of a lack of self- or group regulation strategies on student learning within the peer teaching context, to date, no sport pedagogy research exists that has investigated the effectiveness of student peers in
facilitating “regulation of learning” within curricular programs reliant on peer teaching instructional tasks.

*Information Processing Theory and the Structure of Knowledge.* Educational researchers have long relied on theories and constructs from cognitive psychology to inform our understanding/knowledge of how best to provide instruction to children. Researchers within sport pedagogy (e.g. Griffin & Placek, 2001) and in particular the field of motor learning have relied upon cognitive theories of information processing. Within their review Griffin and Placek (2001) describe that:

> Within the theory lies the assumption that knowledge structures are formed by encoding, or gathering new information; next by chunking or combining forms of new information relating newly acquired information to prior knowledge already stored as representations in long-term memory (p.284).

Within this cognitive theory the domain specificity of knowledge is widely accepted (Alexander & Judy, 1988). They proposed knowledge within any domain be broadly categorized as declarative, procedural and conditional. Declarative knowledge includes knowing about something, for example a rule structure governing the game such as no forward passes in tag rugby. Procedural knowledge involves how to do something for example knowledge of the appropriate technique needed to pass the rugby ball accurately over short distances. Conditional knowledge, a special type of procedural knowledge involves goal-directed procedures that may be used before, during or after a task performance (Alexander & Judy, 1988). Conditional knowledge is used across specific domains and assists in comparing features of present task demands with those encountered before in order to solve problems. For example using the content knowledge
required to effectively execute a 2v1 offensive overload situation to solve the problem of a 3v2 scenario.

Research indicates that knowledge acquisition moves from declarative to procedural forms (Griffin & Placek, 2001). As learners practice, they acquire more procedural or “if-then” knowledge, which allows them to solve problems in that particular domain more easily. Conditional knowledge appears to interact with domain-specific declarative and procedural content knowledge in important ways to influence learning. However, little empirical research exists that has examined this claim. Alexander and Judy (1988) as cited in Griffin and Placek (2001), “have suggested that, those students who monitor and regulate their cognitive processing appropriately during task performance do better than those who do not engage in strategic processing” (p.285). Despite the relevance of this hypothesis for the investigation of student learning within peer assisted learning tasks no sport pedagogy research currently exists that has utilized this theory to understand the effect of peer based teaching on knowledge structures. Socio-Cultural Perspectives of Learning

The socio-cultural model of learning provides an alternate perspective to understanding the place and potential of student-centered approaches to teaching, such as peer teaching and co-operative learning. Central to this viewpoint is that learning is an active process that is controlled by the learner rather than the teacher and is a result of engagement with tasks within a group or community of learners (Macdonald, 2004). A key principle within this constructivist perspective is that knowledge is developed in and by societies and thus learning is essentially social in nature.
Macdonald (2004) has suggested that much of the work in socially-shared cognition is based upon the Russian psychologist Lev Vygotsky’s (1896-1934) interest in complex human thought, communication and language, together with more recent input from anthropology and cultural studies (Renshaw, 2002). Within Vygotsky’s social constructivist perspective, learning is the transformation of basic, biologically determined processes into higher psychological functions through socialization and education. He viewed human development as a, “socio-genetic process whereby children gain mastery over cultural tools and signs in the course of interacting with others in their environments” (Hodge & Tudge, 1999, p.39). McInerney and McInerney (2002) suggest that the discrete tools in this process are pens, paper, soccer balls, etc. that provide the means which the individual acts upon the world and thereby facilitates knowledge. These tools are recruited within particular social structures (e.g. peers, family or sports teams) and in conjunction with ‘language’ systems (e.g. skill movement patterns or strategic plays). From this perspective, students interact with teachers, peers and parents to mediate learning and, where possible, self-manage their learning (Macdonald, 2004). This description recognizes that development is based on both biological maturation and cultural mediation.

Vygotsky (1978) proposed that the learning activities a student confronts within these social structures should occur at the edge of what he called the “Zone of Proximal Development” or ZPD. The ZPD “is the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult
guidance or in collaboration with more capable peers” (Vygotsky, 1978) as cited in Ward and Lee (In Press, p.7).

The concept of Vygotsky’s ZPD has been utilized as a pedagogical tool in guiding instruction and the determination of a developmental curriculum. Several contemporary social constructivist theorists (e.g. Macdonald, 2004; Gillen, 2000) have suggested that the peer-assisted pedagogical strategy of cooperative learning, initially developed by Johnson and Johnson (1975), is similar to Vygotsky’s theory of learning. This interpretation has been taken to mean that, in the context of social engagement of learning, peers could contribute to individual student learning (e.g. Gillen, 2000). However, Ward and Lee (In Press) note, “Vygotsky (1978) himself cautioned about the limitations of using peers as instructors and their potential inability to provide effective communication and level of relevant knowledge. His focus was much more on adult-child interactions rather than knowledgeable peers” (p.12)

The caution regarding the efficacy of utilizing same-age tutoring in developing student knowledge has been supported by a recent review of Vygotskian research (Hogan & Tudge, 1999) focusing on peer learning in educational settings. This report noted that, although there are few studies conducted in this area, there is initial evidence to support the effectiveness of adult-child dyadic interactions in improving cognitive skills. The authors note, however, that results are often mixed for peer interactions. Hogan and Tudge (1999) cite problems where the more competent partner often failed to understand their role, or at times provided incorrect or less advanced reasoning and solutions to problems that then confused other students.
In response to this critique, several contemporary researchers (e.g., King, 2002) have suggested pedagogical strategies to overcome potential lack of peer knowledge or “communication inadequacies”. King (2002) emphasized the importance of the teacher in structuring peer interaction and in explicitly describing the peer’s to facilitate student interactions. In an instructional strategy called Reciprocal Peer Questions (King, 2002) students are given scripted but open-ended questions that they can ask to facilitate interaction among students in a group in understanding a problem or a task that is presented to them.

*Sport Education and Communities of Practice*

Siedentop (1995), in a retrospective on the Sport Education curriculum, suggested that, “a void currently exists in how to identify, teach, and provide practice for the leadership skills necessary for successful peer coaching within the model” (p.22). Despite this plea and the reliance on peer teaching instructional tasks the issue of developing more effective peer teaching practices within Sport Education has received minimal attention from researchers. The effectiveness of utilizing scripted peer-assisted tasks as a strategy for facilitating a more adult-child dyadic interaction within the peer-assisted learning tasks, where students are more similar than different in terms of their cognitive ability, seems to have potential for development but, to date, remains largely unexplored.

Vygotsky (1978) emphasized the importance of psychological tools in providing the means through which an individual converts social interactions into higher order processes. Neo-Vygotskian theorists (e.g. Lave, 1988) have argued that the cultural mediation is itself not discrete (e.g. kicking a football), but it is embedded in the socio-cultural activities in which the students are engaged (e.g. kicking a football around a
goalkeeper to score). Lave’s (1988) assertion was developed through anthropological studies of apprenticeship in a range of societies and occupational contexts and was subsequently termed, “situated learning theory” (p.98).

Situated learning (Lave & Wegner, 1991) is aligned with Vygotskian principles in its focus on learning as a social practice in social settings where there is an interaction between an individual learner and others. The key concepts within Lave and Wegner’s theory of situated learning are the notions of legitimate peripheral participation in communities of practice. According to Kirk and Macdonald (1998), “Although the phrase community of practice is not clearly defined by Lave and Wegner it is pivotal to their theory of learning. The notion of a community of practice refers to any collectivity or group who together contribute to shared or public practices in particular spheres of life” (p.380). One example of a community of practice could be a youth soccer team. Lave and Wegner claim that the activities of a community of practice provide learners with a framework for making sense of this specific sphere of life (Kirk & Kinchin, 2003). In other words, the social and cultural contexts in which a community of practice exists and to which its activities contribute have a significant influence on what is learned and how learning takes place. According to Lave and Wegner (1991), the ways in which a community of practice is structured in terms of its social relationships, “define possibilities for learning” (p.98). A key part of this notion of community of practice is, “a person’s identity in relation to other members of a community, and the emotional investments individuals make in relation to their sense of who they are and where they fit as a member of a group” (Kirk & Kinchin, 2003, p.223).
Lave and Wegner (1991) went on to delineate that within the community of practice, learning is legitimate in the sense that the participants’ participation mattered to the community’s successful performance of its work. For example, within a tag rugby team if a student perceives their performance within the game has a significant effect on the performance of the team as a whole their participation is legitimate. Learning is interpreted as *peripheral* if the students’ participation within the community is not yet complete in terms of contribution to the collective but is in a learning trajectory which is directed towards full participation (e.g. a student who has not yet mastered the intricacies of a switch move in tag rugby, but is developing competence towards that goal). Kirk and Macdonald (1998) suggest *involved participation* when there is a curriculum to be engaged and the tasks to be completed and knowledge to be acquired are through interaction with others.

Kirk and Macdonald (1998) have proposed that the Sport Education curriculum (Siedentop, 1994) can be better understood and further developed as inquiry-based pedagogies through the lens of situated learning theory. They contend that the content and organization of Sport Education closely resembles the general practice of sport in community settings. By offering young people opportunities to engage in the community of sport in a variety of roles such as player, trainer, coach the curriculum provides legitimate peripheral participation. “By providing these opportunities for legitimate or authentic participation, by adopting the format of seasons in line with community-based sport, and by recasting physical education lessons as matches and training sessions, physical education reproduces aspects of the contemporary community of practice as it exists outside school” (Kirk & Macdonald, 1998, p.383).
Although many of the facets of situated learning and legitimate peripheral participation seem to be accommodated within Kirk and MacDonald’s (1998) theorizing on the structure of the Sport Education curriculum a note of caution must also be applied. Lave and Wegner’s (1991) research on situated learning within a community of practice was based predominantly on anthropological observations of apprentice behaviors within a “trainee” model of organization. Within this environment the participant modeled behaviors based on the assumption of peripheral participation, in other words, on a trajectory to assimilate the behaviors of the “trainer”. Within the peer teaching context of Sport Education this peripheral participation may not exist as the “trainee” is not necessarily expected to eventually assume full participation, and assume the role of coach. The “trainee” is instead, expected to assume the role of team participant. A greater clarification of this interpretation of situated learning theory as it applies to peer teaching contexts seems to be warranted within contemporary theorizations.

Kirk and Macdonald (1998) propose the genesis of Sport Education and Siedentop’s search for more “contextualized learning” was, in fact, born out of a frustration that school physical education in its current form was unable to reproduce communities of practice that provided meaning and legitimacy among both the students and teaching audiences evaluating the product of curricular programs. In other words, “school physical education programs were failing to prepare young people for an active lifestyle beyond school as they were failing to provide opportunities for legitimate peripheral participation in the communities of practice of sport, exercise, and physical recreation that currently existed in wider society” (Kirk & Macdonald, p.382). Utilizing results of research on Sport Education (e.g. Carlson, 1995), which has provided evidence
that both students and teachers perceived the curriculum to foster authenticity and relevance, Kirk and Macdonald (1998) have suggested that Sport Education allows students opportunity for engagement in legitimate peripheral participation. The high level of student engagement observed during Sport Education instructional tasks suggests the tasks are meaningful (legitimate) to the participants in their goal to obtain full (as opposed to peripheral) participation as a player in the sport-based physical activity. Based on this proxy evidential warrant, Kirk and Kinchin (2003) propose that Sport Education has the potential to not only reproduce but also transform the community of practice that constitutes sport. “It can be reproduced through young people acquiring already existing techniques and knowledge for participating in a range of roles in sport. It can be transformed through young people acquiring the skills of a critical consumer of sport and of many varied products of the sport industry” (Kirk & Macdonald, 1998).

Despite their theorizing on the potential of Sport Education to offer young people an opportunity to participate in ‘situated learning and transform sport culture’ (Kirk & Macdonald, 1998; Kirk & Kinchin, 2003), there remains a dearth of empirical evidence to validate this claim. Although socio-cultural theories, such as situated learning may provide the potential for more sophisticated and powerful means of understanding learning that is historically and socially situated, research that has analyzed student learning within this theoretical framework is virtually non-existent within the sport pedagogy literature. As Rovegno and Kirk (1995) pointed out, ecological and developmental theories of learning may have much to offer such an approach in terms of understanding the interfaces of individual, task, and environmental variables in any given
pedagogic episode, and how learning develops over time. It is to these theories and associated research methodologies that the remainder of this chapter is devoted.

Methodological Perspectives for Investigating the Teacher-Learner process

The Ecological Perspective

The function of the final section of this chapter is to review methodological approaches that have sought to examine the specifics of the teaching-learning process within context to provide a greater understanding of content development within the dynamics of the interaction of teacher and learner. Two contemporary methodological approaches that have been used to examine this phenomenon are the ecological and didactic frameworks. This section reviews the theoretical basis for each approach and subsequently provides a rationale for the potential utility of each framework in examining the peer teaching context within the Sport Education curriculum.

The genesis of the ecological paradigm (Doyle, 1979) emanated from a philosophical position that classroom life is *multidimensional, simultaneous, immediate, unpredictable and public*, such that, “school classes are behavior settings with distinctive properties that affect participants regardless of how the class is organized or what teaching method is used” (Doyle, 1986, p.78). Doyle (1979) proposed that in order to better understand this dynamic teacher-learning environment there needed to be a greater understanding of the functional value or adaptive significance of teacher and student behaviors with reference to how and why students’ work patterns develop as they do. In order to better comprehend this phenomenon Doyle (1979) proposed the ecological model of learning.
Hastie and Siedentop (1999) have suggested that, “an ecological model portrays the behavioral dynamics of classrooms in a way that helps teachers interpret, predict and respond to those dynamics” (p.11). Research in the ecological paradigm focuses on the actual work students do in their classrooms, as such, the model looks to understand student learning by examining the ecology of the classroom as it unfolds.

The model proposes three interrelated systems (managerial, instructional, and social), which serve to shape the classroom ecology. The main focus of investigation is the factors affecting the development of order (management) and academic work (Hastie & Siedentop, 1999). For example, if a student engages in off-task behavior it likely will disrupt academic work and the teacher will likely act to restore order. This dynamic may have the effect of interacting with the other task systems operating in the classroom, including temporarily suspending the instructional focus of the lesson.

Findings from early behavioral studies in physical education (e.g. Alexander, 1983) suggest that the agenda for physical education teachers was the maintenance of order through cooperation rather than compliance. Early research (e.g. Hampel, 1993) proposed that this cooperation was often achieved by reducing the demands in the instructional system.

Doyle (1986) defined the direction of academic work in relation to a program of action. Doyle used this term to describe when content and management come together and the sequence of content and management episodes that evolve during lessons. Having a, “specific direction, momentum and energy, this program of action determines appropriate behaviors for students during their instructional contexts” (Hastie & Siedentop, 1999, p.21). Merritt (1982) suggested that classroom activities contain
‘vectors’ that once entered into, pull events and participants along their course to determine the program of action.

Primary vectors were manifested, “in those agendas that the teacher has for the lesson, and define both action and the order necessary for the action to move forward smoothly” (Hastie & Siedentop, 1999, p.12). The secondary vectors are typically student-initiated and serve to test the robustness of the primary vector with its teacher controlled or content-embedded accountability. According to Doyle (1986) students, “initiate secondary vectors for a variety of purposes including to reduce the demands of the task, to lessen the chances of being held accountable, to seek a more ‘interesting’ task or to engage socially with peers” (p.419). How and when the teachers react to the secondary vectors shapes the strength and direction of the program of action (Doyle, 1986).

Summary of Research Utilizing the Ecological Approach

Students Responses. Doyle (1986) posits that if there is a strong accountability, either intrinsic to the structure of the curriculum or extrinsically developed by teachers, then students will tend to demand that tasks be explicit, in other words the outcome criteria for success is clear. MacIntyre (1985) cited in Kirk and Kinchin (2003) argued that:

All practices generate both intrinsic and extrinsic goods. Intrinsic goods are unique to the practice itself, for example a repertoire of skills and tactics, and cannot be gained in any other way than through wholehearted participation in practice. Extrinsic goods within the gymnasium are often formulated by the teacher and may consist of grades or status within the class (p.230).
Kirk and Kinchin (2002) posit that the structure of the Sport Education curriculum establishes a strong intrinsic accountability by offering opportunities for legitimate peripheral participation within a community of practice. According to Doyle (1986) if this theorization is correct, the structure of the curriculum provides task criteria which are specific and unambiguous, and the students have less ‘room to maneuver’ in their choice of task response and so are less free to modify the task as there is more risk of accountability.

Marks (1988) delineated that modifications could be in the form of off-task, disruptive behavior or students altering their response from the stated task by making it either easier or more difficult. Research investigating student responses to task presentation within physical education (Tousignant & Siedentop, 1983) found that some students would also ‘fake’ engagement in the task. Described as “competent bystanders” (Tousignant & Siedentop, 1983, p. 35) these students would not engage in off-task behavior yet would not actually engage with the instructional task. An exemplar of competent bystander behavior included when students who would look to be lining up to take their turn at the task without ever attempting practicing the skill. When criteria for task accomplishment are explicit certain students may also negotiate the demands of the task by threatening the order within the classroom (Hastie & Siedentop, 1999). Within elementary physical education this influence has been observed to cause a shift in the instructional system such that the demands of the task are reduced (Jones, 1992). The degree to which teacher’s trade-off the instructional task demands seems to depend on the difficulty of the context and also the degree to which the teacher possesses effective teaching skills (O’Sullivan et al., 1989). Siedentop (2002) also theorized that, “teachers
who established specific content-related goals for their physical education programs were less likely to trade-off demands in the instructional task system as they were propagating content-embedded accountability within the curriculum, which served to motivate student effort within the tasks” (p.437)

Teacher Responses. Within the ecological paradigm the notion of accountability is critical in explaining the program of action that evolves as a lesson progresses. Hastie and Siedentop (1999) stated that, “regardless of the nature of the original task, and how explicit the task might be, it is the subsequent supervision and accountability that determines the work students accomplish” (p.19). Within physical education, the accountability system or reward structure that exists is often informal in the form of active monitoring, commentary, sitting out, public recognition and teacher feedback (Lund, 1991). Teacher monitoring behaviors, which resemble active supervision, have been found to be a powerful determinant of students’ task involvement (Hastie & Siedentop, 1999). Hastie (1994) defined active supervision as “occurring when teachers constantly reinforce task demands and the desired standards of performance” (p.16). Despite the evidence, which suggests that active teaching behaviors increased the intensity of student work, research from the ecological perspective would also suggest that the relationship between teacher and student behaviors is also mediated by the context of the lesson and the accountability inherent in the established tasks (Hastie, 2000). Hastie and Siedentop (1999) described this relationship as the, “critical link between curriculum and ecology” (p.20).

Within physical education lessons there is an abundance of social interaction between students. Allen (1986) proposed that this socialization was in fact a primary goal
of student participation in schooling. Siedentop (1988) supported this proposition by suggesting that the student social agenda in physical education could be interpreted as a task system, one that has potential to interact with the managerial and instructional tasks systems in ways that influence the program of action. The student social system in physical education has recently received more attention with research (e.g. Hastie, 2000). The results of a recent study of a high school dance unit (Hastie & Pickwell, 1996) revealed that students invent and test strategies to reduce instructional task engagement to attend to their social agenda. These findings provide initial evidence that the student social agenda may have a direct influence on the program of action within the class.

Hastie and Siedentop (1999) proposed that where a program of action is weak (e.g. the tasks are not developmentally appropriate, do not allow for socialization or have no meaning for students), supervision and accountability become paramount. On the other hand, where the program of action is based on tasks, which are meaningful, challenging and promote socialization much of the accountability is embedded in tasks leading to the unit goals and requiring less teacher supervision. The notion of curricular programs presenting authentic activities with real outcomes designed to motivate students and sustain them in participation has stimulated inquiry. One of the models investigated from an ecological perspective has been the Sport Education curriculum (Hastie, 2000).

Most research in physical education, using the ecological perspective, has studied teachers and students in conditions where the teacher is directing the program of action. The student-centered instructional strategies utilized within the Sport Education curriculum arguably create a significantly different classroom ecology to that of teacher-directed instruction. In a recent study, Hastie (2000) provided one of the few attempts, to
date, to analyze a physical education curriculum where the majority of tasks involve peer assisted learning and the teacher acts more as a facilitator than a supervisor.

The design of Hastie’s (2000) study involved a focus on the task systems, accountability and student engagement operating within a 20-lesson unit of Sport Education. Data were collected on one team of eight students throughout the season using videotaping and interview analysis. In order to investigate the managerial task system operating within the curriculum, lessons were videotaped and tasks that related to the organization and direction of student behavior were classified as managerial. These managerial tasks were recorded by incidence and focus and were examined for student compliance. Accountability was analyzed during managerial and instructional tasks and categorized using Lund’s (1991) classification system that included “public recognition”, “hustles”, “monitoring and feedback”, and “grading”. Accountability episodes were coded according to their focus on either student effort or quality performance (Tousignant & Siedentop, 1983).

Within the study, the instructional task system was discerned using analysis of the frequency and type (refining, extending, applying) of tasks presented (Rink, 1998). To determine student task engagement classifications, opportunity to respond (OTR) data were recorded in terms of rate, percent success and nature of response. Response was also measured in terms of degree of congruency with stated task (i.e. on-task, modified or off-task).

Through the examination of the tasks and accountability operating in the season, Hastie (2000) found that, “a high level of enthusiastic engagement was present which was due to the presence of three vectors, all of which made positive contributions to
sustaining the program of action. These vectors were the teacher’s managerial task
system, the student social system, and the content-embedded accountability inherent in
the curriculum model” (Hastie, 2000, p.355). It appeared that by engaging students in
peer assisted learning tasks, the curriculum strengthened the vector of management by
giving the responsibility to the students. The instructional structure of the curriculum also
seemed to facilitate the student social agenda by incorporating persisting groups within
coop-erative learning tasks. Hastie (2000) argued that because the instructional tasks
were embedded within the longer-term goals of the curriculum (i.e. team performance in
the season) the curriculum tasks had content-embedded accountability which facilitated
student engagement.

The results of Hastie’s (2000) ecological analysis of Sport Education revealed a
description of a promising program of student action that occurred within a curriculum
that revolved around a peer-assisted instructional format. Despite the positive findings
Hastie (2000) stated that the Sport Education model does have some inherent
weaknesses. He suggested that the expertise of students as leaders is problematic as
coaches are unable to provide quality practices for the lower skilled students in their
group. Although this critique seems to be supported by previous research on Sport
Education (e.g. Alexander et al., 1996; Carlson, 1995) the data on which Hastie’s (2000)
conclusion is based seems somewhat incomplete. The data collected on student responses
within the instructional task system, although giving some general indication of type of
modification and percentage success rate, specifics on individual task performance
related to content were lacking. In order to begin to fulfill Hastie’s (2000) plea that,
“ways be found of maximizing instruction such that all students improve in skill” (p.371)
greater attention needs to be paid to the teacher-student interaction within pedagogical episodes of specific content development. Although the research in physical education using the ecological approach has provided greater insight into some of the micro-aspects of the teacher-student dynamics within the task systems it has historically not paid attention to the nature of this interaction within the *content* of the tasks. A European-based system of analysis of the teaching-learning process, named didactics, may have the potential to fill this void. The rest of the chapter is devoted to a description of didactics and didactic research.

**Didactics Research**

Research into didactics has been ongoing within educational research in Europe for the past two decades. The field of research, “Didactics of disciplines” was born from the perceived unsatisfactory way in which contemporary pedagogical research reported on teaching practices. The researchers postulated, “that teaching phenomena cannot be studied or understood without specifically taking the content of the discipline into account” (Amade-Escot, 2000a). Didactics research emerged from a search for a more precise way of analyzing the situation-specific nature of knowledge formation during the interaction of teacher, student and the knowledge taught during the teaching-learning process. The word “didactics” was chosen in the early 1970’s by Brousseau to reflect the shift away from contemporary paradigms of research in education. Brousseau (1979) supported the idea that didactic research concerns itself with the functioning of the “didactic system” defined as the irreducible three-way relationship linking teacher, students and knowledge taught. According to Brousseau (1997),“one of the fundamental hypotheses of Didactics consists of claiming that only the global study of situations
presiding over the manifestation of knowledge allows us to choose and connect knowledge from a different origin” (p.24). In other words, it is only through the study of the micro ‘situations’ of the specific development of content and its function in the teaching-learning process can we make assertions about teaching behaviors and the influence these behaviors have on student learning. The didactic framework is thus based on a triadic system where the analysis of content development is at the forefront of the analysis of the relationship between teacher and learner behaviors. Within this system it is the piece of knowledge taught (content) which is the determinant feature used to understand the dynamics of the whole teaching-learning process (Amade-Escot, 2000a).

Within didactics research, content is viewed as context-specific and contingency staged (Amade-Escot, 2000a). In other words, the knowledge learned by students is a function of the specific dynamics of the teaching episode including the nature of the task, the student’s response to the task and the teacher behavior in the task. Content knowledge within physical education can be connected with aspects of motor, cognitive, social and affective outcomes expected in relation to specified learning objectives. Within didactics research the focus is on the transformation of the knowledge to be taught to the knowledge actually learned, and their effects on subsequent teacher practice.

Studies utilizing the didactic framework have used these findings to suggest strategies for the improvement of teaching. Amade-Escot (2000a) has proposed that this research can occur at the macro, meso or micro level. At the macro level didactics research is concerned with examining the formation of curricular programs and the transformations that knowledge and social practices undergo when sport pedagogy research is transformed into standards and curricular designs. For example, macro level
didactic research is concerned with the development of national curricular programs including learning goals, objectives and activities. At the meso level, researchers study the way teachers adapt and transform knowledge of curricula to make it accessible to students within the physical education school level context. An example of meso level didactics research would be an examination of the adaptation of a national curricular program to the design of a school-wide physical education program and the associated context-driven alterations. At the micro level, studies in didactics are concerned with implementation in the classroom. At this level the object of didactics research is to describe and explain the way content is embedded in instructional tasks and brought into play during the dynamic teacher-student interaction. This study will utilize a micro level didactic focus to analyze the content knowledge development of a group of students participating in the peer assisted learning tasks of a Sport Education curriculum.

At the classroom level of analysis, Amade-Escot (2000a) has proposed that knowledge is taught to students using three basic models. These models of developing content are known within didactics research as didactic transposition. The first model is similar to the skill-based teaching approach (Rink, 1993) and is centered on reproducing technique. The second model, “presents a set of principles of action and action rules drawn from a more complex level of activity” (Amade-Escot, 2000a, p.91). This model has similarities with the teaching tactics and the Tactical Approach to Teaching Games (Griffin, Osli & Mitchell, 1998). The third model concerns, “students discovering operative action rules according to the context, with the problem set up at the students’ level” (Amade-Escot, 2000a, p.91) and is similar to the guided discovery model of teaching (Mosston and Ashworth, 1986).
Amade-Escot (2000a) has suggested that during these models of transposition negotiation occurs between students and the teacher and there are changes in the observed teaching content and knowledge as they manifest themselves within situations and activities. Within didactics research this process of (often implicit) negotiation is defined as “stretching of the didactic contract” and the observed changes from “intended teaching content” to the “content really taught” is described as a didactic transformation of content (Amade-Escot, 2000b, p.1).

The concept of the didactic contract is related to the ternary nature of the didactic system explained previously. Brousseau (1997) stressed that, “the three facets of the system (task, teacher activity, student activity) are bound by an implicit contract that concerns reciprocal expectations with regard to the knowledge taught” (p.45). In other words, when a teacher provides instructions and brings a piece of knowledge into play within the classroom there occurs negotiations between the teacher and student who will have the responsibility for managing that task or activity and what behaviors will occur within the task. According to Brousseau (1997) this system of reciprocal negotiation of the content to be learnt resembles a “contract” (p.48) and is dynamic in its evolution. The theoretical concept in didactics is not to evaluate the contract as good, bad, true or false but the description of the mechanisms through which the teacher and students decipher their respective expectations (Amade-Escot, 2000b).

At first glance these concepts of transformation and didactic contract seem to have theoretical connections with the concepts of task modification and accountability as defined within the ecological model (Siedentop, 1988). For example, researchers from both perspectives are concerned with the implementation of academic goals in the
classroom and they both study the continual, inevitable changes observed during the teaching-learning process in classroom life. The didactic process of negotiation of content learned has similarities with Doyle’s (1986) notion of the teacher’s “stated task” and the “actual” task engaged by students. The primary distinction between the two perspectives is that didactical analysis focuses on the instructional task system and answering the question, “How do students who participate consistently in the academic work modify the stated task?” (Amade-Escot, 2000b, p.2).

Amade-Escot (2000b) suggests there is evidence that tasks are continuously modified by students during academic work (i.e. in the instructional task system), even when students’ involvement in the managerial or student social system is congruent with the demands of the task. Didactics research focuses on this transformation within the instructional task system, such that the didactic contract is concerned with the content taught and does not confound content taught with what is involved in class management. To be more precise, the didactic contract is primarily the part of the class that specifically concerns the content knowledge embedded in the task. Within the ecological model Hastie and Siedentop (1999) refer to this concept as “content-embedded accountability” or the “accountability intrinsic to the manner in which the activities develop and the goals are achieved” (p.16). Contemporary ecological researchers in physical education (e.g. Hastie & Siedentop, 1999) have made the case that curricular programs (e.g. Sport Education) that have particular social and managerial structural features develop an inherent content-embedded accountability that is sustained across tasks. Didactics researchers argue, however, that the content-embedded accountability within tasks is dynamic and that task modifications occur even when the managerial and social system
are functioning well (Amade-Escot, 2000a). This assertion proposes that content-embedded accountability cannot be described only at the curricular level, rather as a result of the dynamic evolution of the didactic contract, it is in fact better described in at the level of the task.

*Didactics Research in Physical Education*

The didactics of physical education research is organized around two main orientations: the design of new content tasks in physical education and a better understanding of how the “didactic system of physical education works” (Amade-Escot, 2000a, p.93). The first orientation seeks to develop new approaches and design of tasks with the aim of transforming teaching practices and developing more effective methods of teaching content or didactic transposition. The second orientation focuses on understanding how the didactic system operates. Research questions within this orientation, “seek to grasp the modes of selection, elaboration and treatment of content, the difficulties of transmission, the conditions in which the students appropriate content and the constraints operating within this process” (Amade-Escot, 2000a, p.90). For example, didactic research on the Sport Education model within the second orientation may focus on what tasks are designed for the peer-assisted learning context, how these tasks are organized and communicated by the student task leaders, what modifications are made to the task by the participating peers and under what constraints do these modifications tend to occur.

The data collection methodology utilized within the second orientation (see chapter 3) is guided by several epistemological assumptions concerning the nature of knowledge. Didactics research assumes that content knowledge taught and learned is
embedded in the instructional tasks of the lesson and is developed within an interactive process between teacher and students within these tasks. Therefore, the generation of knowledge is assumed to be a co-constructed phenomenon inside situated interactions. The methodology adopted for researching this interactive pedagogical process has strong connection with anthropology, not only because of its ethnographic methods, but also the ontological assumption that knowledge acquisition is always embedded in institutions and in social relationships of those involved in the process.

A recent review of sport pedagogy research utilizing a didactical approach (Amade-Escot, 2000a) revealed four major themes. These included research regarding teachers’ knowledge of the content, teachers’ didactics conceptions, student perceptions of content and didactic interactions in class. This study falls into the latter of these categories.

As stated previously didactic research is the study of the content within the didactic transposition (Amade-Escot, 2000a). In examining the genesis of teachers’ knowledge of the content taught, researchers (Pelayo & Terret, 1994; Terrise, 1994, 1996) have highlighted large variability in teacher’s content knowledge of activities in physical education. Other studies have shed light on the didactic transposition at the implementation level. Results revealed that the implementation of content sequence in physical education seems to favor instructional strategies emphasizing technique rather than more complex models centered on operations to be performed (Grehaigne & Godbout, 1995) or problems to be solved (Amade-Escot, 1989). This trend seems more marked in less experience teachers (Rovegno, 1995) whereas diversified modes of transposition may be used side-by side by experienced teachers (Genet-Volet &
Desrosiers, 1995). The study of the didactic conceptions of beginner and experienced teachers has also yielded some interesting findings regarding teachers’ didactical conceptions. Transforming the didactic conceptions of teachers is not easy (Amade-Escot, 1991), however, pre-service programs can influence teachers’ perceptions through reflective practice (Amade-Escot, 1999). The results of didactical research on teacher conceptions of content and content implementation reflect findings within North American pedagogical content knowledge (PCK) research (e.g. Rovegno, 1992, 1993, 1998). The elaboration of teaching processes is complex and is reliant on teacher subject matter knowledge and the context of the class.

The analysis of didactic interactions in actual classes is the oldest sector of didactic research in physical education (Amade-Escot, 2000a). This research has produced a descriptive knowledge base on common didactic practice in schools. Results have shown that the majority of content is transmitted in the form of instructions for execution during students’ motor performance. The teacher’s implementation of this content is mainly aimed at reducing the difference between the student’s performance and the standardized model taken as a reference (Amade-Escot, 1993). In other words, the type of tasks are mostly refining in nature (Rink, 1998). Didactical research findings within this orientation has also revealed similarities with the findings of research on the multi-activity curriculum (Siedentop, Doutis, Tsangaridou, Ward & Rauschenbach, 1994) which has shown teachers often simplify content to surface level features of motor techniques, juxtaposing technical practices with game-play situations and limiting teaching interventions due to misconceptions of subject matter knowledge. Other findings produced by research in the didactic program showed when difficulties arise during a
lesson, teachers reduce requirements of the tasks so as to reduce the student foci to a few surface features.

Didactics research has provided evidence there are critical moments in the teaching process where students change the initial conditions of the task. In this case the teacher may intervene too early to modify the task before the students have had time to adapt to the new task (Amade-Escot & Léziart, 1996) or the students move onto a new task without developing any consistency in previous tasks. These incidents are referred to as critical didactical incidents, or CDIs. From the perspective of didactics research, these are negotiations of the didactic contract, because they emerge in action and serve to significantly change the content from that intended to that actually learnt. The regularity of occurrence of these incidents with both beginner and experienced teachers indicates CDIs are constraints that shape the teacher process by altering the content-embedded accountability within the task (Amade-Escot, 2000a). Amade-Escot and Marsenach (1995) hypothesized that it is because of these constraints that a subtle process of transformation and elaboration of content emerges during action that is dependent on the situated-teaching context.

Despite the potential utility of the findings of the didactics research program for the development of both pre-service and in-service teacher knowledge, the didactic studies are limited to an analysis of specific type of teacher-student interaction. Didactics research in physical education, to date, has tended to focus on teacher-student interactions where the teacher has sole responsible for content transposition and development. Within the pedagogical strategies associated with peer-assisted learning although the teacher dictates, to a large extent, the content to be transposed, the elaboration and transformation
of content within tasks is dependent on student-student interaction. Within this pedagogical strategy an ‘auxiliary didactic system’ exists which is embedded within the regular system. The auxiliary system includes the ternary system of student task leader, peer participants and the content of the task and elicits a secondary phase of didactic transposition of the teacher’s intended content. Despite the lack of attention paid to the analysis of the auxiliary system that operates within peer assisted learning tasks, the didactics protocol may have the potential to provide a greater insight into the nature of content knowledge development that occurs within the situated teaching context of this instructional dynamic.
CHAPTER 3

METHODOLOGY

The purpose of this study was to examine the development of tag rugby “content knowledge” and “performance” of a team of 6 students participating in a 15-lesson unit of Sport Education. Specifically, the study was designed to describe and analyze how the students engaged with the content of tag rugby within the peer assisted learning tasks associated with the Sport Education curriculum, and how this interaction impacted the evolution of the students’ content knowledge and performance of tag rugby. Student content knowledge development was analyzed using a qualitative critical didactical incident (CDI) research methodology (Amade-Escot, 2000a). This chapter outlines the study design, theoretical framework, setting, participants and procedures used in the study. An overview of the methodologies for data collection, treatment and analysis are also provided.

Study Design

This study was exploratory in nature (Marshall & Rossman, 1999) as the goal of this research was to better capture and understand the patterns of participant interaction and the evolution of content knowledge that occurs during the peer-assisted instructional tasks associated with a student-centered curriculum model, such as Sport Education. A qualitative paradigm was used to investigate this phenomenon, identify important
categories of student understanding of content and show relationships between participant behaviors and the meaning those behaviors have students (Marshall & Rossman, 1999). One type of qualitative research is to understand how individuals in a social setting construct the world around them (Glesne & Peshkin, 1992). Within the didactical framework lies the epistemological assumption that, “classroom interactions and the evolution of content are formed through symbolic and social interaction, which involve negotiation of meanings” (Amade-Escot, In Press, p.16). This assumption is aligned with Erickson’s (1986) definition of the interpretivist paradigm, which posits that “reality is socially constructed and ever-changing and interpretive research focuses upon the immediate and local meaning of actors, as defined by the actors’ point of view” (p.119). Rudestam and Newton (1992) also suggest that a qualitative researcher seeks to understand the complexity of a phenomenon, beginning with specific observations and moving toward the development of general patterns as drawn from the cases under study. These general principles of qualitative research under gird the data collection and analysis process of the didactic methodology that was utilized. The basic tenets of this process include that participant relations go through an exploratory phase and that the researcher “negotiates consent” (Denzin & Lincoln, 2000, p.633) by attempting to build and share mutual trust with participants, given the relatively short duration of contact time involved in the study. Although participant behavior during tasks was observed and categorized by the researcher using a specific system of task behavior analysis from a design perspective, the study was situated within a “quasi” (Amade-Escot, In Press, p.15) ethnographic framework as the participants contributed to the interpretation of the observed behavior by adopting the roles of both participant and observer. In this way the
students acted as “informants” during a collaborative data collection and interpretation process.

Case Study

A case study of a team of six middle school students involved in a unit of Sport Education was used to examine student interaction and content knowledge development exhibited during the peer-assisted learning tasks of the curriculum. “Qualitative case studies can be characterized as being particularistic, descriptive and heuristic” (Merriam, 1998, p.29). A case study approach was deemed useful in this study because it focuses on a particular phenomenon and small group of people: a persisting team of six students involved in numerous peer-assisted learning tasks. The intent was to provide a rich and thick description of the participant behaviors as they interacted with the content of tag rugby in the peer teaching tasks associated with the curriculum. The purpose was to identify participant understandings and behaviors that significantly influenced peer content knowledge and performance development by discerning critical patterns or interactions that contribute to this variable over time. This case study approach is heuristic as the goal of the study was to shed light on the phenomenon of peer assisted learning tasks, which form the basis of instruction within the Sport Education curriculum.

Theoretical Framework

The didactic framework is a program of research which focuses on the features of teaching that are specific to the knowledge taught and learned in schools (Amade-Escot, 2000a). Its purpose is to capture and understand the complexity of the teaching-learning process through reporting on the didactic system, defined as the three-way relationship linking teacher, students and knowledge taught. Within peer assisted learning tasks when
the teacher is not the primary leader in the transposition of content an “auxiliary” didactic system exists. This auxiliary didactic system is defined as the irreducible three-way relationship linking student task leader, students and the content knowledge intended and taught (Amade-Escot, In Press). Within the didactic program, though a triadic relationship exists, there is an assumption that the content to be learnt and taught is the decisive element within the functioning of the system and so lies at the heart of teachers’ (or student leaders’) and students’ interactions. The focus of didactic research is thus to study the dynamics and the evolution of learning of content embedded in instructional tasks in the classroom or gymnasium. This phenomenon is captured through a qualitative description of the dynamics of the didactic contract and its significant breaches within Critical Didactical Incidents (CDI’s) (Amade-Escot, 2000a, 2000b; Schubauer-Leoni & Grossen, 1993). The focus of this study was to utilize a CDI methodology, to provide a didactical analysis of the evolution of content knowledge exhibited by six middle school students participating in the peer-assisted learning tasks associated with a Sport Education unit of games-based physical education.

Setting

The study took place within a public middle school in the Gerome School District (pseudonyms are used throughout the study). Gerome School District has five schools and a total of 3,000 students enrolled from predominantly middle to high-income households. The representation of ethnic-minority students within the district is 15 %, which is reflective of the community in which the school district is located.

The site for this study was Bush Middle School (BMS). Approximately 330 students were enrolled in grades 6-8. Eighty five percent of the students were of non-
latino Caucasian descent and this is representative of the school district in which the school was located. All students at the school participate in co-educational physical education lessons within the school’s Health and Wellness curricular program. Throughout grades 6-8, the Health and Wellness program operated within a biweekly schedule with students receiving five, 45-minute lessons every two-week cycle. Within the program approximately fifty percent of curriculum time was devoted to physical education with the remainder devoted to health education. The Health and Wellness curriculum schedule operated under a block schedule such that students rotated on receiving units of physical education and health education. Curriculum unit length varied within the program, however, each unit had an approximate three to four week (nine to twelve lessons) duration.

Participants

Students. Participants in the study were an intact class of 27, eighth grade students (12 male and 15 female) with a mean age of 13.2yrs ($SD = 0.48$). The ethnicity of the class consisted of 25 students of non-latino Caucasian and 2 students of Latino or Asian descent. A team of six students within the intact class was the focus of this case study. At the end of lesson 1 of the Sport Education unit all students in the class were divided into five teams by a volunteer student “sports board” selection panel. Members of the panel rated students in the class as “good at sport”, “OK at sport”, and “beginner at sport”. It was explained to the student panel that their rating of “good at sport” should be based on their perception of their peer’s ability at playing team sports such as soccer and basketball.
During lunch recess the teacher and student selection panel placed students within teams of an equal number of higher skilled and lower skilled students to each team, but also with an equal distribution by gender. Students whom the student selection panel suggested would not work together effectively were deliberately placed on separate teams. Prior to team selection, the participating teacher acted as a reliability check for student evaluations of students’ skill levels with the teacher having the final decision on student ratings and groupings. The target team of six students for the study was determined *a priori* based on their regular attendance history to Health and Wellness classes. This parameter was utilized as consistent student attendance and participation was critical to a description of the evolution of student content development as the unit progressed. None of the students in the class had previously been taught tag rugby within physical education lessons and none had experience of a “Sport Education” curriculum unit.

_Students_. The team selected to be the focus of this study comprised of two male (Josh and Todd) and four female students (Carla, Sally, Carrie and Sarah). All of the team participants had a previous attendance record to physical education classes of greater than 85 percent. Josh was a member of the sports board and was selected by his teammates to be the team coach. Although Josh did not have a history of representing the school at sport he was ranked by his peers as being “good at sport”. Carla represented the school at Cheerleading and was also ranked as being “good at sport”. Todd was the second male student in the group and was evaluated by the sports board as being good at sport as he had a history of competing in cross-country and martial arts. Both Sally and Carrie were evaluated as being “OK at sport” as neither participated regularly in extra-curricular sport
activities but generally were “good in PE lessons” (Josh, lesson 2 observation, team selection). Sarah was rated as a “beginner at sport” and was the last student selected by Josh to be in the team. Sarah was not involved in sport at any level and was perceived by members of the sports board as, “not liking PE” (Josh, lesson 2 observation, team selection task).

Teacher. Claire (pseudonym), the female teacher in the study had six years of experience teaching physical education in middle schools and holds a teaching certificate for health and physical education. Prior to arriving at Bush Middle School, Claire had previously worked at a private school for four years and an urban middle school for two years. This was her first year at Bush Middle School. Her responsibilities at BMS included teaching seventh and eighth grade health and wellness and coaching the middle school cross-country team.

Locke (1992) has argued that for substantive change to occur in physical education programs, teachers need continual support and assistance with their programs. The researcher had worked with Claire for one year prior to the study supporting her implementation of curricular programs including Sport Education (Siedentop, 1994) and the Tactical Approach to Teaching Games (Griffin, Oslin & Mitchell, 1998) as part of a Physical Education for Progress (PEP) grant at her previous school district. During the previous year, Claire had served as a co-operating teacher during a field-based methods class that was based on a tag rugby Sport Education unit. Claire was selected for the study as she had recent experience attempting curricular change and specific experience of utilizing the Sport Education curriculum model within a middle school tag rugby physical education unit.
Entraée

Claire and her principal at Bush Middle School were contacted in person during the Fall of 2003. The purposes of the study and the data collection methodology used in the proposed study were delineated, in both verbal and written form, and permission was sought to solicit students from the target class to participate in the study. The principal and school district approved completion of the study at the school site and permission was sought and obtained from the Human Subjects Review committee at The Ohio State University. Each student interested in participating in the study was provided with both a student and parent consent form (Appendix A) and by signing the forms parents granted permission for their child to be involved in all data collection protocols. Confidentiality was assured for participants with regard to data collected during the study through the provision of pseudonyms.

Procedures

The students participated in a Sport Education unit of tag rugby. The unit had a 15-lesson duration, with classes held from 1:30 to 2:15pm three times per week. Siedentop (1994) has argued that the extended length of the Sport Education unit (usually 20 lessons) is necessary to accomplish the goals of the curriculum. Siedentop (1994) stated, “that learning to move confidently and knowledgably as a defensive or offensive player on a team is a more difficult learning task than mastering a beginning skill in an isolated setting” (p.22). Evidence has been provided that the extended unit length can improve team game play performance (Hastie, 1998). A twenty-lesson unit was unable to be delivered in the present study due to school vacation constraints.
The full forty-five minutes of each of the sixteen lessons was available for activity, as roll was not formally taken, and students were not be required to change clothes. The unit followed a recognized format for Sport Education (Hastie, 2000) with the early stages of the season being allocated to the selection of teams and team protocols. The majority of the latter lessons included peer teaching learning tasks with scrimmage and formal game play situations (See figure 3.1.)

Sport Education Unit

Appendix B provides details of each of the lesson plans and specific tasks completed by the participants during the unit. Following introduction to the concept and curricular goals of Sport Education and allocation to assigned teams, the first lesson of the unit was game-based with the teacher instructing students on the basic rules of the game of tag rugby. At the end of lesson 1, teams were selected and assigned teams posted at the beginning of lesson 2. During lesson 2 participants engaged in non-rugby related co-operative games within their assigned teams. During the teacher-directed skill development phase (lessons 3, 4), students received whole class teacher-directed instruction on the generic skills of passing a rugby ball and an appropriate offensive support position. The pre-season phase (lessons 5-11) was designed primarily for students to work in their teams to develop content knowledge and refine performance within peer-assisted instructional tasks. During this phase the teams of students were allocated 25 minutes for team practice and ten minutes for 4v4 scrimmage game play. Within these lessons, student coaches were responsible for organizing and facilitating practice tasks.
<table>
<thead>
<tr>
<th>Lesson</th>
<th>Content</th>
<th>Teacher’s role</th>
<th>Students’ role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>- Introduction&lt;br&gt;- Rules to game&lt;br&gt;- Game play</td>
<td>- Class leader&lt;br&gt;- Present team lists</td>
<td>- Participant&lt;br&gt;- Selection of team roles&lt;br&gt;- Determine team name</td>
</tr>
<tr>
<td>2</td>
<td>- Team allocation&lt;br&gt;- Management routines&lt;br&gt;- Co-operative games</td>
<td>- Class leader&lt;br&gt;- Discuss roles&lt;br&gt;- Discuss fair play and expectations</td>
<td>- Participant&lt;br&gt;-</td>
</tr>
<tr>
<td>3-4</td>
<td>- Teacher-directed skill instruction (passing and receiving, support)</td>
<td>- Class leader&lt;br&gt;- Head coach&lt;br&gt;- Head coach&lt;br&gt;- Facilitator of practice tasks&lt;br&gt;- Referee advisor</td>
<td>- Participant&lt;br&gt;-</td>
</tr>
<tr>
<td>5-11</td>
<td>- Students learn and practice duty roles&lt;br&gt;- Student-led skill and tactic instruction&lt;br&gt;- Preseason scrimmages</td>
<td>- Head coach&lt;br&gt;- Program manager&lt;br&gt;- Head coach&lt;br&gt;- Program manager&lt;br&gt;- Master of ceremonies</td>
<td>- Coaches, players learn duty roles of referee and scorer&lt;br&gt;- Coaches, players and duty team roles&lt;br&gt;- Coaches, players, duty team roles</td>
</tr>
<tr>
<td>12-14</td>
<td>- Formal competition</td>
<td>- Head coach&lt;br&gt;- Program manager</td>
<td>- Coaches, players and duty team roles&lt;br&gt;- Coaches, players and duty team roles</td>
</tr>
<tr>
<td>15</td>
<td>- Championship game&lt;br&gt;- Awards presentations</td>
<td>- Program manager&lt;br&gt;- Master of ceremonies</td>
<td>- Coaches, players, duty team roles&lt;br&gt;- Coaches, players, duty team roles</td>
</tr>
</tbody>
</table>

Figure 3.1. Bush Middle School Tag Rugby Sport Education Unit Plan.

During lunch recess prior to each lesson student coaches were given coaching task cards (see Appendix B for coach task cards) and briefed by the teacher on the organization and content knowledge embedded in the tasks. Assigned students within each team were responsible for refereeing duties during the end of lesson 4v4 scrimmage game. No formal records of pre-season scrimmage game results were taken or posted.
The formal competition phase (lessons 12-15) comprised of a 20-minute peer-assisted learning task period and a 15-minute game. The choice of task and content to be learned by team members during lessons 13-15 was at the discretion of the student coach. The students were briefed that they were to identify either a skill or strategy that the team was struggling to perform and then select an instructional task from the coaching packet that emphasized this content. Formal games were organized around a 4v4 structure within an area measuring 40x30 yards. During the formal season game play students were responsible for refereeing and scoring, with teams earning five points for a win, three for a tie, and one for a loss. In addition, teams could accumulate up to five fair play points per game at the discretion of the team of students on refereeing duty. The final lesson of the unit (lesson 15) was a culminating event involving play-off games based on the amount of points accumulated over the duration of the season. After the final game students were awarded participation certificates based upon effort and positive sporting behavior throughout the unit.

During each phase of the Sport Education unit, the specific responsibilities associated with the roles of coach, referee and scorer were explicitly taught to the students. Students within each team were responsible for the selection of individuals to fulfill each of the specified roles. To create an accountability system for the student-led selection process, contracts of role responsibility (Appendix C) designed by the teacher were signed by students and returned to the teacher at the end of lesson 2 of the unit.

Data Collection Methodology

Didactics research has shown that there is often a misalignment between the intended content to be taught and the actual content learned even when there is no real
dysfunction within either the managerial or student social system. These modifications of the content embedded in tasks appear through subtle and tacit student behavior, which transforms the stated task in some slight details that the teacher or task leader may not even notice (Amade-Escot, 1999). Within the didactic analysis this modification of content is referred to as a “stretching” of the didactic contract and occurs as a result of negotiations between task leader and students that impacts the content taught and learned. According to Amade-Escot (2000b) these negotiations are achieved by: (a) student participants changing the initial conditions of the stated task, (b) students modifying the key variable of the task (i.e. the variable that commands the structure of the instructional task), (c) students orienting teacher supervision towards unrelated or unanticipated content, (d) students using the routines they have prior to attempting new motor skill (Amade-Escot, 2000a). The consequence of these negotiations and subtle changes within the task are a resultant gap or misalignment between the content supposed to be taught and the content actually learned.

From a didactic perspective, modifications or “stretches” in the didactic contract are pertinent and valuable, as the students test their capabilities in the aim of achieving the goal of the task. However, some of these modifications may become more critical to content development than others (Amade-Escot, 2000b). These critical “breaches in the didactic contract” are referred to as critical didactic incidents (CDI’s) and form the basis of the didactic research data collection and analysis methodology.

Critical Didactic Incident (CDI) Methodology

From a broad perspective, the CDI methodology focuses on teachers’ (or task leaders’) activities and their construction of meaning of the teaching-learning situation in
which they are immersed. From a didactic perspective the student leader’s activity cannot be studied, described or understood without taking into account the two other sub-systems. These two sub-systems include the peer participants (e.g. student performance during an instructional task) and the knowledge embedded in the task (e.g. intended content knowledge to be learned to be successful in the task). For this reason, the following section discusses the methodological principles of the didactic observation in which CDI’s take place then outlines the CDI method of data collection and analysis to be incorporated within this study.

Didactic Observation

A Critical Didactic Incident (CDI) concerns an event or a set of activities linked with the pedagogical content taught in which a significant failure in the teaching learning process is observed (Amade-Escot, 2000a). The “critical” nature of the incident is determined based upon observations that the outcome of the task appears problematic during the process for both the task leader and the participating students. In other words, the participating students are finding it difficult to exhibit the intended behavioral response to the task, and the task leader is struggling to provide feedback to facilitate peer student performance aligned with the task goal. The incident is thus critical as the end result of the situation is unpredictable in relation to the intended task outcome.

Within didactic episodes the clues for the emergence of these “critical incidents” are collected through a qualitative methodology (Ryan & Bernard, 2000; Tesh, 1990). These qualitative data sources are collected based on adherence to four strategies for observing didactic phenomena (Amade-Escot, In Press). First, didactic observations focus on the content knowledge actually presented to students and its ongoing evolution during
interactions and negotiations which are considered as multiple attempts to achieve the instructional goals of the task through shared practice. Second, because the particular phenomenon under investigation is the function of the didactic system contextualized data must be collected on all three components of the system, student leader activity, participant student activity and content knowledge embedded in the process (See Figure 3.2.). Thus trustworthiness and validity are based on constant triangulation between these different sources of data. Third, the didactic observation combines interviews with the different participants and observations of their activities in context. The seminal format of the methodology was established by Brousseau (1997) who underlined that, “the interpretation of the interrelated and ongoing process of teaching and learning a specific content knowledge needs to combine two viewpoints: the observer and the participant” (p.24). The observer is defined as the researcher and the participants as the members of the didactic system.

The didactics research methodology provides a dialectic stance between intrinsic data (participant) and extrinsic data (observer), which is used to guide the analyses (Vidich & Lyman, 2000). Constant comparison of the two viewpoints: the one from the participants (i.e. teacher and students) and the one from the researcher, in the form of observations and categorization of didactic interactions, are conducted according to a fourth strategic rule. The interpretation of the data is conducted by the fourth strategy and comparing and contrasting a priori with a posteriori analyses of participant behaviors during the task (Amade-Escot, In Press).
The *a priori* analysis consists of an analysis of the design and intent of the teacher relative to the tasks involved in the upcoming lesson. The purpose of this analysis was to clarify the content embedded in the task and its relation to the didactic intent of the teacher. As an auxiliary didactic system operates within peer assisted learning tasks it was pertinent to not only clarify the intended content of the design of the tasks but also what content the student task leaders understood to be within the intended tasks. This analysis served to highlight or predict the kind of response or strategy expected from the participating students and the potential alternative responses that may appear. The term *a priori* is utilized to emphasize that the analysis is conducted independent of the observation of the task in order to provide a point of reference for subsequent didactic interactions.
The *a posteriori* analysis consists of an interpretation of the events that occur during the lesson situation. Didactic interpretation results from a comparison between the opportunities provided by the design of the task and the coach’s interpretation of the task (*a priori* analysis) and the observed effects of the interaction as achieved by the participants (*a posteriori* analysis) during engagement with the assigned instructional tasks and game play.

Data Collection Procedures

Figure 3.3. illustrates the chronology of the didactic data collection methodology utilized in this study for each lesson observed. Figure 3.4. summarizes the design of the data collection methodology and its contribution to the *a priori* and *a posteriori* didactic interpretation.

The first step of the *a priori* data analysis was to understand the perspective of the teacher regarding the class, her knowledge of the students and the place of the Sport Education unit within the schools’ Health and Wellness curricular program. A *pre-unit* interview (see Figure 3.4.) was conducted on a semi-structured format to primarily collect information on the nature of the class and the teacher’s envisioned goals for the upcoming unit.

The unit of Sport Education utilized within this study was designed by the researcher based upon information obtained from the pre-unit interview with the teacher, the curricular goals of the school Health and Wellness program at Bush Middle School and the expertise of the researcher in developing tag rugby. The tasks within the curriculum were designed to develop student knowledge and performance of invasion game skill and strategy of tag rugby. The goal of applying and refining student
performance of invasion game strategies was a priority initiative within the physical 
education component of the Health and Wellness program at BMS. Although the 
researcher designed the lessons and tasks included in the Sport Education curriculum,
Claire, the co-operating teacher was responsible for teaching the unit to the participating
class of eighth grade students.

Prior to each lesson of the unit, the teacher was briefed by the researcher on the 
organization and intended performance goals of each of the designed instructional tasks.
During the early lessons of the unit (see figure 3.1., lessons 1-4) the primary focus was 
team selection, developing class management routines and learning the basic skills of 
passing and support. Within these lessons the majority of instruction was teacher-directed 
to the whole class. During the main phase of the unit (see figure 3.1., lessons 5-15), the 
teacher adopted the role of facilitator, with the student coach taking responsibility for the 
delivery of content within peer-assisted learning tasks. During lunch recess prior to each 
lesson of this phase of the unit, the teacher briefed the student coaches on the goals, class 
organization and performance objectives embedded within each of the intended 
instructional tasks. Coaching task cards with “coaching points” for content were provided 
to coaches during the teacher brief (Appendix B). Immediately following the pre-lesson 
teacher brief, the target student coach was subject to a pre-lesson interview regarding 
their interpretation of the didactic intent of the tasks within the upcoming lesson. Within 
a didactics research methodology the aim of the pre-lesson semi-structured interview 
with the student coach was twofold: (1) to collect information on their interpretation of 
the learning objectives for the upcoming lesson and (2) to clarify the didactic intention of 
the coach.
Figure 3.3. Didactic Data Collection Design (adapted from Shubauer-Leoni & Leutenegger, 2002)
<table>
<thead>
<tr>
<th>DATA SOURCE</th>
<th>KNOWLEDGE (Content taught)</th>
<th>STUDENT COACH</th>
<th>STUDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Design of the stated task</td>
<td>- Pre-lesson Interview (intrinsic)</td>
<td>- Observation of student behaviors</td>
</tr>
<tr>
<td></td>
<td>- Teacher lesson plans</td>
<td>- Observation of student leader activity during lesson</td>
<td>- Verbal interactions with teacher and other students</td>
</tr>
<tr>
<td></td>
<td>- Teacher brief to student coaches</td>
<td>- Verbal interactions with peers (group, individual)</td>
<td>- Post-lesson stimulated recall interviews (intrinsic)</td>
</tr>
<tr>
<td>CONTRIBUTION TO ANALYSIS</td>
<td>→ <em>A Priori</em> analysis of the stated task</td>
<td>→ Didactic intention and related interactions</td>
<td>→ Learning outcomes and process regarding the content to be learned</td>
</tr>
<tr>
<td></td>
<td>→ Point of reference to compare didactic interaction within tasks</td>
<td>→ Breaches of the didactic contract introduced by the student leader</td>
<td>→ Breaches of the didactic contract introduced by the students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ Meanings assigned to the teaching situation</td>
<td>→ Meaning assigned to the learning situation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ Analysis related to the didactical intention of the teacher/student coach</td>
<td>→ Analysis related to evolution students’ activities during the task</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ Analysis related to the student coach intention and activity during the task</td>
<td></td>
</tr>
</tbody>
</table>

**CONSTANT TRIANGULATION WITHIN EPISODES OR CDI**

**EVOLUTION OF DIDACTIC CONTRACT**

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Figure 3.4. Data Collection Methods and their Contribution to Didactic Interpretation (adapted from Shubauer-Leoni & Leutenegger, 2002)
In other words, which task or instructional activities the coach intended to establish, what content he/she understood within the intended tasks and which learning outcomes he/she expected from the participating students. This interview lasted approximately ten minutes and was conducted in a private setting immediately prior to the upcoming lesson. (Appendix D provides a copy of the a priori questions posed to student coaches prior to each lesson). Data were collected on the coach’s task intention, the transcription of the pre-lesson teacher brief to coaches and the pre-lesson interview with the student coach formed the basis of the a priori analysis.

Lesson/Task Observation

A digital camcorder and cordless microphone worn by the student coach were utilized to couple the verbal interactions of the student coach with the video of the evolving didactic process during the peer assisted teaching episodes. The camcorder captured the actions of all the participants throughout the duration of each lesson of the Sport Education unit. This data source was the main corpus of data for the extrinsic analysis of the didactic interactions. To facilitate initial identification of critical breaches in the didactic contract field notes were taken by the researcher during the lesson. The focus of these field notes were descriptions of student behaviors that occurred when the majority of the students within the target group failed to achieve the performance objective of the peer assisted instructional task.

Participant Interviews

One of the facets of the data collection methodology proposed by Amade-Escot (2000b) is the use of short, in-task interviews with participants. The purpose of these questions is to grasp the meaning the students give to the task, what they value in what
they do and what they consider as expectations of the student task leader. In brief, this includes how they interpret the situation and what knowledge they are acquiring during these tasks. Prior to the start of the Sport Education unit this data collection methodology was attempted with a group of students of similar age engaged within small-sided learning tasks. The results of these trials revealed that the methodology significantly interfered with students’ opportunities to respond within tasks and also disrupted the organization of the task. The quality and depth of data obtained was also judged to be insufficient to warrant the intrusiveness of the methodology. To clarify any mismatch in the negotiation of the participants understanding of the tasks a post-lesson stimulated recall interview was utilized as an alternative data source. The stimulated recall interviews were in a focus group interview format with all five of the peer participants present. They were conducted after every other lesson and included segments of video footage of the students participating in tasks. Appendix E provides examples of the post-lesson stimulated recall interview questions utilized.

**Student Coach Interviews**

At the end of every other lesson the student coach was also interviewed independent of the peer participants to ascertain his perceptions and analysis of peer behavior during the instructional tasks. Each of these coach interviews was in a stimulated recall format with video footage played of critical episodes of peer participant performance within tasks. The interviews were conducted to give the student coach an opportunity to think about what happened in the lesson regarding the content taught and the students’ activities, what they achieved and the student coach’s interpretations of critical moments in the lesson. During both the participant and student coach stimulated
recall interviews the researcher encouraged the students to comment on their interpretations of events in the lesson. A sample of two interviews were observed by the dissertation advisor to ensure appropriate application of protocol. Appendix F provides examples of the questions posed to the student coach during post-lesson stimulated recall interviews. This corpus of information completed the intrinsic (from participants) data required to conduct the didactic analysis.

Data Treatment

All interviews and verbal behavior recorded on videotape within lessons were transcribed verbatim. The observation data (verbal interactions and actions) were chronologically transcribed within a “matrix-display” (Miles & Huberman, 1984, p.37) that allowed the researcher to see the development and the evolution of content taught and learnt (Appendix G provides an exemplar of the production of a data matrix display within a didactic episode). The chronology of events and the timing of the lesson are displayed (see Appendix G, column #1). The transcript of verbal interactions delineated the chronology of verbal interactions of each participant (Appendix G, column #’s 3 and 4). Students’ attempts at the task were clearly described in relation to the responses and strategies anticipated during the a priori analysis (see Appendix G, column #5).

According to Amade-Escot (In Press) qualitative didactical analysis operates on both the conceptual and concrete level simultaneously, therefore categorization of the lesson transcript and interpretation are not disconnected from the data collection phase. The treatment of the data consisted of identifying specific episodes in which the content supposed to be taught and learned was evident. An episode is defined as, “a set of verbal and non-verbal interactions and actions that are related to the content knowledge at stake
in the situations, as defined within the *a priori* analysis*” (Amade-Escot, In Press). Figure 3.5. provides an example of the evolution of the didactic contract through the identification of episodes of interactions between the student leader and participating students within defined content tasks. The assumption with the evolution of the didactic contract is that student negotiations of the content embedded in tasks are happening continuously due to the fact that their understandings of content in the task differs from that of the teacher or student coach. The implication of this assertion is that content development in the gym emerges as a dynamic process in which the participant’s (student coach and peer participants) meanings of content are continually co-constructed.

Within the didactic framework there also exists an assumption that a perfect match between the student coach’s intent and participating students’ perspectives is unrealistic. Mismatches occur more often than not and serve to disrupt the didactic contract and continually change the actual content taught and learned. These mismatches manifest in misalignment between the goals of the stated task and the behaviors of students engaging in the tasks and ultimately what students learn. Amade-Escot (2000a) has suggested that some of these mismatches are more problematic than others with consistent, misaligned responses being significant or “critical” to the development or lack of development of content. These significant “breaches” in the didactic contract are described as Critical Didactic Incidents (CDIs) (Amade-Escot, 2000a) and form the boundaries of specific episodes during the evolution of content development within a specific lesson (see figure 3.5.).

The identification of CDIs within the didactic framework allows for in-depth analysis of the student coach activity within the didactic system. The identification of
critical breaches in the didactic contract (CDI) is obtained through direct observation (extrinsic data source) and compared against the teacher’s a priori lesson intentions.

<table>
<thead>
<tr>
<th>Structure of the lesson (plan)</th>
<th>Structure of the content actually taught (Researcher)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1------------------------</td>
<td>Task 1</td>
</tr>
<tr>
<td>Task 2------------------------</td>
<td>Episode 1</td>
</tr>
<tr>
<td>Task 3------------------------</td>
<td>Breach of DC 1 (CDI)</td>
</tr>
<tr>
<td>End of lesson------------------</td>
<td>Breach of DC 2</td>
</tr>
<tr>
<td></td>
<td>Episode 3</td>
</tr>
<tr>
<td></td>
<td>Breach of DC 3</td>
</tr>
<tr>
<td></td>
<td>Episode 4</td>
</tr>
<tr>
<td></td>
<td>Breach of DC 4</td>
</tr>
<tr>
<td></td>
<td>Episode 5</td>
</tr>
</tbody>
</table>

Figure 3.5. Evolution of Didactic Contract through Critical Didactic Incidents
Identification of Critical Didactic Incidents (CDIs)

Marsenach and Ali (1991) have provided five key observational criteria related to the specific requirements that serve to define a critical didactic incident. These criteria were utilized within this study to identify “critical” episodes of didactic interaction between the student coach, students and the content taught within the lessons via specific instructional tasks.

(1) A CDI was an episode of gymnasium interactions where most of the students on most of the trials (80 percent trial failure rate) failed to achieve the performance outcomes intended of the task. The participants were unable to perform the outcome goal of the task (e.g. successfully scoring a try in a 2v1 offensive overload task) even though they cooperated and consistently attempted the task. (2) The task leader tried by many methods (e.g. feedback, verbal and non-verbal, task refinement) to help the students to learn the content intended within the task. Marsenach and Ali (1991) propose that a CDI does not concern the first attempts at a given task nor is it related to the first few minutes of task implementation. Therefore, a CDI was only deemed to have occurred if the participants had more than 5 trials at the task. (3) The third criteria considered that the outcomes of the CDI may either be successful (the evolution of the situation provided opportunity for students to achieve the goal of the task) or unsuccessful (the evolution of the situation did not allow the students to solve the problem they encountered). Flanagan (1954) summarized this criteria by stipulating that, “an incident is critical if it makes a significant contribution, either positively or negatively to the general aim of the activity” (p.338).
The fourth criteria concerned the reporting of the CDI. The researcher provided specific and detailed descriptions of students’ behavior within trials (see Appendix G, column #5 for exemplars). This study included a summary description of percentage failure rate (e.g. 80% of students failed task in first 8 attempts), a description of student performance process variables (e.g. student carries the ball and attempts a side-step around the defender but loses tag) and student coach activity (see Appendix E, columns #s 3 and 5). (5) A description of the situation in which the CDI occurred (stated task, stage of lesson, didactic intention of task leader) was included along with indicators of the beginning and closure of the CDI episode identified. These indicators were usually in the form of verbal behaviors. Most often the beginning of the CDI was connected with the end of a task leader statement of the task to be done (e.g. Appendix F, column 3, “Your go Sally!”) and the end was related to some teacher decision to change the task. Misbehavior of numerous students was also used as an indicator of the end of the CDI as the lesson had shifted to the managerial task system. When this happened, the didactic episode was determined to be closed even though the situation stayed problematic, as the interactions were no longer related to the content. This point emphasizes that some consequences of a CDI may be student misbehavior as a result of poor accountability. Reliability of CDI Identification

To establish reliability of the pattern of emergence of the didactic contract within lessons (e.g. figure 4.3.) videotape observation data was utilized. Initial agreement on the interpretation of Marsenach and Ali’s (1991) criteria for the identification of a CDI was conducted through joint observation of a single lesson by the primary researcher and a peer knowledgeable in the didactic protocol. The boundaries of specific episodes within a
sample lesson were identified and a pattern of emergence of the didactic contract was
delineated. The sample lesson analysis was then reviewed by a French expert in didactics
to determine reliability of criteria interpretation. Interpretation of CDI criteria was
confirmed by the expert and subsequent lessons were analyzed for the identification of
CDIs by the primary researcher.

CDIs were coded using a trial-by-trial analysis of both participant performance in
relation to the outcome of the task (e.g. getting past the defender to score a try) and
participant performance of the content elements required to successfully perform the task
(e.g. use of evading maneuver). Post-trial teacher and coach feedback statements were
also categorized in relation to specific content elements. The reliability of CDI analysis
was obtained through a peer-debrief of sample episodes. The criteria used to determine
success/failure in the trial-by-trial analysis of CDIs was initially devised by the primary
researcher. The peer was then trained on the coding system utilizing a sample episode.
The peer then conducted the same coding protocol during an independent trial-by-trial
analysis of a different sample identified CDI. Inter-rater reliability for task outcome was
found to be 0.80 for participant success/failure rate at achieving the outcome goal of the
task. Inter-rater reliability for performance of intended content elements was determined
by comparison of the mean percent success of each element across trials. IOA was found
to be 0.85 for the analysis of the participant performance of the specific intended content
elements across trials of the task.

CDI Data Interpretation

To facilitate the initial identification of critical didactic incidents and the
delineation of content development episodes, the researcher’s observation field notes
were utilized. These notes focused on student behaviors that were significantly misaligned with the stated goals of the task and also functioned to discriminate the boundaries of the critical incident episode. The transcribed matrix display (Appendix G) of participant actions and verbal behaviors within these incidents was used to provide a greater description of the chronology of participant behaviors and to begin to compare student coach behaviors with the *a priori* analysis of their didactic intent for the task.

The transcribed interview data were used as a form of triangulation of different data sources (e.g. coach and participant debrief interviews, see Figure 3.4.) and provided information for the interpretation regarding the evolution of the didactic contract within each episode, and from one episode to another episode. As can be seen in figure 3.4. the interview data allowed the researcher to interpret the meanings assigned by participants for their behaviors within the content of the tasks. For student coaches this was an interpretation of their coaching behaviors and for participating students this was an interpretation of the meaning they assigned to the learning tasks and their behaviors within it. The interpretation of the CDIs was based on constant comparison techniques between the extrinsic (observational) and the intrinsic (interview) data sources within the chronology of events during the evolution of the content. From an analysis perspective, the interpretation of CDIs looked to identify some regularities in the form of patterns (Tesh, 1990) where task leaders dealt with breaches in the didactic contract. This search for configurations in the data included a search for commonalities of coach behaviors across episodes and patterns of emergence of learned and problematic content (Amade-Escot, In Press).
CDIs are examples of professional activity that serve to enlighten our understanding of teaching constraints. The main focus of this study was to describe and analyze development of content knowledge within the peer-assisted learning tasks of a Sport Education curriculum unit. The data obtained from the CDIs provided some insight, at the micro level, of student behaviors within peer assisted learning contexts and how content knowledge and performance evolved within the instructional approach. Interpretation of CDIs within the unit allowed for identification of regularities in student coach behaviors that served to create critical incidents related to the content taught and learned. From this analysis a rich description of the dynamics of student interaction within the peer assisted learning tasks was obtained which allowed for interpretation of the efficacy of the instructional approach in developing content knowledge. Didactic interpretation of CDIs highlighted how good classroom management does not necessarily serve to avoid breaches in the didactic contract as often critical incidents were driven by mismatches in shared meaning of the content of tasks.
CHAPTER 4

RESULTS

The purpose of this study was to examine the development of tag rugby content knowledge and performance of a team of 6 students participating in a 15-lesson unit of Sport Education. Specifically, the study was designed to analyze how the students engaged with the content of tag rugby within the peer assisted learning tasks associated with the curriculum, and how this interaction impacted the evolution of the students’ content knowledge and performance of tag rugby. Chapter three outlined the details of the tag rugby Sport Education unit implemented within the intervention and the methodology employed to gather and analyze data. Three primary research questions and two sub-questions directed this study:

1. How did student knowledge and performance of the content of tag rugby evolve during the peer-assisted learning tasks associated with a unit of Sport Education?

   1.1. What (mis)alignment existed between the knowledge intended to be learned by the participants, the knowledge taught by the student coach and the knowledge actually learned by the participants?

2. What tag rugby content knowledge did participants understand and perform as a result of the peer-assisted learning tasks of the Sport Education unit?
2.1. What (mis)alignment existed between the knowledge and performance unit goals intended by the teacher and actual student knowledge and performance during practice and game play situations.

3. Did the participants learn, as a result of the peer-assisted learning tasks, any additional content knowledge not intended by the teacher. What was the relevance of this content knowledge to participant performance?

The data presented in this chapter is sub-divided into three sections relating to the three primary research questions posed. The first section presents data related to research question one and presents a lesson-by-lesson description of the evolution of content knowledge learned by participants within the peer-assisted learning tasks associated with the tag rugby Sport Education unit. The second section provides data related to research question two and a summary of the change in participant content knowledge and performance of tag rugby as a result of the peer-assisted learning tasks in the Sport Education unit. The final section provides data related to any additional content learned by participants, not intended by the teacher.

*Research Question 1. How did student knowledge and performance of the content of tag rugby evolve during the peer-assisted learning tasks associated with a unit of Sport Education?*

1.1. What (mis)alignment existed between the knowledge intended to be learned by the participants, the knowledge taught by the student coach and the knowledge actually learned by the participants?
Content Knowledge Intended to be Learned by Participants

To analyze the content knowledge learned by the team of students within the learning tasks associated with the Sport Education tag rugby unit, a framework for understanding the skills, tactics and content embedded in effectively playing tag rugby is required. Spackman (1983) provided an initial basic framework for identifying and breaking down the relevant tactical problems involved in specific invasion games. This game framework was adapted and extended by Griffin, Mitchell and Oslin (1998) to include net/wall and fielding games. Griffin et al.’s (1998) framework was utilized to form the basis for identifying the major tactical and skill execution problems the participants were expected to solve and perform as a result of the 15-lesson Sport Education unit.

Table 4.1. identifies the tag rugby content knowledge that the team of students was expected to learn. Content knowledge is categorized within the two functional components of the game, namely offense and defense. Within each category the content knowledge is subdivided into the key tactical problems the participants must solve to either score on offense or prevent scoring on defense within a 4v4 game of tag rugby. Offensively, the team of players was expected to learn content knowledge related to solving the progressively complex problems of how to maintain possession of the ball, create space while attacking and utilizing space effectively on offense. Each of the tactical problems within offensive and defensive domains requires content knowledge of off-the-ball movements and on-the-ball skills.
For example, to effectively maintain possession of the ball in tag rugby the players must adopt a lateral or behind support position in relation to the person with the ball and the ball carrier must pass the ball accurately in either direction over varying

<table>
<thead>
<tr>
<th>Tactical Problems</th>
<th>Off-the-ball movements</th>
<th>On-the-ball skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Offense</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Maintaining possession of the ball</em></td>
<td>Behind/lateral support position (3)*</td>
<td>Accurate passing (left and right) and receiving (1)</td>
</tr>
<tr>
<td><em>Creating space in attack</em></td>
<td>Keeping distance from ball carrier (5)</td>
<td>Timing of the pass (4)</td>
</tr>
<tr>
<td></td>
<td>Changing angle of support run (9)</td>
<td>Fake passes (8)</td>
</tr>
<tr>
<td></td>
<td>Ball carrier loop support move (7)</td>
<td>Running forward quickly into space (2)</td>
</tr>
<tr>
<td><strong>Using space in attack</strong></td>
<td></td>
<td>Evading maneuvers (6)</td>
</tr>
<tr>
<td><strong>Defense</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Defending a player</em></td>
<td>Closing down the space in front of the ball carrier (11)</td>
<td>Tagging technique (10)</td>
</tr>
<tr>
<td><em>Defending space</em></td>
<td>Maintaining distance between defensive players (12)</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Each of the numbers in parentheses represent a numeric labels for each piece of content knowledge to be taught in the unit. This specific number utilized to label each piece of content knowledge is maintained throughout the data presented.

Table 4.1. Content Knowledge Relating to Tactical Problems, Movements and Skills Expected to be Learned During the Sport Education Tag Rugby Unit.
distances. To create space to attack, the players must have knowledge of how to commit a
defender before passing and maintain enough distance from the ball carrier when in
support to provide width in attack. To utilize space, players in possession of the ball must
be able to identify and run quickly into space between defenders.

Each of the pieces of content knowledge required to solve the tactical and skill
problems of the game of tag rugby identified in table 4.1. vary in their level of
complexity. Table 4.2. identifies the differing levels of complexity of the specific pieces
of content knowledge the participants were expected to learn within the Sport Education
unit. Within the game of tag rugby there are a variety of solutions to the tactical problem
of using space in attack that require content knowledge of differing complexity. For
example, a level I solution to this problem is for the ball carrier to run forward quickly
into space away from defenders. An example of a more complex (level II) solution
presented within the intervention was for the ball carrier to run forward quickly and
utilize an evading maneuvers such as a sidestep or swerve when close to the defender.
As players become more proficient at attacking or defending space a more sophisticated
level of content knowledge may be required. For example, if students can defend
effectively as a unit the offensive team may have to adopt a more complex solution to the
problem of creating space in attack. A potential solution to this problem may be to
quickly alter the angle of attack using a level IV complexity “switch” move. Within this
‘switch’ move the ball carrier would alter the angle of running from forward to diagonal
with a support player receiving a well-timed pass on a perpendicular trajectory. This
move, when performed with good timing, rapidly changes the angle of attack and creates more space for the pass receiver to invade space between defenders.

<table>
<thead>
<tr>
<th>Tactical problems</th>
<th>Level of Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td><strong>Offense</strong></td>
<td></td>
</tr>
<tr>
<td>Maintaining</td>
<td>Accurate passing and receiving (1)</td>
</tr>
<tr>
<td>possession of the</td>
<td></td>
</tr>
<tr>
<td>ball</td>
<td></td>
</tr>
<tr>
<td>Creating space in</td>
<td>Running forward quickly into space (2)</td>
</tr>
<tr>
<td>attack</td>
<td></td>
</tr>
<tr>
<td>Using space in</td>
<td></td>
</tr>
<tr>
<td>attack</td>
<td></td>
</tr>
<tr>
<td><strong>Defense</strong></td>
<td></td>
</tr>
<tr>
<td>Defending a player</td>
<td>Tagging technique (10)</td>
</tr>
<tr>
<td>Defending space</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2. Level of Complexity of Tag Rugby Content Knowledge Expected to be Learned by Participants During Sport Education Unit.
None of the students participating in the tag rugby unit had previous experience of playing any form of rugby. As many of the students had previous experience of participating in other invasion games such as basketball and flag football there was some chance for transfer of knowledge on offensive and defensive strategies, however, this was not assumed to be the case. For this reason, the Sport Education unit was planned based on an initial minimal participant content knowledge of the skills and movements of tag rugby. The unit was also planned in a developmentally progressive manner such that basic level I complexity be on-the-ball skills and for off-the-ball movements were taught during early lessons of the unit (see Table 4.3.).

Having learned the basic skills required to actively participate in a small-sided game it was intended that the content knowledge presented to the participants would become progressively more complex. Tables 4.3. and 4.4. provide a lesson-by-lesson breakdown of the content knowledge expected to be learned by participants during instructional tasks as the unit progressed.

*Summary of Content Knowledge Expected to be Learned and Performed as a Result of the Tag Rugby Sport Education Unit*

By the end of the Sport Education unit the participants were expected to be able to consistently perform the on-the-ball skills and off-the-ball movements described in table 4.1. On offense, when in possession of the ball the students were expected to run quickly towards space between opposing defenders and to demonstrate effective evading maneuvers such as the sidestep, swerve or fake pass to avoid having their tag stolen by the first defender. If there was no obvious space to utilize the ball carrier was expected to
move forward to commit a defender and then either release an accurate lateral pass to a support player or have their tag stolen. As an offensive support player the participants were expected to stay behind the ball at all times and maintain enough distance from the ball carrier to create space in attack using width. These strategies would include adapting the support provided to the ball carrier. With the loop move the passer would quickly run around the back of the receiver to create an extra player in the line of attack. With the switch move the support player would adopt a perpendicular angle of support and receive the ball from a well-timed turn and pass. On defense, participants were expected to defend as a lateral unit maintaining distance between the players to reduce the space available out wide for opposition players to utilize. The participants were also expected to individually defend by quickly running forward to reduce the space available for the offensive ball carrier to run into.
### Table 4.3. Lesson-by-Lesson Breakdown of the Specific Knowledge Expected to be Learned by Participants During Teacher-led Tasks of the Unit (lessons 1-4).

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Instructional Task</th>
<th>Tag 4v4 Game</th>
<th>Co-operative Games</th>
<th>4v1 Keep ball</th>
<th>Auckland Grids (1)</th>
<th>Pass &amp; Support</th>
<th>4v4 Game</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Content knowledge</td>
<td></td>
<td></td>
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*Note.* Numbers in parentheses represent content element number labels assigned in table 4.2.
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<td>Task</td>
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<td>Bulldog</td>
<td>4v4</td>
<td>Bull dog</td>
<td>2v1</td>
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Table 4.4. Lesson-by-lesson breakdown of the specific knowledge expected to be learned by participants during student-led tasks of the unit [continued].
Table 4.4. Continued

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<tr>
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<td>4v4</td>
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<tr>
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</table>
To examine the effect of the peer assisted learning tasks on participant tag rugby content knowledge and performance it is necessary to provide an indication of the effect of the initial teacher-directed lessons (1-4) on student learning. The following section provides a summary of participant performance during the teacher-directed instructional tasks of lessons 1-4.

**Summary of Participant Performance During Teacher-Directed Instructional Tasks during lessons 1-4.**

The objective of lesson 1 of the unit was for the teacher to introduce to the students the aims and organizational structure of the Sport Education curriculum. Participants were introduced to the rules of the game of tag rugby including how to use and wear the tag belts and knowledge of the primary and secondary rule boundaries that constitute the game. This explanation included knowledge of the goal of the game, field boundaries, starting positions and rules for changes in possession of the ball. At the end of lesson 1 four volunteers from the group were asked to form a “sports board” and meet during lunch recess prior to the next lesson to select teams for the upcoming unit. This team selection was based on sport board members ratings of participants on their motor skill ability and the provision for heterogeneous ability team groupings.

At the beginning of lesson 2 of the unit the team groupings for the season were announced and the students participated in co-operative games to develop team cohesion. The content of these tasks were unrelated to tag rugby (see Appendix A for detailed description). The learning objective for lesson 3 was to introduce students to the fundamental on-the-ball skill of passing in tag rugby. The instructional tasks selected to
develop knowledge of passing technique was the 4v1 keep ball task and the “Auckland grid”. Within the keep ball instructional task the four offensive players have to maintain possession of the ball by passing underhand to each other without the single defender stealing the ball carrier’s tag. To be successful in the 4v1 keep ball, participants must pass accurately to a support player who is in an open passing lane away from the defender. The Auckland grid task is focused on developing unopposed passing technique and involves participants having to pass either left or right to a receiver while moving across the diagonal of a 15 yd x 15 yd square grid. Table 4.5. illustrates the results of the target participants’ opportunities to respond (OTR) and percentage success during the keep ball and Auckland grid tasks. Analysis of the results reveal that the target group of students were able to consistently pass the tag rugby ball accurately during both of the instructional tasks.

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v1 Keep Ball</th>
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<th></th>
<th></th>
<th></th>
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<th>Overall</th>
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<tbody>
<tr>
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<td>Carla</td>
<td>Todd</td>
<td>Sally</td>
<td>Carrie</td>
<td>Sarah</td>
<td></td>
</tr>
<tr>
<td>OTR</td>
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<td>8</td>
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<td>Percentage Success</td>
<td>77%</td>
<td>92%</td>
<td>100%</td>
<td>75%</td>
<td>63%</td>
<td>82%</td>
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</tbody>
</table>

Auckland Grids (passing left)

| OTR                     | 24   | 26    | DNP  | 20    | Absent | 20    | 90      |
| Percentage Success      | 79%  | 81%   | 85%  | 70%   | 77%    |       |         |

Auckland Grids (passing right)

| OTR                     | 12   | 12    | DNP  | 12    | Absent | 10    | 46      |
| Percentage Success      | 58%  | 100%  | 100% | 70%   | 83%    |       |         |

Table 4.5. Lesson 3 Participant OTR and Performance Success During Instructional Tasks.
The intended learning objectives of lesson 4 was for the students to develop consistency in their unopposed passing technique and to apply this technique within an unopposed team offensive movement strategy of passing along a line. The students were then expected to apply this passing content knowledge within a 4v4 opposed scrimmage game. The instructional task selected to refine passing technique was a review of the Auckland Grid task completed during lesson 3. To develop students’ offensive passing support position the Pass and Support task was chosen. During the Pass and Support task participants must accurately pass the ball laterally along the line of players while moving forward with the ball. To execute the pass and support task effectively, the ball must be passed accurately to the receiver and the support players (non ball carriers) must stay lateral or behind (not in front) of the ball carrier whilst maintaining distance between players. Table 4.6. depicts the OTR and performance success of participants within the instructional tasks of lesson 4. Analysis of performance success during the instructional tasks reveals that all of the participants consistently passed the ball accurately to a receiver while moving during the unopposed “Auckland Grid” and “Pass and Support” tasks. The participants demonstrated an average 77 percent appropriate behind support position during the unopposed Pass and Support task which decreased to 69 percent success rate during the 4v4 scrimmage game.
### Lesson 4

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<tr>
<th>Instructional Task</th>
<th>Auckland Grids (2) (passing left)</th>
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<tbody>
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<td>Josh</td>
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<td>Todd</td>
<td>Sally</td>
<td>Carrie</td>
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<td>Absent</td>
<td>DNP</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>100%</td>
<td>80%</td>
<td>86%</td>
<td>88%</td>
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<table>
<thead>
<tr>
<th>Auckland Grids (2) (passing right)</th>
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</thead>
<tbody>
<tr>
<td>OTR</td>
<td>3</td>
<td>Absent</td>
<td>DNP</td>
<td>5</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>100%</td>
<td>80%</td>
<td>50%</td>
<td>69%</td>
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<table>
<thead>
<tr>
<th>Pass and Support Task</th>
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<th>4v4 Scrimmage Game</th>
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<tbody>
<tr>
<td>Accurate Pass made to Support Player</td>
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<td>OTR</td>
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<td>6</td>
<td>5</td>
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<tr>
<td>Percentage Success</td>
<td>77%</td>
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<td>66%</td>
<td>80%</td>
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</table>

<table>
<thead>
<tr>
<th>4v4 Scrimmage Game</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Support player adopts a position behind or lateral to ball carrier</td>
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<td>OTR</td>
<td>14</td>
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<td>Percentage Success</td>
<td>64%</td>
<td>60%</td>
<td>66%</td>
<td>87%</td>
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Table 4.6. Lesson 4 Participant OTR and Performance Success During Instructional Tasks.

To answer the primary research question (1) of how participant content knowledge evolved during the peer assisted learning tasks of the Sport Education unit the following section provides a didactic analysis of the factors that shaped the evolution of content that occurred during student-led instructional tasks of lessons 5 to 15.
Lesson 5

A Priori Analysis – Teacher’s Intent for the lesson

The learning objectives for lesson 5 were for the participants in the group to develop their unopposed and opposed running skills when in possession of the ball. The instructional tasks selected to teach evading maneuvers were the “sidestep” and “swerve tasks” (Appendix B). The aim of these tasks was for students to learn the content knowledge of the technique of performing the swerve and sidestep evading maneuvers. To facilitate this process the tasks were planned progressively such that the participants attempted the maneuvers unopposed around a marker cone and then against a static defender. The critical technique elements of performing an effective sidestep evading maneuver is to plant the foot closest to the defender such that the ball carrier’s head is over the planted foot and then push off the planted foot quickly in the opposite direction. Claire, the teacher, emphasized this content during the pre-lesson coaches brief by drawing an analogy to the student’s existing knowledge of basketball, “Your going to run up and step off the right foot and your going to go to the left almost like in basketball with how you do a “V” cut. That’s what the side-step is”.

The swerve maneuver is an alternative method of evading a defender utilized when the ball carrier has a greater distance between him/herself and the first defender. From a technique standpoint during the swerve the performer does not lose their forward momentum to avoid the defender but draws the defender off balance and curves around them on a smooth trajectory. Claire highlighted this difference in content knowledge by suggesting to the coaches that, “With the swerve your not going to stop but rather just act
like your going right but actually go left” (Claire, pre-lesson teacher brief, swerve task, lesson 5).

After refining the technique of the swerve and sidestep maneuvers during an unopposed setting, the coaches were then expected to refine the task by including a static defender that the participants must evade. Following these tasks the coaches were to teach the participants to apply evading technique during an opposed modified game. The instructional task chosen to apply this knowledge was “Bulldog” (Appendix G). Figure 4.1. illustrates the organization of the Bulldog task.

![Diagram of Bulldog task]

Figure 4.1. Organization of “Bulldog” Instructional Task.

The goal of the bulldog task is for the attacking players to evade the defender (the bulldog) and pass the try line at the other side of the grid. If the defender steals the tag of an attacker that player becomes a stationary defender at the location in the grid where the tag was stolen. The task continues until all of the attackers have had their tags stolen. The most effective strategy to avoid being tagged by the defender in the bulldog task is for the
attackers to run forward quickly into the space away from the defenders and use either the side-step or swerve evading maneuvers to avoid being tagged. Claire described this critical content to the coaches by reading from the task card, “Remember look for space to run into and use the side-step and swerve to avoid being tagged”.

_A Priori Analysis - Coach’s Intent for the Lesson_

During the pre-lesson coach plan interview, Josh the coach, delineated his intent to set up the side-step and swerve instructional tasks followed by the bulldog game. The pre-lesson interview revealed that Josh understood difference in technique between performing a sidestep and swerve maneuver. He explained that, “In the swerve maneuver you want to be able to move without stopping and make your opponent go off balance but to keep your momentum”. Josh anticipated that the tasks would not present many difficulties for his teammates and that he would focus on using feedback statements such as “run at spaces, not faces” during the bulldog task to help them avoid the defender. In event of any of his players would have difficulties in performing the evading maneuvers he planned on utilizing the pedagogy of demonstration and repetition,

“I would probably find whoever understood it the most and have me and them try and explain it to the person. I would then try and demonstrate it and then kinda pause and make sure they understood it and stay on the practice a little longer” (Josh, pre-lesson coach plan, lesson 5).

_A Posteriori Analysis – Student Performance in Tasks_

Table 4.7. illustrates the number of opportunities to respond and percentage success rate for each of the participants on each of the instructional tasks completed in lesson 5. The opportunity to perform a sidestep was determined to be successful if the participant demonstrated the technique elements of pushing from the near side foot to
move the body quickly in a lateral direction away from the cone or static defender. The swerve was deemed to be successful if momentum was maintained and the attacking player moved smoothly around the cone or static defender.

**Lesson 5**

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<td>Percentage Success</td>
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<td>87%</td>
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</tbody>
</table>

| Sidestep (Static defender)         |     |     |     |     |     |         |
| OTR Absent                         | 5   | 9   | 10  | Absent| 24  |
| Percentage Success                 | 100%| 100%| 90% |     | 96%  |

| Swerve (cone)                      |     |     |     |     |     |         |
| OTR 1 Absent                       | 4   | 9   | 5   | Absent| 22  |
| Percentage Success                 | 100%| 75% | 89% | 89% | 86%  |

| Bulldog (Static Defender)         |     |     |     |     |     |         |
| OTR 3 Absent Defender              | 11  | 5   |     | Absent| 19  |
| Percentage Success                 | 66% | 91% | 80% |     | 84%  |

| 4v4 Scrimmage Game                |     |     |     |     |     |         |
| Ball carrier runs forward towards space | OTR 6 Absent | 3 | 5 | 2 | Absent| 16  |
| Percentage Success                 | 66% | 100%| 80% | 0% | 69%  |

| 4v4 Scrimmage Game                |     |     |     |     |     |         |
| Ball carrier performs sidestep or swerve move | OTR 6 Absent | 3 | 5 | 2 | Absent| 16  |
| Percentage Success                 | 33% | 33% | 0% | 0% | 19%  |

Table 4.7. Lesson 5 Student OTR and Performance Success During Instructional Tasks.
Results revealed that participants demonstrated a high level of success during the unopposed sidestep task (87 percent success), opposed sidestep task (97 percent) and the unopposed swerve task (86 percent). Lesson observation data revealed that Josh initially explained the tasks using a demonstration of the technique and provided a brief description of the basic goal of the task, “You’re going to stop at this cone switch to this foot around it, and then keep going” (Josh, lesson observation, sidestep cone task, lesson 5).

During the initial trials of the task Josh also provided specific feedback related to key content embedded in the sidestep task, “When your doing it you want to distance yourself from the cone a little more, change foot around it, it’s almost like a weight transfer from one foot to the other” (Josh, lesson observation, sidestep (cone) task, lesson 5). In response to an initial failure in the task by Todd, Josh clarified the content in the task by providing a figural representation of the movement required, “When your doing it don’t go back you want to completely change from one foot to the other, go and then switch and keep going straight afterwards. Think of it as though it’s a corner of a wall and you want to go around it” (Josh, lesson observation, sidestep cone task, lesson 5). Josh’s initial organization of the bulldog task included a brief explanation of the task that attempted to scaffold on the participant’s previous knowledge of a similar tag game they had experienced:

Each of you have a ball, someone will be the defender. You’re trying to run passed the defender and get to the other side of the grid. If you are tagged you become stationary and become a tagger. You remember sharks and fishes, it’s the same thing. Start off with three balls and one tagger. The game continues until there is no free attackers. And attackers remember look for space to run into. (Josh, lesson observation, bulldog task, lesson 5)
Josh’s explanation failed to include the critical constraint of the task that the original defender was allowed to move. He allowed them to remain static throughout the task. This misalignment between the coach’s implementation of the task and the teacher’s intent for the task had the effect of reducing the difficulty of the task for the attackers and allowed them to be successful in evading the defender without having to regularly utilize the side-step and swerve maneuvers. Attacking players achieved success in the task predominantly by running forward quickly into space between the static defenders.

Results of participant performance of running skills during the 4v4 scrimmage game application task (table 4.7.) reveal that when in possession of the ball on offense the players tended to run forward quickly into space (69 percent of OTR). However, on only 19 percent of occasions did the ball carrier utilize a sidestep or swerve maneuver to evade the defender. This misalignment between the expected performance goals of the lesson and actual performance in the game could be explained by the participant’s lack of successful experience in applying the evading maneuvers in a more actively opposed context during the previous practice. The teacher then directed the participants to progress to a more complex task (4v4 game) before they had gained consistency/mastery at a simpler level of play.

Lesson 6

A Priori Analysis – Teacher’s Intent for the Lesson

Having introduced the students to the basic on-the-ball skills of tag rugby, including passing, receiving and running with the ball, the objective of lesson 6 was twofold. First, participants were expected to refine their performance of evading maneuvers during an opposed setting and second, players were expected to develop an
understanding of the content knowledge needed to make appropriate decisions of when to pass the ball and the appropriate support position needed to facilitate creating space in attack. From a content knowledge perspective the specific intent of lesson 6 was for students to learn offensively, to run quickly towards space, release the pass only after committing a defender and adopt an appropriate wide, lateral position when in support of the ball carrier. The instructional task selected to review running skills was the bulldog practice task introduced in lesson 5. The adaptation from lesson 5’s task was the planned progression of more than one active defenders attempting to steal tags. Claire emphasized this task alteration during the pre-lesson coach brief, “We are going to combine groups together so it will be bigger and you’ll have two people in the middle instead of one person”.

The instructional task chosen for coaches to teach appropriate timing of the pass and support position was a 2v1 offensive overload practice. Figure 4.2. shows the organization of the planned 2v1 practice task to be used.

![Diagram](image.png)

Figure 4.2. Organization of “2v1” Task, Lesson 6.
The goal of the 2v1 offensive overload task is for the two attackers to carry the ball over try line A-B without the ball carrier having their tag stolen or the ball being passed forward or dropped. The coach calls a defender’s number, and that defender attempts to prevent the attackers scoring passed the A-B try line. The resultant task is a 2v1 offensive overload scenario with the defender’s starting position varied dependent on the specific defender called by the coach.

Claire’s explanation of the organization of this 2v1 task within the coach briefing was confusing:

OK you guys see on the sheet your going to have one, two, three defenders and then you’ve got your attackers and one person is going to have the ball. OK so the first attacker is going to run down, your goal is to try and get from point A to point B and your job is to try and move the defenders and I believe what’s going to happen it is you pass it. (Claire, pre-lesson coach brief, 2v1 task, lesson 6)

A Priori Analysis – Coach’s Intent for the Lesson

This lack of clarity in the teacher’s explanation of the 2v1 task was reflected in the lack of detail Josh presented in his pre-lesson plan for the task. When probed on the purpose and organization of the 2v1 task during the pre-lesson coach interview, his response was related to the generic goal of decision-making. “That’s to work on so you know what kind of decisions you should be making in the game if you’ve got the ball or when your playing on offense” (Josh, pre-lesson interview, 2v1 task, lesson 6). This lack of detail provided on the 2v1 task was in marked contrast to his higher level of verbalization of the content knowledge of evading skills embedded within the bulldog task, “With the sidestep what your really doing is transferring your weight from one foot to the other and making sure your distancing yourself enough from the defender so they
can’t grab your tag and not completely stopping” (Josh, pre-lesson interview, 2v1 task, lesson 6).

Despite his apparent lack of understanding of the specific content knowledge required to be coached within the 2v1 instructional task Josh did not anticipate any major problems with his teammates performing the tasks. His only concern was the attention span of one of the individuals in the group and the detrimental effect this had on group activity time, “They need to pay attention more as they get side-tracked on other things and my teammates get upset because then I have to re-explain it and it takes time out that we could be practicing” (Josh, pre-lesson interview, 2v1 task, lesson 6). When asked what he would do to remedy this lack of attention Josh suggested that he really did not need to make an intervention because peer pressure was usually sufficient, “After a while everyone started to get annoyed and I think it helped her listen”.

A Posteriori Analysis – Participant Response to Tasks

Results of performance success rate in the instructional tasks (Table 4.8.) show that the participants were consistently successful in avoiding being tagged during the initial bulldog task. Lesson observation data revealed that much of the successful evasion of the defender was as a result of attackers running forward quickly into space between the two active defenders rather than using the evading maneuvers of sidestep and swerving.

The lack of clarity of the teacher explanation of the 2v1 task and the resultant misalignment between the didactic intent of the task and the coach’s understanding of the design of the task caused a significant modification to the task actually established during the lesson.
### Table 4.8. Lesson 6 Participant Student OTR and Performance Success during Instructional Tasks.

Although Josh originally seemed to understand the task to be two attackers against one defender the diagram on the coach’s task card caused a misconception and his initial organization of the task included 2 attackers against three defenders working simultaneously:

Today we’re going to be working on decision-making and being aggressive, so were doing 2 verses 1. Sorry 2 attackers and 3 defenders, so we need another attacker and another two defenders. I’m sorry I’m trying to find a way to explain this, OK the defenders are trying to stop the attackers from scoring, the attackers have to move to make the defenders react so ball carrier you want to pass…so the usual thing. (Josh, lesson observation, 2v1 task, lesson 6)

Analysis of the percentage success rate for the 2v3 task in Table 4.8. reveals that all of the offensive players found this task problematic. Only 2 out of 10 trials (20 percent) achieved the performance objective of the attacking pair carrying the ball over the try line without the ball carrier his/her tag stolen. The constraints of the defensive overload situation of the enacted task of 2 attackers against three defenders minimized

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>Bulldog (Active Defender)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Josh</td>
</tr>
<tr>
<td>OTR</td>
<td>DNP</td>
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<tr>
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<table>
<thead>
<tr>
<th>2v1 Task (2v3 actual task)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
</tr>
<tr>
<td>Percentage Success</td>
</tr>
</tbody>
</table>
the possibility of the attackers creating space in attack. From a content knowledge
perspective, the coaching points relating to knowledge of appropriate timing of the pass
and lateral, wide support position presented by the coach, although relevant to the 2v3
task, were insufficient to guarantee consistent success within the task.

Josh did not realize that the design of the established task was the constraint to
attacking success and persisted with the same organization of the task throughout the task
episode. During the task Josh gave relevant feedback to his peers related to running
direction, “run at spaces not faces, you want to be aggressive and look for space” and also
support position, “When someone has the ball you always want to be behind then because
you can’t do a forward pass” (Josh, lesson observation, 2v3 task, lesson 6). The error
detection feedback provided by the coach had minimal effect on the offensive players
achieving success with the task as the constraints of the defensive overload situation
required a more complex offensive solution.

During the post-lesson coach debrief Josh did not reflect that the critical element
causing the failure in the task was the difficulty of the task itself. When asked about the
efficacy of the 2v3 task during the interview Josh suggested that the task was effective, “I
think it did go pretty well. It really works on both sides, both offense and defense. It
really makes you listen to try and get it so you can get past when your outnumbered by
the other team”. Josh also emphasized that his only alteration to the task would have been
to change the personnel of who was operating as the defenders.

With regard to feedback Josh had a conceptual problem in converting his
knowledge of the content embedded in a successful performance in the task to diagnosis
of errors. Josh seemed to understand much of the offensive content knowledge relevant to
the task as he was able to elaborate on the general knowledge required for a successful performance on offense:

You need to use both dodging and passing skills. You also need to know when to pass, is it a good pass, are they in a position where if they are going to catch it do they have a window of opportunity to go and score. (Josh, lesson observation, 2v3 task, lesson 6)

From the stimulated recall of trials, Josh’s interpretation of the errors his players were making on offense were somewhat generic and focused on lack of pace of approach or as he understand it, “their lack of aggression, or going for their goal”. This attribution for failure reflected a limited analysis of the content knowledge deficiencies the participants were exhibiting.

Lesson 7

A Priori Analysis – Teacher’s Intent for Tasks

The learning objectives of lesson 7 were for students to understand content knowledge relating to strategies of appropriate individual and team defense in tag rugby. From an individual defensive perspective, the participants were expected to learn the content knowledge of running forward quickly to close down the space in front of the oncoming ball carrier. From a knowledge of team defense perspective, the students were expected to learn to defend as a lateral unit with distance maintained between defensive players to prevent offensive players creating width in attack. The participants were expected to apply this knowledge within the 4v4 game-play and demonstrate a high percentage of appropriate aligned responses.

The instructional task selected to teach defending as a lateral unit was “Team Defend” (Appendix B). Within this relatively simple practice the coach stands in front of
a lateral line of participants who are approximately 5 yards apart. On the coach’s
directional command (e.g. left, forward) the line of players move quickly in
synchronization in the appropriate direction. The performance objective of the task is that
the group move in unison, keeping an equal distance between participants.

The instructional task selected for teaching the individual defense strategies was
the “1v1 Head On” task. Figure 4.3. illustrates the organization of the 1v1 Head on task.
The goal of the 1v1 Head On task is for the single attacker to run around the cone and
then attempt to evade the oncoming defender to score passed try line A-B. The
performance goal for the defender is to run forward quickly to close down the space
available in front of the attacker and then steal the tag before the attacker reaches the try
line.

---

Figure 4.3. Organization of the “1v1 Head On” Instructional Task
During the pre-lesson teacher brief, Claire emphasized that the focus for the coaches should be on feedback related to knowledge of defending:

We’re going to be working a lot on defense today. Some coaching points for the 1v1, be quick to cut down the space the attacker has to run into, get opposite them quickly and try to anticipate what the attacker is going to do. (Claire, pre-lesson teacher brief, 1v1 Head On, lesson 7)

A Priori Analysis – Coach’s Intent for the Lesson

The pre-lesson interview with the student coach revealed that Josh perceived the purpose of the 1v1 Head On task to be focused on both defense and offense, “They need to be able to do the sidestep and swerve maneuvers and to be aggressive with the ball or just to be aggressive as a defender”. Josh’s elaboration on his notion of defensive “aggression” aligned with the content knowledge intended to be embedded within the 1v1 task, “If you’re an aggressive defender then you’re not really going to wait for them to come to you, you’re really going to go for them and not freeze up at the last second”.

Despite his understanding of the defensive content in the task his didactic intent for the task seemed to be focused on offensive performance, “I need to coach them to do what they have been taught, like with the head on about the sidestep, really incorporate what we have learned in that and just be aggressive” (Josh, pre-lesson coach plan, 1v1 Head On task, lesson 7).

To facilitate challenge in the task Josh planned to pair his players by matching them by his perception of their ability, “We’re not going to pair up our best player and our worst player we’re going to do like who needs someone so everybody has a little bit of challenge”. With the “Team Defend” task Josh’s understanding of the organization of the task was aligned with the teacher’s explanation. When probed on the relevance of the
task for game play Josh revealed a misconception that the purpose of the task was for the
offense to work as a unit, “If you’re not organized and you have no-one around you or to
the side of you to pass to you’ll end up losing possession of the ball” (Josh, pre-lesson
plan, team defend, lesson 7).

A Posteriori Analysis – Participant Response During Tasks

Table 4.9. illustrates the number of opportunities to respond and percentage
success rate for each of the participants during instructional tasks in lesson 7. Results
reveal that during the “Team Defend” task the participants were consistently able to
maintain a line and equidistance between themselves on the coach’s directional
command.

Analysis of the percentage success rate for the 1v1 Head On tasks revealed that
the participants had more success in achieving the goals of the task (60%) on defense
than on offense (40% success). Table 4.9. shows that within the team individual variation
existed in performance within both domains. Carrie and Sarah found the task problematic
on both offense and defense with neither of them demonstrating a successful performance
on offense. Carrie was only successful at stealing the tag on defense when her opponent
was Sarah on offense. The results reveal that Todd and Sally experienced a high level of
success on both offense and defense within the task. These data suggest that success and
failure on both offense was dependent on the pace of the player rather than the content
knowledge of evading maneuvers.
Lesson 7

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<th>Instructional Task</th>
<th>Team Defend</th>
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<tbody>
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<td>Coach</td>
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<table>
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<th>Instructional Task</th>
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<td>Coach</td>
<td>DNP</td>
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<th>Instructional Task</th>
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<tr>
<td>OTR</td>
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<td>15</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>15%</td>
<td>20%</td>
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Table 4.9. Lesson 7 Participant OTR and Performance Success During Instructional Tasks.

To set-up the 1v1 Head On task Josh provided a succinct explanation that delineated the goal and organization of the task:

When I say ones, the two ones will each go around their cone and then they’ll meet in the middle and the attackers will try and get to the other side and score as the defender tries to defend and take their flag (Josh, lesson observation, 1v1 Head On, lesson 7).
Although this brief explanation allowed instant activity for the participants, the instruction failed to provide to his teammates any indication of his didactic intent for the specific performance elements they should exhibit. Josh continued to organize the task but did not provide any post-trial feedback to the participants. After trial #8, Josh removed Sarah from the task and took her to the side to provide her individual tuition on the offensive sidestep and swerve maneuvers:

Sarah stop for a second, Carrie you alternate in with them I need to talk to Sarah for a second because she wasn’t here when we were doing the sidestep so I’m going to teach her real quick so you guys alternate and I’ll be right back. This is something that’s going to be very useful when you have the ball OK? So when you have the ball, say that yellow cone right there is an attacker, the sidestep maneuver is when your running and you move around them to go [Josh demonstrates], did you see how I did that? You place your foot and you turn the other one diagonally to go. You want to transfer your weight to the other foot around it. So show me. (Josh, lesson observation, 1v1 Head On task, lesson 7).

During Josh’s one-on-one tuition session with Sarah the other participants in the group continued to attempt the 1v1 Head On task without content feedback. Sally and Todd consistently achieved the goal of the task (on offense and defense) by moving quicker than Carrie to either swerve on offense or reach to tag on defense.

Analysis of individual defense performance within the 4v4 scrimmage game reveals that on only 36 percent of opportunities to respond did the participants run forward on defense to close down the space in front of the ball carrier. Analysis of the results of performance of the team defensive strategy of keeping a lateral line and maintaining distance between defenders revealed a similar low level (24 percent) success. This lack of application of content knowledge suggests that the coaching within the instructional tasks was not effective in developing the content knowledge intended by the teacher. From a didactic perspective the evidence suggests a breach in the didactic
contract misalignment between the intended learning of defensive content knowledge and the content actually learned by participants within the tasks.

Data from the post-lesson interviews provide evidence that the lack of application of the content knowledge in the team defend task to the game was as a result of a misconception of the purpose of the task. Several of the participants revealed that they perceived the group as being successful in achieving the goals of the “team defend” task. Todd stated, “Everyone stayed together, stayed in a line and moved together as one” (Todd, post-lesson interview, team defend, lesson 7). All of the participants, however, had a misaligned conception of the purpose of the team defend task for game play as they all agreed it was to practice moving on offense. This interpretation was aligned with the coach’s misconception that the practice was aimed at working as a team on offense:

   It is so we can stay together as a team, so if your playing in a game your really looking to see what your teammates are doing so you can be part of that and so if they are at the side or behind you, you can pass. (Josh, post-lesson debrief, team defend, lesson 7)

Participants’ reflections on performance in the 1v1 Head On task revealed that all of the players perceived the task to be aimed at improving both offensive and defensive skills. When probed on what was important to perform as a defender the participants understood the goal of pulling the tag but were unable to elaborate on specific content required to be successful at the task. Todd reflected that he did not remember Josh giving any defensive instructions, “Josh did not give any, not really”. All of the participants seemed to perceive the task to be focused on learning offensive content and the application of the evading maneuvers learned in the previous lesson, “We needed to work on sidesteps and dodging and to be able to do that to get around the defender” (Todd,
post-lesson participant interview, 1v1 Head On, lesson 7). Sarah attributed her failure on offense in the task to her inability to perform an effective sidestep. This view was shared by Josh who expressed exasperation at Sarah’s inability to listen:

The dodging session did not go as well as I had hoped. She did really well but she didn’t understand that about how your feet move. She has a real short attention span and she doesn’t pay attention very well. (Josh, post-lesson debrief, 1v1 Head On task, lesson 7)

Lesson 8

_A Priori Analysis – Teacher’s Intent for Tasks_

The main learning objectives for lesson 8 was for students in the group to continue to develop consistency in their unopposed passing technique and to develop an understanding of decision-making regarding the most appropriate time and direction to make a pass during a modified opposed game. The instructional task selected by the teacher to review consistency of passing accuracy was the “Auckland grid” practice task (Appendix B). Within this task students are to pass the ball either left or right accurately to a receiver, while moving across the diagonal of a 15yd x15yd square grid. This task was extended from lesson 4 to include students practicing the unopposed fake pass technique. Within this progression, instead of passing the ball either left or right to the waiting receiver, the students execute a fake pass and run on to the opposite cone. The 2v1 Pass and Support was the task selected to develop student content knowledge of appropriate timing of the pass and support position. Figure 4.4. illustrates the organization of the 2v1 Pass and Support task.
The objective of the task was to develop students’ game-based decision-making when in possession of the ball during an offensive overload situation. The goal of the 2v1 Pass and Support task is for the two attackers to carry the ball passed the defender to the try line without the ball carrier having their tag stolen. Failure occurs in the task if the a) the ball carrier has their tag stolen by the defender, b) the ball is passed forward or c) the ball is lost by the attackers by being caught by the defender or dropped to the floor. In the event of any of these scenarios the trial of the task is determined to have ended and is restarted from the original start line.

The 2v1 Pass and Support move is executed most effectively by the ball carrier running forward and away from the defender such as to ‘commit’ the defender to them. Once committing the defender, the offensive ball carrier should execute an accurate, lateral pass to the support player who is an appropriate distance away to receive the pass and run into the space vacated by the defender. If the defender decides not to commit to
the offensive ball carrier the offensive player should carry on running to score passed the try line.

During the pre-lesson coaches’ brief, the teacher emphasized several of the critical elements of the 2v1 Pass and Support task:

In the pass and support, don’t pass too early wait for the defender to commit to you. I’ve noticed that you guys do this in the game, sometimes your players get the ball and they have a tendency to want to get rid of it quickly. So have them draw the defenders and then pass it off. Support player keep your distance and don’t get in front of the ball carrier. Ball carrier also look where you are passing. If the defender tries to fool you and go to the support player don’t pass the ball but run on quickly. Finally try and make it look like you are going to pass and then sprint off in the other direction. (Claire, pre-lesson teacher brief, lesson 8)

A Priori Analysis – Coach’s Intent for the Tasks

The pre-lesson interview with the student coach revealed that Josh grasped the basic organization and general performance objective of the 2v1 pass and support task. When asked what he was looking for his players to do in the task, he responded:

We’re looking for the attackers to score against the single defender and of course be able to pass and dodge the defender and the defender is basically supposed to try and stop them. (Josh, pre-lesson interview, lesson 8)

Despite his understanding of the goal of the 2v1 task, Josh was unable to elaborate on many of the critical offensive performance elements delineated by Claire during the pre-lesson coach brief. Josh understood the main content embedded in the 2v1 Pass and Support to be the ball carrier’s evading maneuvers and timing of the pass, “we need to go and try and dodge around the defender and go until there are no options left and then you pass the ball”. He anticipated that the major problem for his teammates in achieving the aims of the task would be the slow pace at which the offensive players generally approach the defender or as he termed it, “their lack of aggression” (Josh,
lesson 8, pre-lesson plan). This prediction seemed to be based on his rationale for the failure of the offensive players to be successful during the 1v1 Head On task during lesson 7. When asked what modifications he would make if his peers were struggling to be successful in the task, Josh also demonstrated knowledge of the critical element of width in attack and the impact of the movement of the defensive player on level of task difficulty. He stated that:

The first thing to make it easier is to take a break, so they don’t get discouraged, but also to spread out the area that they are working in. I would also make an area in which only they (the defender) could move, like in a coned off area, so they can move back and forth or maybe just make them stationary. (Josh, pre-lesson plan, 2v1 pass and support task, lesson 8)

A Posteriori Analysis – Student Response to Tasks

The Auckland grid warm-up task of unopposed passing left and right was a repeat of an instructional task taught during lesson 4 of the unit. Josh’s initial organization of the task during lesson 8 verbally stimulating his players to remember a key element of previous participation in the task, “We’re doing the thing where we go back and fourth with passes, where you guys run across” (Josh, lesson observation, Auckland grid task, lesson 8). A demonstration of his intent for the participants’ successful execution of the 2v1 Pass and Support was not provided. Despite his succinct verbal introduction the students were slow getting into activity. The management time from initial explanation of the task to the start of task was approximately 2 minutes, with the major stimulus for on-task behavior coming from one of the female players, Carla, “Hey guys let’s go!” (Carla, lesson observation, 2v1 Pass and Support task, lesson 8).

Table 4.10. illustrates the number of opportunities to respond and percentage success rate for each of the participants on each of the instructional tasks completed in
lesson 8. The opportunity to pass in the Auckland grid was deemed successful if the player made an accurate pass to the receiver and the receiver caught the ball. Passing success was not assessed based on the technique demonstrated during the passing movement. An unopposed fake pass was assessed based on technique, with success being determined if the ball carrier made a step to the receiver, brought the ball across the body and looked at the receiver.

### Lesson 8

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<tr>
<th>Instructional Task</th>
<th>Auckland Grids (3) (Passing Left)</th>
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</thead>
<tbody>
<tr>
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<td>Josh</td>
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<td>OTR</td>
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</tr>
<tr>
<td>Percentage Success</td>
<td>100%</td>
</tr>
</tbody>
</table>

| Auckland Grids (3) (Fake Passes)       |  
| OTR                                    | 5       | 8      | DNP   | 6     | 7      | 9     | 35      |
| Percentage Success                     | 100%    | 100%   | 100%  | 29%   | 89%    | 83%   |

| 2v1 Pass and Support (1)              |  
| OTR                                    | Coach   | DNP    | 7     | 6     | 7      | 6     | 26      |
| Percentage Success                     | 0%      | 33%    | 0%    | 33%   | 23%    |  

*Note: DNP means did not participate*

Table 4.10. Lesson 8 Participant OTR and Percentage Success During Instructional Tasks.

Results revealed that for the warm-up tasks in the “Auckland Grids” the students demonstrated a high level of success on both the unopposed passing (93 percent) and
unopposed fake passing (83 percent) tasks. Carrie was the only player who did not achieve success at the fake pass technique and this was due to hesitation following a collision with an oncoming player. Josh was unsure of the cause of the collision incident and expressed frustration at the task, “This is chaos!” (Josh, lesson observation, Auckland Grid task, lesson 8). The teacher clarified the situation for Josh by re-emphasizing a critical organizational element of the task, “Everybody has to fake the same way” (Claire, lesson observation, Auckland Grid, lesson 8). Josh responded to this advice by stating the organizational feedback to the whole group, “Everybody has to fake the same way!” This feedback had a positive effect on the performance of the participants with all subsequent trials being aligned with his direction.

To coach the 2v1 Pass and Support task Josh chose to bring all of his players to form a circle around him and provide a verbal explanation of the task. This verbal instruction lasted nearly four minutes with much of the explanation taken from the coaching task card provided to Josh by Claire. Josh initially provided information on the organization of the task:

Here’s what were going to do. There’s a pair of attackers. There’ll be 2 lines each with 2 attackers. Every attacker will have a ball. The defender will be out here and your point is you have to pass to the other attacker and score at the try line passed the defender. (Josh, lesson 8, lesson observation)

Josh continued to provide his players all of the coaching points from the task card:

Here’s just a few little tips, don’t pass too early and wait for the defender to commit to you, means wait for them to make the first move. The attacker without the ball keep your distance and do not get in front of the ball carrier. When we play the game that’s a key point, do not get in front of the ball carrier. And if your going to do a fake pass try and make it look real and try to sprint off in the other direction, when your trying to do that.
This extended explanation seemed to confuse some of the players with Sally and Carrie requesting to look at the diagram on the task sheet. Carla again stepped into the leadership role, “I understand it. You guys are passing it to each other to get past me” (Carla, lesson observation, 2v1 Pass and Support task, lesson 8)

Analysis of the percentage success rate for the 2v1 Pass and Support task in table 4.10. revealed that all the participants found this task problematic. Carrie and Todd had six attempts at the task and failed on every occasion to beat the defender and score past the try line and Sally and Sarah succeeded on only 2 of their six attempts (33 percent).

*The 2v1 Pass and Support Task as a Critical Didactic Incident.* Amade-Escot (In Press) defined a critical didactic incident (CDI) as an event or activity where the outcome of the task appears problematic during the process for both the task leader and the participating students. In other words, the participating students are finding it difficult to exhibit the intended behavioral response to the task, and the task leader is struggling to provide feedback to facilitate peer student performance aligned with the task goal.

Marsenach and Ali (1991) provided five key observational criteria related to the specific requirements of the didactic approach that serve to define a critical didactic incident. First, a didactic incident is deemed critical if most of the students consistently fail to achieve the learning outcomes expected by the task leader even though they cooperate and consistently attempt the task. The 2v1 Pass and Support task in lesson 8 satisfies this criterion. The task lasted almost 15 minutes with a total of 13 attempts made by participants of which only 2 were successful in meeting the performance outcome expected by the task leader. Marsenach and Ali’s (1991) second criteria for a CDI
proposes that within the episode the task leader attempts by many methods (e.g. feedback or task refinement) to help the students learn the content of the task.

Table 4.11. provides a trial-by-trial task analysis of the participant behaviors and task leader behaviors during the 2v1 Pass and Support task during lesson 8. As can be seen in table 4.11. the task leader, Josh, provided content feedback statements to his teammates on five separate occasions, relating to three of the critical elements of the task. This feedback related to support players staying behind the ball carrier (trials 1, 2 and 7), the ball carrier committing the defender before passing (trials 1 and 2) and the ball carrier moving quickly towards space (trials 11 and 13). The coach also refined the 2v1 task twice within the content episode with the aim of providing more success for the offensive players. At the end of trial #7 Josh (at the request of the defender) extended the length of play area and at the end of trial #11 (at the request of the teacher) he went on to restrict the movement of the defender by demarking a lateral area in which the defender was restricted to move. These descriptions of task leader behavior highlight that during the students’ practice of the task the coach attempted by many methods to help the students learn the content of the task.

The third criterion for defining a critical episode considers the outcome of the CDI in terms of being successful or unsuccessful. As can be seen in figure 4.11., despite the multiple modes of intervention provided by the task leader the outcome of the 2v1 Pass and Support task during lesson 8 was unsuccessful as the students could not consistently solve the problem of executing the 2v1 offensive overload situation with a pass and support move. The episode ended with the teacher instructed the task leader to end the task. “Take the cones out Josh, we are going to get you into a game with Chas’s
team” (Claire, lesson observation, 2v1 Pass and Support task, lesson 8). Criteria four and five of Marsenach and Ali’s (1991) definitions of a critical didactic incident concern the reporting of specific and detailed descriptions of participant behaviors and the situation in which the CDI occurred.

Within the didactic framework there is an assumption that a perfect matching between the task leader and participating students’ understanding is unrealistic and that these mismatches manifest in misalignment between the goals of the stated task and the behaviors of students engaging in the task. This misalignment between the task leader’s goals for the task and the student responses within the task form the basis of the emergence of the didactic contract. Figure 4.5. represents a pictorial representation of the emergence of the didactic contract through lesson 8.

During his initial explanation of the 2v1 Pass and Support task in lesson 8 Josh was explicit in stating to his peers the broad performance goal of the task, “to pass to the other attacker and score at the try line past the defender”. 
<table>
<thead>
<tr>
<th>Trial #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>Total</th>
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<tbody>
<tr>
<td>Participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>% success</td>
</tr>
<tr>
<td>Success/Failure</td>
<td>F</td>
<td>S</td>
<td>F</td>
<td>F</td>
<td>S</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>20%</td>
</tr>
<tr>
<td>Content Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ball carrier runs quickly to space (2)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Behind/lateral support position (3)</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
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<td>+</td>
<td>-</td>
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<td>+</td>
<td>61%</td>
</tr>
<tr>
<td>Support player keeps distance (5)</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8%</td>
</tr>
<tr>
<td>Timing of Pass (4)</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Accurate passing &amp; receiving (1)</td>
<td>+</td>
<td>N/A</td>
<td>-</td>
<td>+</td>
<td>N/A</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>62%</td>
</tr>
</tbody>
</table>

*Note.* +/- Successful/failure to demonstrate content element, - Critical failure element, © Coach feedback statement, N/A Not applicable ball carrier did not choose to pass.

Table 4.11. Trial-by-Trial Task Analysis of Participant Behaviors During the 2v1 Pass and Support Task, Lesson 8.
Lesson Time | Structure of the lessons (coach’s plan) | Structure of the content really taught (Researcher)
---|---|---
3:45 | Passing across Auckland Grid----- | Task 1
5:48 | Fake Passing across Grid---------- | Task 2
12:58 | 2v1 Pass and Support Move ----- | Task 3
18:10 | | Episode 1
22:17 | | Breach of DC (content elements 1, 3, 4)
24:18 | | Episode 2
25:49 | | Transitional task of defender

Figure 4.5. Evolution of Didactic Contract through 2v1 Pass and Support Task (lesson 8)
Despite the clarity of his explanation of the goal of the task, Josh did not provide a demonstration of the specific performance elements necessary for the students to achieve the aims of the 2v1 Pass and Support task, instead opting to read the critical elements directly from the task card.

The trial-by-trial account of participant performance in the 2v1 Pass and Support task in table 4.11. provides a breakdown of the critical performance elements of the task and the participant’s performance on each critical variable for each trial. The results reveal that successful performance was only achieved in the task when Sally ran quickly into space to get around Carla on defense.

The successful trials 4 and 5 (table 4.11.) did not require learning many of the critical elements of content knowledge embedded in the 2v1 pass and support move, such as committing the defender (content element #4). Instead the success was achieved through utilization of running skills learned earlier in the unit.

“Staying Wide”. The analysis of the trials shows that on many (50 percent) occasions the cause of the failure of the trial was the slow pace at which the ball carrier approached the defender and the lack of distance between the ball carrier and the support player (30 percent). On these occasions the defender’s task was made too easy. By staying close together the attacking players did not create an adequate space for the support player to run into once the pass was made. The defender could easily step across in front of the support player and force the attacker to slow down such that the attackers had to either make a second pass or try and run into a narrow space. This scenario often resulted in an inaccurate or dropped second pass (trials 3 and 9) or a stolen tag (trials 4, 6, 8). The coach did not make reference to this critical element within any of the feedback.
statements made during the task and none of the attacking players identified this aspect as being a potential cause of task failure during the stimulated recall of events. Instead the participants suggested that the critical element to being successful in the task was the timing of the pass. Todd stated, “we needed to commit the defender and then pass it off” (Todd, post-lesson participant debrief, 2v1 Pass and support task, lesson 8).

“Stay Behind and Don’t Pass Too Early”. From table 4.11. it can be seen that the coach’s post-trial feedback statements within the episode tended to be focused on his teammates staying behind the ball when in attacking support positions (trial #s1, 2, 7) and not passing until the defender is committed to you (trial #s 1 and 2):

You guys [Todd, Carrie] go and I’ll explain to them what I told you. Sarah, Sally when you guys are doing that you don’t want to pass right away, wait for her to come to you basically and only pass when you need to pass. Make sure you pass behind you. You really want to wait for her to charge because after I say go she can get your flag at any time. And then you don’t pass until you need to and pass behind you, alright? (Josh, coach feedback statement, T2, lesson 8)

These early feedback statements had the desired effect on participant’s learning of the content knowledge of appropriate support player positioning as in subsequent trials of the task the support player stayed behind the ball carrier on 73 percent of passing trials. The feedback comments regarding committing the defender seemed to serve, however, to restrict progress in achieving the goal of the task by suggesting ‘waiting’ for the defender and so promoting a slow forward approach of the ball carrier.

“Refining the Task”. Despite providing appropriate feedback on two of the critical elements of the 2v1 Pass and Support task the attacking players continued to fail to achieve the goals of the stated task. After trial #8 the coach made a refinement to the task to facilitate a higher percentage of success and reduce the breach in the didactic
contract. This task refinement involved extending the length of the playing area. This adaptation was made at the request of Carla (the defender) arguably with the aim of giving her more time and greater opportunity to steal the tags of the attackers players as they attempt to run passed her. Although Carla could not verbalize in the post-lesson interview why she requested this task refinement one of the attacking players realized its implication. Todd explained that, “She (Carla) has more chance, so if she misses it (the tag), she can go again”. (Todd, post-lesson interview, 2v1 Pass and Support task, lesson 8)

As can be seen in table 4.11. the task refinement strategy of extending the length of the playing area did not improve the success rate of the attackers in performing the goals of the 2v1 pass and support task. When asked why he made the task modification Josh reflected:

I think it would have helped if there was a larger area, she (Carla) was on the right track but I’m just thinking make a larger area, but it would have been helpful for the offensive players if it was larger in like width because if they have a larger area they can have more area to work around the defender. (Josh, post-lesson debrief, lesson 8)

Based on advice from the teacher, Josh made a second refinement to the 2v1 Pass and Support task involving restricting the defender to lateral movement only. Josh’s didactic intent for this refinement was that the offensive players would have more time to make their decisions of where to run and when to pass as they now had a ‘safety zone’ where the defender could not enter and steal their tags. The behaviors of the participants did not align with these goals as during trials 12 and 13 the attackers were observed stopping together at the front of the defenders zone, which allowed the defender to easily
control the space at either side of her and so steal the tags as the ball carrier’s made runs through the zone.

During reflection on the main reasons for the high failure rate of the offensive players during the 2v1 Pass and support task Josh suggested that the choice of defender was the critical variable in the determining the performance outcome of the trials:

I think it was mostly because Carla was doing really, really good at defending. I don’t think it was the ability of our offense to get around them, I think they were doing fine. It’s just Carla is really good at defending. (Josh, post-lesson debrief, 2v1 task, lesson 8)

Josh also proposed that his players had not learned much of the content embedded within the pass and support move. However, his assessments of their gaps in content knowledge were very generic and not reflective of the specific didactic intent of the lesson presented within the pre-lesson teacher brief:

We really need to work on game strategy with our passes and go back to decision-making because right now they don’t really have any strategy, it’s just like run with the ball and get your tag taken, [the players think] oh well it doesn’t matter, but it does matter. I think that the team as a whole is not thinking strategically. They should have a plan and not feeling like they are just winging it because if they just go out there and if you don’t have a plan then your not going to be successful (Josh, post-lesson debrief, lesson 8).

Lesson 9

A Priori Analysis – Teacher’s Intent for the Lesson

During lesson 9 of the unit students were expected to continue to develop their knowledge of strategies for executing a 2v1 offensive overload situations. Specifically, the students were to refine their execution of the basic 2v1 Pass and Support task introduced during lesson 8. To facilitate a higher level of success in executing the task,
than was exhibited in lesson 8, the coaches were instructed to refine the task by restricting the defender to only move laterally to tag the ball carrier:

Some of you were struggling last time, the defender got smart, the defender realized that if they backed up the attacker found it more difficult to draw the player so make the rule that the defender can only move sideways, not forward or back. In the 2 versus 1 the defender can only move sideways. (Claire, lesson 9, pre-lesson teacher brief)

In addition to explaining this task modification for the 2v1 pass and support move the teacher also re-emphasized to the coaches the critical content elements of width in support, timing of pass, and running at pace. This content was explained with visual demonstration as well as verbal explanation:

The key to doing the pass and support move is if I’m carrying the ball I want to commit you to me first [walks to Pat] and then pass it. Say Chas is my partner, we don’t want to be too close together, we want to be a little bit further apart. Also don’t keep passing to each other before the defender comes. The whole point is you want to draw the defender to you as the ball carrier, then when the support player is level or behind, not in front, then we pass it on and he runs on to score. OK, that’s what pass and support is. Some of you didn’t get to that, you need to work at pace. If you jog with the ball the defender has got time to get across, you need to do it quickly. (Claire, pre-lesson teacher brief, 2v1 Pass and Support task, lesson 9)

Once the participants had attempted the Pass and Support task Claire directed the coaches to introduce the “switch move” task. The switch move is a level IV complexity solution (table 4.2.) to the 2v1 offensive overload situation that involves changing the angle of offensive running and executing a well-timed ball carrier turn and pass to the on coming support player. Figure 4.6. illustrates the organization of the 2v1 Switch move. The execution of the “switch” move requires much of the content knowledge embedded in a successful performance of the 2v1 pass and support move.
The ball carrier must run quickly towards space away from the defender, the support player must stay behind the ball carrier, the ball carrier must commit the defender before passing, and must pass the ball with accuracy. The added content knowledge to be learned in the switch task is the change in the angle of running by the attackers, with the attackers running at perpendicular angles to “switch” the point of attack. With this “crossing” motion brings an adaptation in the passing technique, with the ball carrier having to turn away from the defender and towards the support player to provide a short, well-timed pass. The support player must also time their run to coincide with the ball carrier such that as the ball carrier turns to pass, the support player is within approximately 2 yards of the ball. As part of the Sport Education curriculum plan each of the team’s take a turn to act as the ‘duty team’ and fulfill the roles of referees and scorers for the other team’s 4v4 scrimmage games. During the scrimmage games of lesson 8 and 9 Josh’s team were responsible for refereeing and so results of performance in the 4v4 scrimmage games is available.
A Priori Analysis - Coach Intent for the Task

Josh seemed to understand the 2v1 pass and support task adaptation suggested by Claire as during the pre-lesson coach interview he reiterated his intention to “cone off a restricted area that would make the defender be able to only move sideways” (Josh, pre-lesson plan, lesson 9). In addition to restricting the movement of the defender Josh also planned to change the player who was defending. This intended modification was planned to facilitate a greater success for the offense. It was aligned with his reflections from the stimulated recall interview of lesson 8 that the choice of defender was the critical variable in determining the poor performance of the attacking players in the task:

The only real problem maybe that we just need to switch up the players that we had last time so it will run a little more smoothly and our players won’t get discouraged because last time how it worked wasn’t great as our attackers never really scored. (Josh, pre-lesson plan, lesson 9)

Josh did not anticipate any other problems with his players performing the pass and support or switch move solutions to the 2v1 offensive overload tasks. Josh seemed to grasp the value of his players being able to perform a switch move noting:

Well the switch move is so what you’re doing is never repetitive and you don’t always run forward. It gives you more options on offense and really shows you how to incorporate working with your team. (Josh, pre-lesson coach plan, lesson 9)

Despite his comprehension of the relevance of the skill for game-play his understanding of the content knowledge and critical performance elements required to execute the move was misaligned with Claire’s explanation. He was unable to provide detail of the added content knowledge of the difference in passing technique or the timing of the support run necessary for a successful performance of the switch move. When asked for the important coaching points of the task Josh simply read the cues from the
2v1 Pass and Support coaching task card namely, “don’t pass too early, make the
defender come to you and make sure the support player is behind you” (Josh, pre-lesson
coach plan, 2v1 Switch move, lesson 9)

A Posteriori Analysis - Participant Response During the Tasks

Table 4.12. provides a summary of participant opportunities to respond and
performance success rate during lesson 9’s instructional tasks.

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>2v1 Pass and Support (2)</th>
<th>2v1 Switch Move (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Josh         Carla      Todd       Sally      Carrie    Sarah</td>
<td>Overall</td>
</tr>
<tr>
<td>OTR</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Table 4.12. Lesson 9 Participant OTR and Performance Success During Instructional Tasks.

2v1 Pass and Support Task (2)

Josh’s initial organization of the 2v1 Pass and Support task was much quicker
than in the previous lesson and his players were ready to start the task within 20 seconds
of instruction. Josh was also very quick to reinforce the performance element of the ball
carrier running forward quickly away from the defender. As Carla walked toward the
defender on the first trial, Josh stepped in and provided a visual demonstration of running
quickly at the defender and releasing the ball to the support player only when the
defender is committed to the ball carrier.

Table 4.13. provides a trial-by-trial task performance analysis of the participant
behaviors during the 2v1 pass and support task during lesson 9. As can be seen in table
4.13. the demonstration provided by the coach at the end of trial #1 had a positive effect
on both Carrie and Sally’s (C/S) knowledge of moving quickly with the ball as they
achieved their first success at the 2v1 pass and support task. Despite this initial success a
breach in the didactic contract seemed to emerge.

Table 4.13. reveals that after trial#2, despite several coach feedback statements
emphasizing committing the defender, the subsequent 5 trials were all unsuccessful in
achieving the performance objective of the task. Table 4.13. shows that prior to trial #7,
although the students were performing some of the content required for a successful
performance of the 2v1 pass and support move, namely the support player staying behind
the ball (100% success rate) and not passing too early (71% success rate), this knowledge
was insufficient to facilitate consistent success in the task. Failure in the task was
occurring due to inaccurate passing (50% success rate) and the attackers failure to acquire
the content knowledge that they must keep a greater distance between themselves (28%
success rate). This “lack of width” in attack enabled the defender to easily move across to
cover the support player even when an accurate, well-timed pass was made. At the end of
trial #7, observing the consistent failure of the students to accomplish the task, the teacher
provided an accurate demonstration of creating space using the pass and support task.
<table>
<thead>
<tr>
<th>Trial #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>7</th>
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<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
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<td>B/C</td>
<td>Ch/S</td>
<td>B/C</td>
<td>Ch/S</td>
<td>B/C</td>
<td>Ch/S</td>
<td>B/C</td>
<td>Ch/S</td>
<td>B/C</td>
<td>S/L</td>
<td>S/L</td>
<td>B/C</td>
<td></td>
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</tr>
<tr>
<td>Success/Failure</td>
<td>S</td>
<td>S</td>
<td>F</td>
<td>F</td>
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<td>F</td>
<td>F</td>
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<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>F</td>
<td>S</td>
<td>F</td>
</tr>
<tr>
<td>Ball carrier runs quickly towards space (2)</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>T</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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</tr>
<tr>
<td>Support player stays behind ball carrier (3)</td>
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<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td></td>
<td>93%</td>
</tr>
<tr>
<td>Support player stays wide of ball carrier (5)</td>
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<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>47%</td>
</tr>
<tr>
<td>4. Ball carrier commits defender before passing (4)</td>
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<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>87%</td>
</tr>
<tr>
<td>5. Passes accurately (1)</td>
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<td>+</td>
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<td>N/A</td>
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<td>+</td>
</tr>
</tbody>
</table>

Note. © Coach Feedback statement, T Teacher Feedback statement, - Critical Failure element, +/- Successful/Failure to perform content element
Table 4.13. Trial-by-trial Performance Analysis of Participant Behaviors During the 2v1 Pass and Support task, Lesson 9
Claire emphasized the critical content of running forward quickly into space, and keeping distance between the ball carrier and support player:

Right stop, let me show you, as soon as I do this, watch, you ran here (to the middle) and we (the attackers) end up about a yard apart so what do I want to do? I want to take him (the defender) over here (to the right) and then Carla has all that space to run into. See if you run to the space. Run at spaces not faces, don’t run at him. (Claire, lesson observation, 2v1 Pass and Support task, lesson 9)

As can be seen in table 4.13, the demonstration and explanation of content provided by the teacher after trial #7 had a pronounced effect on student success in the pass and support task. Table 4.13 reveals a 40 percent increase in trial success rate from pre- to post-demonstration. Analysis of appropriate performance of specific content elements shows that an increased frequency of the ball carrier running more quickly towards space and committing the defender before passing to the support player were the critical variables explaining the increased level of success in the task. From a didactic perspective the teacher’s intervention ended a significant breach in the didactic contract with the outcome of the CDI being successful with students gaining sufficient knowledge of the content elements embedded within the task to consistently execute the pass and support move.

Evidence from the participant post-lesson stimulated recall revealed that at least one of the participants understood the concept of the timing of the pass and committing the defender. In response to being asked what is critical to success in the 2v1 Pass and Support practice, Todd replied:

Kind of what Josh was talking about in class, draw the defender towards you and then once she’s as close as can be, pass it off so you can have more space to run. (Todd, post-lesson interview, 2v1 Pass and Support task, lesson 9)
Participant knowledge of the critical content of ‘attacking with width’ within the 2v1 pass and support task was also verbalized during the post-lesson stimulated recall interview. Carla (the defender) stated that, in order for the attackers to be more successful, “they needed to spread out more because it’s easier for the defender to close them in”. Carla was the only participant to mention distance between the attackers as being critical for success.

**Switch Move**

Analysis of the percentage of success for the Switch Move task in table 4.12 reveals that this task was problematic for the majority of participants. Josh initially organized the switch task by utilizing the participant positions from the previous 2v1 pass and support task. Josh proceeded to provide a brief explanation of the goal of the task to the offensive players by highlighting his understanding of the fundamental difference in content embedded in the switch move as opposed to the pass and support task. He noted:

> This time we are going to try and beat Carla by using the switch move. In this move, instead of running straight at Carla and passing to the support player the ball carrier runs across her and the support player runs in the opposite direction and we turn and pass the ball as we get in front of her. If you look at the picture we cross each other and pass the ball as we cross. (Josh, lesson observation, 2v1 switch Move, lesson 9)

This initial explanation emphasizes Josh’s understanding of one of the critical differences in content between the pass and support and switch move is the angle of the run of the offensive players and the turning technique of the ball carrier. Josh provided a successful demonstration of the switch task with Todd as his partner, which also included a verbal description of the turn and pass technique.
Table 4.14. provides a trial-by-trial analysis of student responses within the switch move. From the results of the observation it can be seen that the instructional task satisfied the first of Marsenach and Ali’s (1991) requirements of a CDI as most of the students failed (19% success rate) to achieve the learning outcomes expected by the coach, though they cooperated and consistently attempted \( n = 21 \) the task. Table 4.14. also highlights that within the episode Josh attempted via demonstration and feedback to help students learn the content of the task.

The analysis of the performance of each of the content elements embedded in a successful performance of the switch move reveals that the participants transferred some of the content knowledge learned in the pass and support task. The attacking ball carrier ran quickly towards space on every attempt at the task and also the support player stayed behind the ball carrier during 95 percent of attempts. Josh’s initial choice of pedagogy via successful demonstration and explanation of running angle also seemed to be effective in students’ learning of new tag rugby content knowledge embedded in the switch task. His instruction seemed to facilitate the participants’ learning of appropriate running angle and staying support player staying close to the ball carrier as students demonstrated 80 percent or above success rate on both of these performance objectives within the instructional trials.

Despite these successes the outcome of the switch task was unsuccessful for the majority of the participants. The results of the trial-by-trial breakdown reveals that the breach in the didactic contract between the coach and the participants expectations of the content embedded in the task was in the ball carrier’s timing and technique of making the pass to the support player.
The analysis shows that Josh was concerned with his participant’s performance of the technique of turning towards the support player and passing as on five separate occasions he provided them with error correction feedback regarding this content:

Make sure you have a good hold on that ball and pass to the side. Don’t hold the ball behind you turn towards the player who is coming behind you (Josh, lesson observation, switch move, trial # 14).

Josh failed to provide any feedback related to the timing of the pass during the task. This specific performance content was the critical failing element in 40 percent of the performance trials and so was a key explanatory piece of misaligned content knowledge in explaining the participant failure to achieve the goal of the task. In response to this lack of feedback provide by the coach Claire made an intervention in after trial #16 by providing a demonstration and explanation of the appropriate timing of the pass:

Watch, don’t pass too early, Josh you’re my support player. [Claire demonstrates too early pass] If I pass here all she (the defender) has to do is wait and get Josh, what you want to do is get close to her and as your about to get tagged and then release it so she’s committed to me. With a little pop pass, it’s much easier if I present it to you. (Claire, lesson observation, switch move, trial # 16, lesson 9).

From table 4.14. it can be seen that in response to the teacher demonstration the participants appropriate timing of the pass in relation to the position of the defender improved, however, the outcome of the trials were still unsuccessful. The outcome of the CDI was unsuccessful in relation to the goal of performing a switch move to score past the defender. The outcome was unsuccessful due to a critical breach in the didactic contract relating to content knowledge of the appropriate turn and pass technique within the switch move.
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Note. © Coach Feedback statement, T Teacher Feedback statement, - Critical Failure element, N/A Not Applicable fake pass used, +/- Successful/failure to perform content element.

Table 4.14. Trial-by-Trial Performance Analysis of Participant Behaviors During the Switch Move Instructional Task, lesson 9
Lesson 10

_A Priori Analysis – Teacher’s Intent for Tasks_

Based on the students’ inconsistent performance of the switch move during lesson 9 the main learning objective for lesson 10 was for participants to refine their performance of the content elements necessary for the successful execution of a 2v1 offensive switch and fake switch move. Specifically, field notes and observational data from analysis of the switch move instructional task completed in lesson 9 revealed that the attacking players were failing to achieve the goal of the task due to a failure of the ball carrier to consistently perform the pass with appropriate technique and timing. In the pre-lesson coach brief Claire highlighted these specific content learning objectives:

The objectives of today’s lesson is that your teammates are able to perform a well-timed pass, which means when they are about to be tagged they have to draw the defender to them and away from the support players. Two, your peers are able to apply this timing of the pass within the switch move. (Claire, pre-lesson coach brief, lesson 10).

To specifically focus on the content knowledge of when is an appropriate time to make a pass the coaches were instructed to start off with some basic ball possession instructional tasks. These tasks included progressing from a 4v1 to a 3v2 “Keep ball” possession game with the objective of both tasks being to successfully complete ten passes as a team without the ball carrier having their tag stolen. Claire again emphasized within the brief the critical content of timing and “drawing the defender”:

What do you want the attacker to do, to draw the defense to you. If you have the ball you want to draw the defense to you and then make the pass but you want to make sure they are good passes. (Claire, pre-lesson coach brief, lesson 10)

Claire did not elaborate on the technique elements of what it meant to make a ‘good’ pass. The second task planned for the coaches in lesson 10 was a repeat of the
switch and fake switch move task completed in lesson 9. To facilitate a higher level of offensive success in the task the coaches were instructed to refine the task such that the defender could only move sideways. In addition to a repetition of the basic coaching points of the switch move presented to the coaches prior to lesson 9, Claire also included in her brief a specific reference to the timing of the pass element of the task:

Remember with this one don’t pass too early and watch your players. Let them know that you want to wait as long as you can before you pass it off. You want to draw the defense to you. If the defense does not come to you do a fake pass (fake switch move) and run on. (Claire, pre-lesson coach brief, lesson 10)

As with previous lessons the final task planned for lesson 10 was for students to engage in a 4v4 scrimmage game against an opposing team. Claire delineated to coaches her intention that coaches should focus on their players trying to coordinate changes in the angle of attack, “You should tell your players to try and co-ordinate with each other to try and use the switch move in the game” (Claire, pre lesson coach brief, lesson 10).

Claire also stated that when on defense during the game all of the participants should get “onside” quickly after a tagging situation. By emphasizing participants being ‘onside’ Claire was expressing her intent that after a ball carrier is tagged all of the defenders must quickly retreat such that they are in front of the ball. This rule was stated to maintain the flow of the game by preventing the defensive players intercepting the ball as the first pass is made.

*A Priori Analysis – Coach’s Intent for Tasks*

During the pre-lesson coach plan interview Josh expressed his intent during the Keep Ball tasks his offensive players should learn to find an open space to receive the ball. He expressed that they should, “move around so they are open to receive the pass”.

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Table 4.15. illustrates the instructional tasks established by Josh during lesson 10 and the percentage success rate of his teammates within the tasks. The results reveal that during the 4v1 and 3v2 keep ball tasks that were focused on students learning the content of creating an appropriate passing lane and performing a well-timed pass the participants were relatively successful.

The students demonstrated a mean success rate of over 80 percent of passes made within both the 4v1 and 3v2 keep ball tasks. During his initial explanation of the keep ball tasks Josh delineated the goal and rules of the tasks and also verbalized to his players the coaching points from the task card:

This is how it’s going to work, the four of us are going to be attackers and we have to make 10 passes where you [Todd] try to tag us. Alright Carla. So you try and tag us and we have to make 10 passes. When you’re moving keep your head up, look for spaces and if you’re ready to receive make sure your hands are up to receive a pass. Also no overhead passes. (Josh, lesson observation, 4v1 keep ball task, lesson 10)

During initial trials of the 4v1 task the offensive players tended to stand close together with the players adopting a static square formation. This lack of movement of the offensive players did not have the effect of reducing participant success in the task but in fact increased the offensive players success in retaining possession of the ball.

The number of support options available to the ball carrier along with the high percentage of appropriately timed passes allowed the students to be successful without having to move into space. This outcome was misaligned with the coach’s intent for the task so in response Josh stopped the task and moved on to the 3v2 keep ball task.
Lesson 10

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3v2 Keep Ball

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2v1 Switch (Fake Switch) Move

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4v4 Scrimmage Game

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Table 4.15. Lesson 10 Participant OTR and Performance Success during Instructional Tasks.

As can be seen in table 4.15, the students again achieved a high level of success in the task, however, the strategy they adopted to achieve success was different than the 4v1 task. Within the 3v2 keep ball task the support options for passing were limited and thus the constraints of the task forced the offensive players to actively seek space and move into an open passing lane. This content knowledge was reinforced by Josh to his players:

We want to be able pass to each other but not so close that we’re bunched together, alright does that make sense? And if you’re a defender and people are just standing there make them pass by charging them. (Josh, lesson observation, 3v2 keep ball task, lesson 10)
The response from his players was a higher intensity of off-the-ball movement creating more effective passing options. This support movement explains the high level of percentage success in the 3v2 keep ball task illustrated in table 4.15.

_A Posteriori Analysis - Switch Move_

Results of the analysis of opportunities to respond and percentage success in the Switch and Fake Switch Move instructional task during lesson 10 presented in table 4.15. reveals that the performance outcome of the task appeared problematic for both the coach and participants. As in lesson 9 the four offensive players again found it difficult to execute an effective switch move to beat the defender and score past the try line without having their tag stolen. Despite the task lasting over ten minutes of activity time the offensive players were only successful in achieving the goal of the task 8 percent or once in the twelve attempts made. Table 4.16. provides a breakdown of the content elements performed during each trial the switch or fake switch move was completed.

Josh’s initial explanation of the switch move task involved informing his players that it was a repeat of the previous lesson’s task with the modification of restricted defender movement. Josh emphasized the key content elements of running into space and only passing when you have committed the defender:

_We’re doing the thing you guys did last time. Ok you’re going to run on a diagonal (content element #2) and pass when you need to alright? So you pass where you need to (content element #5), she can only move from side to side._ (Josh, lesson observation, Switch move task, lesson 10)

Josh failed to provide an initial demonstration of a successful performance of the switch move. Figure 4.16. shows that Josh’s first attempt at the task with Sally (trial #2) failed due to Josh not running in the appropriate direction and passing too early. After
this performance the teacher provided a slow speed demonstration of the task with an emphasis on the angle of run (content element #2) and passing timing (content element #5):

The first move is a switch move where I get close to the defender and pass. If she [Carla] doesn’t come to me as I’m running on a diagonal across her (content element #2) I’ll fake to pass (fake switch move) and run on. The object is to try to get to that try line. (Claire, lesson observation, 2v1 switch move, lesson 10)

Analysis of subsequent (post trial #2) participant performance of the content element of running at perpendicular angles (table 4.16.) reveals that this teacher intervention was successful in aligning the students’ learning with that of the intent of the task. Table 4.16. shows that the content element causing the failure in the students performance of the task was the inappropriate timing of the ball carrier’s pass to the support player. Josh failed to provide any feedback to his peers within these attempts. Evidence from the post-lesson stimulated recall of these trials revealed that Josh did not give appropriate feedback as he did not fully understand why the offensive players were failing. When asked why Carrie and Sally were not successful in trial #4 he replied:

They got tagged. I think it wasn’t because they weren’t doing the correct thing. Once again I had a problem telling people no and stuff and Carla being the defender again. One of her greatest strengths is that she is good at defending but that does not necessarily make it good for our offense. (Josh, post-lesson interview, switch move, lesson 10).

In response to the persistent failure at achieving the goal of the task during trials 1 to 5 the participants playing offense modified their strategy for subsequent trials at the task by not attempting the pass instead opting for the fake switch move.
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<tr>
<th>Trial #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>Participants</td>
<td>S/C</td>
<td>Ch/B</td>
<td>Ch/S</td>
<td>C/B</td>
<td>Ch/S</td>
<td>B/C</td>
<td>Ch/S</td>
<td>B/C</td>
<td>Ch/S</td>
<td>B/C</td>
<td>Ch/S</td>
<td>B/C</td>
<td>% Success</td>
</tr>
<tr>
<td>S/F</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
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<tr>
<td>Run forward (2)</td>
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<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>83%</td>
</tr>
<tr>
<td>Angle of Support (9)</td>
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<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>83%</td>
</tr>
<tr>
<td>Behind support (3)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>+</td>
<td>+</td>
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<td>92%</td>
</tr>
<tr>
<td>Support distance (5)</td>
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<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>75%</td>
</tr>
<tr>
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<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>50%</td>
</tr>
<tr>
<td>Accurate pass (1)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>57%</td>
</tr>
</tbody>
</table>

Note. © - Coach Feedback statement, T - Teacher Feedback statement, ¬ - Critical Failure element, N/A Not Applicable (fake switch move utilized), +/- Successful/failure to perform content element.

Table 4.16. Trial-by-Trial Performance Analysis of Participant Behavior During 2v1 Switch (Fake Switch) Move task, lesson 10
Using this solution the attacker must convincingly fake to pass to the oncoming support player at the appropriate time and then continue to run with the ball passed the defender to the try line. Table 4.16. reveals that the participants’ execution of the fake switch move was again problematic. Four out of five (trials 6, 7, 9, 11 and 12) attempts at the fake switch move failed due to the attackers failing to provide a convincing fake move and the defender anticipating and stealing the flag of the ball carrier. Although this breach in the didactic contract was not detected during the lesson the coach was able to diagnose the problem during the post-lesson debrief:

They weren’t quick enough and they didn’t make it look convincing that they were going to fake it. Part of that switch move is to confuse the defensive player to who has the ball. They kind of slowed down and stopped and gave the ball up due to low agility. (Josh, post lesson debrief, switch move, lesson 10)

An analysis of the performance of content elements in trials 6 to 12 (table 4.16.) revealed that Josh’s rationale for the failure of the “fake switch move” was inappropriate support player position and poor timing of the ball carrier’s fake maneuver. The comprehension of this critical piece of content knowledge embedded in a successful execution of a fake switch move was exhibited by Carla (the defender) during the post-lesson interview. When asked what is important to be successful in the task she responded:

I think that they would want to get really close to me then fake because I would have more concentration on the one with the ball than the person who didn’t. They were waiting or passing way too early so I know who had the ball. (Carla, post-lesson debrief, switch move, lesson 10).

This critical knowledge of the timing element of the pass or fake pass within the switch move does not seem to have been learned by the other team members of the group. Josh demonstrated that he understood the importance of this piece of content.
knowledge by providing generic feedback regarding its implementation during the instructional task:

Alright, hold on a second the problem with this is only pass when you need to. So me and Todd are going and Carla is going to come and attack my flag I’m going to pass right when she’s going for me. So I turn this way to Todd and she takes my flag, only pass when you need to pass because you have to. (Josh, lesson observation, switch move, lesson 10)

Despite demonstrating his understanding of the relevance of this specific content knowledge to the successful execution of the switch move he seemed unable, over the two episodes, to effectively communicate to his peers how to perform the content knowledge within the 2v1 task situation. The result was that many of the participants did not learn this critical piece of content were subsequently unsuccessful in executing either a 2v1 switch or fake switch move during practice.

Analysis of the 4v4 scrimmage game task in table 4.15. revealed that within the game there were zero occurrences of Josh’s team attempting to implement a switch move on offense. When a change in angle of running was demonstrated by the ball carrier it was made in an attempt to specifically carry the ball forward into space and not to coordinate with a support player to alter the angle of attack. Analysis of timing of the pass within the game shows that, when carrying the ball and choosing to make a pass to a support player, on only 13 percent of occasions did the ball carrier pass after committing the defender.

Lesson 11

A Priori Analysis- Teacher’s Intent for Task

The focus of lesson 11 was for students to refine their tactical decision-making skill when on offense in an opposed game-based situation. Specifically, the students were
expected to refine their knowledge of appropriate timing of a pass and support position when engaged in a game-based practice situation with the added complexity of more players. The instructional task designed to develop this knowledge was a 3v2 offensive overload “Moving it Wide” practice and a 4v4 scrimmage game. The performance objective of the 3v2 task was for the three offensive players to maintain possession of the ball and score across a try line without either of the two defenders stealing the ball carrier’s tag or the ball being passed forward or dropped. Figure 4.7. illustrates the organization of the 3v2 “Moving it Wide” instructional task.

![Figure 4.7. Organization of “3v2 Moving it Wide” Task.](image)

The task is organized such that all five of the participants start at a marker cone located at the center of the start line. On the coach’s command the three attackers and two defenders run around their respective corner cones. Once around the cones the objective of the attackers is to try to and score a try across line A-B past the two defenders. The
The objective for the defenders is to disrupt the attack by either stealing the tag of the ball carrier or forcing the attackers to drop the ball or make a forward pass. If any of these scenarios occurred the outcome of the trial was determined to have been a failure and the task restarted.

The strategy presented to the coaches to solve the tactical problem of three attackers against two defenders within this specific scenario coaches was to isolate the second defender against the two attacking support players and then precede to execute an effective 2v1 pass and support move. To isolate the second defender the ball carrier needed to commit or draw the first defender to them before executing an accurate lateral pass to the first support player. To create space for the subsequent 2v1 pass and support move the initial ball carrier needs to run forward and not diagonally across the support players prior to release of the pass. A diagonal run serves to close down the space available for the support players to execute the 2v1 pass and support move. To execute the 2v1 pass and support move the two attacking support players must commit the second defender by the first receiver running forward and performing an appropriately timed pass. The second support player must maintain a sufficient distance away from the ball carrier to create enough space to run into once the final pass is made. For this strategy to be successful the whole task needs to be performed quickly such that the defenders do not have time to cover more than one of the attackers. As with all of the offensive overload practices, the basic rule applies that if the defender does not commit to the ball carrier the offensive player should carry on running towards the try line. Claire’s pre-lesson coach brief served to emphasize to the coaches many of these performance elements, with the
exception of the running angle of the initial ball carrier, which was misaligned with the
design of the task:

So when the coach yells go, the attackers are going to come up, attacker 1 is
going to come first [Claire draws route on board as a diagonal], the next one and
the next one is going to come out to the outside. Number 1 is going to have the
ball and their goal is to make a pass, their trying to draw the defender so the
defenders are going to come up. Defender 1 is going to defend number 1, and
defender 2 is going to defend number 2. In the process, this has to be done quickly
on offense. The person with the ball wants to draw the defense, you want to try
and get the defense to come to you and after that you are going to pass it off. If
you have the ball you want to draw the defender and your goal is to pass it to
player 2. (Claire, pre-lesson coach brief, 3v2 Moving it Wide task, lesson 11)

Claire highlighted to the coaches the primary importance of the ball carrier
looking for the positioning of the defender before deciding to make the pass, “If they (the
defender) don’t come up and you have an open space you try and score” (Claire, pre-
lesson coach brief, 3v2 Moving it Wide task, lesson 11).

The content knowledge elements embedded in the 3v2 Moving it Wide task are
congruent with those of the 2v1 Pass and Support move practiced during lessons 8 and 9.
The ball carrier must run forward quickly into space, they must commit the defender to
them before passing and they must make an accurate lateral pass. The attacking support
players must keep distance between themselves to create width in attack and stay behind
the ball carrier in an offensive line. To explain this content knowledge to the coaches
Claire read to the coaches the coaching points printed on the coach task card:

Then a couple of coaching points for this, don’t run across your own players, run
forwards (element #2). Draw the defender to you (element #4) and pass quickly
like I talked about. Support players don’t lag behind stay close to the ball carrier.
Support players run on the outside. Support players should be in a line and
look where are you passing. (Claire, pre-lesson coach brief, 3v2 Moving it Wide
task, lesson 11)
This explanation highlighted content elements 2 and 4, however, the statement of “support players staying close to the ball carrier” may be misaligned with the intent of having the offense spread out and “moving it wide”.

_A Priori Analysis – Coach’s Intent for the Task_

Although Josh understood the goal and organization of the 3v2 Moving it Wide instructional task he did not seem to assimilate all of the content elements embedded within the task within his plan for the upcoming lesson. When asked during the pre-lesson coach plan interview what he perceived the key elements to success in the practice he simply replied, “staying together, passing and to keep moving”. This interpretation seemed to reflect an over generic interpretation of the very specific content knowledge required by his teammates to be consistently successful in the task.

When asked what his focus would be for coaching within the final 4v4 scrimmage game Josh highlighted his intention to emphasize “more passing” and “working as a team to stay in a line on offense”. This didactic intent was congruent with the aims of the lesson delineated by the teacher within the pre-lesson coach brief but no with the intent of the design of the task.

_A Posteriori Analysis - Student Response to the Tasks_

Results of success rate during the 3v2 Moving it Wide task reveal that the performance goal of the three attackers beating the two defenders to score passed the try line without having their tags stolen was problematic for all participants. Table 4.17. shows that only 36 percent of the eleven trials at the task were successful in meeting this performance outcome. This persistent failure to achieve the learning outcomes expected
by the student coach occurred despite the participants’ cooperation and consistent
attempts at the task. Table 4.18. provides a trial-by-trial breakdown of the participant
behaviors within the 3v2 Moving it Wide task. The results reveal that the repeated pattern
of failure at the task occurred despite intervention provided by the student coach to help
the participants learn the content of the task.

### Table 4.17. Lesson 11 Participant OTR and Performance Success During Instructional Tasks.

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>3v2 Moving it Wide</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Josh</td>
<td>Carla</td>
<td>Todd</td>
<td>Sally</td>
<td>Carrie</td>
<td>Sarah</td>
</tr>
<tr>
<td>OTR</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>DNP</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>38%</td>
<td>33%</td>
<td>20%</td>
<td>29%</td>
<td>40%</td>
<td>36%</td>
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</table>

### Instructional Task
#### Lesson 11

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ball carrier runs forward to create space for support players</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTR</td>
<td>9</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>DNP</td>
</tr>
<tr>
<td>Percentage Success</td>
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<td>0%</td>
<td>17%</td>
<td>14%</td>
<td>66%</td>
<td>22%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ball carrier commits defender before passing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTR</td>
<td>9</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>DNP</td>
</tr>
<tr>
<td>Percentage Success</td>
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<td>100%</td>
<td>17%</td>
<td>29%</td>
<td>66%</td>
<td>44%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Offensive support players adopt a behind, wide support position</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTR</td>
<td>24</td>
<td>9</td>
<td>19</td>
<td>29</td>
<td>30</td>
<td>DNP</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>87%</td>
<td>77%</td>
<td>53%</td>
<td>65%</td>
<td>46%</td>
<td>64%</td>
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</table>

The coach and teacher provided post-trial feedback to the participants nine times
across six different trials (trial #s 1, 2, 3, 5, 8, 11) in relation to three of the five content
elements embedded within the delineated solution to the 3v2 offensive overload problem. This evidence suggests that there was a significant breach in the didactic contract between the intended learning goals of the task and the participant performance in the 3v2 task and the categorization of the task as a critical didactic incident. This breach seemed to be caused by a lack of clarity in the teachers pre-lesson explanation of the content elements of running forward into space (#1) and keeping distance between support players (#4) and the resultant coach misconception of this content which was not emphasized to the participants during the task trials.

3v2 Moving it Wide Task. The start of the episode occurred with Josh’s initial explanation of the 3v2 task to his peers. His initial verbal explanation included his interpretation of the goal and organization of the task:

The three attackers when I shout go your going to run around a cone and the 2 defenders are going to come at you. Your goal is to get across this line (points horizontally). Three people because your all going at once, everybody runs at once. Let’s say me, Carla and Carrie all are the attackers. I have the ball since I am the first one. When the defenders come I have to pass to Carla and Carla has to be able to pass to Carrie and eventually we have to go across that line to score. But the point is we have to move wide but we can still pass and communicate but still pass at the right time and move as a team. And so that’s why it’s called moving it wide because the attackers are going wide. (Josh, lesson observation, 3v2 Moving it Wide task, lesson 11).

Josh then continued to provide information on the content knowledge embedded in the task by reading from the coach’s task card,

Just a few rules of thumb don’t run across your own players, run forwards element #1). If you’re an attacker you want to make sure that the defender gets as close to you as possible and locks onto you before you pass the ball (element #2), that way they’re distracted and are not ready to go to the next person. So support players you want to stay in line with the ball carrier (element #4), if you lag behind it will ruin your whole thing and you won’t be able to get the ball. Support players should be in line and look where your passing (element #5). So make sure
you have an eye contact with the person so you know I’m going to get the ball.
(Josh, lesson observation, 3v2 task, lesson 11)

Although much of the content presented in the initial explanation was aligned
with the appropriate solution to the task the quantity of information presented and lack of
demonstration provided seemed to confuse the participants. In response to the exhaustive
explanation Carla requested that Josh provide her with a demonstration, “If I see it I’ll be
able to do it”.

Josh proceeded to provide a “virtual reality” demonstration of the offensive
solution to the task by taking the place of all of the three offensive players as he gestured
the sequence of moves involved in the execution of the task:

Say my 2 players are standing next to me [Josh moves over to start point] I’m
going to run and they’re both here and we’ve spread out though [Josh uses
gestures] and you [Carrie] come running towards me to steal my flag I’m going to
pass to him right in turn [Josh becomes 2nd attacker] and so he’s got it and then
someone else is coming so he’s going to pass to him until he runs [Josh becomes
third attacker] to cross the line to score. Do you understand what I’m saying?
(Josh, lesson observation, 3v2 task, lesson 11)

The early trials at the task provided evidence that the Josh’s “virtual”
demonstration had reinforced to the offensive players that they must spread out in a line
and pass along to the next person in the line once they have committed the defender. This
specific content was performed during the first two trials of the task (table 4.18.).
Analysis of the trial-by-trial observation of participants’ performance in the task reveals
that despite performing these appropriate content elements the outcome of the task was
unsuccessful. The critical element causing the failure (trials 1-4) was the ball carrier’s
inappropriate angle of running.
<table>
<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>9</th>
<th>10</th>
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<th>Total</th>
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<tbody>
<tr>
<td>S/F</td>
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<td>S</td>
<td>S</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
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<td>S</td>
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<td>F</td>
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Content

Run Forward (1)

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<th>Run Forward (1)</th>
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Commit Defender (2)

<table>
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<tr>
<th>Commit Defender (2)</th>
</tr>
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<tbody>
<tr>
<td>+</td>
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</tbody>
</table>

Behind Support (3)

<table>
<thead>
<tr>
<th>Behind Support (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
</tr>
</tbody>
</table>

Distance Support (4)

<table>
<thead>
<tr>
<th>Distance Support (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
</tr>
</tbody>
</table>

Accurate Pass (5)

<table>
<thead>
<tr>
<th>Accurate Pass (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
</tr>
</tbody>
</table>

Note. © Coach feedback statement, T Teacher feedback statement, - Critical Failure Element, +/- Success/failure to perform content element.

Table 4.18. Trial-by-Trial Task Analysis of Participant Behavior During the 3v2 Moving it Wide Task, lesson 11
The diagonal angle of running adopted by the first ball carrier had the effect of decreasing the space that the support players had to move once they received the ball as it drew the defenders towards instead of away from the attacking support player. The lack of specific feedback provided by Josh related to this content element suggests that although he initially read to his peers to, “run forward” his understanding of this content is aligned with the teachers inaccurate pre-lesson explanation.

In response to the attacking players failures to successfully perform the task Josh provided feedback related to the timing of the pass. This feedback was appropriate to the observed performance but did not diagnose the critical failing element of content knowledge required for the offensive players to be more successful:

We were not spread out enough and organized and two, we stopped moving. We have to be spread in a line and keep with each other, alright? (trial #2). Anyway when we’re doing this we have to stay in a line very spread out like 4 feet apart. And never ever stop moving, keep moving always, always (trial # 5) (Josh, lesson observation, 3v2 task, lesson 11).

Table 4.17. reveals that during the trials of the 3v2 task Josh never demonstrated an appropriate running behavior as a ball carrier participant and until trial #11 did not provide any feedback to his peers relating to this content. Josh’s was unable to provide the most relevant error detection feedback to reduce the breach in the didactic contract between the goals of the task and the performance of the participants as his content knowledge of the angle of running of the ball carrier was misaligned with the content required to be successful in the task and his own explanation from the task card.

In response to the persistent failure of the offensive players to achieve the goals of the task after trial #8 the teacher provided the group information regarding the
appropriate running angle of the ball carrier. This feedback was presented in the form of quizzing the participants regarding their knowledge of the specific content:

If I’m ball carrier where should I run? [Claire], [Carrie and Josh point to the diagonal]. If I run across here I force all of my support players over there, where’s the space that I should run into really? [Carla points to correct direction]. [Claire demonstrates run]. Draw the defender here and that gives much more space outside. Do you understand if I run across I cut off all my support players, don’t I? [Claire]. (Claire, lesson observation, 3v2 task, lesson 11)

Analysis of the performance in the task in table 4.17. reveals that after the teacher feedback was made2 of the three final attempts at the task were successful. The teacher’s appropriate error detection after trial #8 served to reduce the breach in the didactic contract between participants’ knowledge of the task and the knowledge embedded in a successful performance of the task.

During the stimulated recall interview on the performance of his team during the 3v2 Moving it Wide instructional task Josh reflected on his misunderstanding of the content related to the ball carrier running angle:

I didn’t explain it well enough. You should run around the cone in a line and then as a line move forward. When the defender comes to you, you pass it to the next person and then the next one needs to pass it to the next person in line and the last one scores. (Josh, post-lesson interview, 3v2 task, lesson 11)

In the post-lesson participant debrief Sally, Todd and Carla provided evidence that during the episode, in addition to learning timing of the pass and offensive support position, they had acquired the knowledge of appropriate running angle. Sally commented within the debrief that during the task “the ball carrier should run towards the first defender so as to draw then towards the ball”. When probed on why this performance element is important in the game Todd provided evidence of his knowledge of the relevance of the ball carrier’s running angle to creating space for the support
Despite learning much of the content knowledge embedded within the 3v2 instructional task the transfer of these specific behaviors to the 4v4 game varied dramatically. Table 4.17 reveals that the participants adopted good support positions for the offensive ball carrier during 64 percent of occasions. The transfer of knowledge from the 3v2 of appropriate response when in possession of the ball was not as apparent. The ball carrier performed a well-timed pass in relation to the first defender during 44 percent of the opportunities provided to respond. The occurrence of the ball carrier moving forward with the ball to create space for the support players was distinctly low at 22 percent of the OTRs.

Lesson 12

A Priori Analysis – Teacher’s Intent for the Task

The primary learning objective for lesson 12 was for students to continue to develop their repertoire of strategies for creating space in attack. The specific focus for the lesson was for student coaches to introduce an alternative offensive support movement strategy with the aim of creating more 2v1 offensive overload situations. The instructional task selected by the teacher to develop this content knowledge was the 2v1 “loop” move and an application task of the content within a 4v4 scrimmage game. Figure 4.7 provides a diagrammatical representation of the 2v1 loop move task.

As with previous offensive overload tasks the goal of the 2v1 loop move task is for the two attackers to carry and pass the ball around the single defender to the try line A-B without the ball carrier having their tag stolen or the ball being dropped or passed

players, “Because you draw the defenders towards you and away from everyone else” (Todd, post-lesson participant debrief, 3v2 task, lesson 11).
forward. In common with the 2v1 pass and support move the initial movement of the ball carrier is to run forward and away from the defender in order to commit the defender to them. Having committed the defender, the ball carrier executes an accurate, lateral pass to the support player who is within 3 to 5 yards distance of them.

![Diagram of "2v1 Loop Move" Task]

**Figure 4.7.** Organization of the “2v1 Loop Move” Task.

The initial ball carrier then quickly moves or “loops” around the back of the support player to receive back the ball from a lateral pass and run forward to the try line. If performed quickly and accurately the loop move has the effect of creating an extra player on offense and isolating the defender. To execute this move effectively much of the content knowledge learned in previous offensive tasks needs to be performed. The initial ball carrier must run forward and not across towards the support player and they must only make the accurate pass when the defender is committed to them. If the defender decides not to commit to the offensive ball carrier the offensive player should continue to run towards the try line. The additional content knowledge provided by the
loop task is the decision to continue to support the ball receiver by performing a quick run around the back of the receiver once the pass is made.

During the pre-lesson teacher brief, Claire described the goal and organization of the loop move by reading from the coaches task card:

We’re going to have one ball per pair of attackers, the ball carrier runs toward the defender and draws the defender to them, Number 2, passes to the support player but not too early. Just like what we did before in all the other skills, you want to make sure you pass it at a certain time. Three the ball carrier then loops behind the support player to create an extra player on offense. Number 4 player support player draws defender and passes to loop player who is coming around the shoulder. (Claire, pre-lesson teacher brief, 2v1 Loop move, lesson 12)

She then provided her own verbal synopsis of the content embedded in the task:

So you have your defensive player, you have two offensive players and the person with the ball is going to run at the defender. They are going to make a pass and then what happens from there is the ball carrier loops behind the support player to create an extra player on offense. So if I pass it I’m going to go behind the person I just gave the ball to, does that make sense, OK? (Claire, pre-lesson teacher brief, 2v1 loop move, lesson 12)

*A Priori Analysis – Coach’s Intent for the Task*

Despite the apparent clarity of the explanation provided by Claire within the prelesson coach plan interview Josh reflected within the pre-lesson coach plan interview that was initially unsure of the goal of the loop task, “That one I was confused a little bit, I can’t really say. I’m going to have to flip back and take a look at the sheet”. On reviewing the task sheet Josh clarified his didactic intent for the task that the critical content of the task was for the ball carrier to get behind the support player once the pass is made, “Basically after you have passes to one person go behind them and then you will always have a person to pass to as your moving across the area you’re playing in” (Josh, pre-lesson coach plan, 2v1 loop move, lesson 12). Josh went on to describe that his
coaching focus within the loop task was to help his teammates learn to, “immediately get behind them, be ready for the pass and not to pass too early”. What was unclear from the pre-interview was if Josh had misinterpreted the loop move as the player going directly the ball carrier as opposed to running around the back of the player and creating space with width.

When asked if he anticipated any problems with his teammates performing the tasks, Josh stated that did he did not anticipate many problems with his participant’s execution of the task as long as they listened to his initial explanation. The only potential problem he thought may arise was if the players moved too slow. His intended adaptation to this scenario was to make the defender stationary.

_A Posteriori Analysis - Student Response to the Tasks_

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>2v1 Loop Move</th>
<th>4v4 Scrimmage Game</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Josh</td>
<td>Carla</td>
</tr>
<tr>
<td>OTR</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>25%</td>
<td>37%</td>
</tr>
</tbody>
</table>

Table 4.19. Lesson 12 Participant OTR and Performance Success During Instructional Tasks.

Table 4.19. reveals that many of the students participating on offense in the 2v1 loop move task were unable to consistently achieve the goals of the task. In only 31
percent of the trials did the two offensive participants perform an appropriate strategy against the single defender to successfully score a try. These successes were as a result of Todd’s trials who was successful in beating the defender on both of his trials. During these successful trials Todd did not execute a loop move, instead he utilized a fake pass and change of pace to beat the defender. During fifteen minutes of the 4v4 game play application task only on a single occasion out of a possible thirty total opportunities to respond did the ball carrier perform a loop movement behind the receiver after the pass was made.

From table 4.20. it can be seen that multiple attempts were made by both the student coach and the teacher to provide feedback (trial #’s 6, 7, 10, 12, 14) to participants during the 2v1 loop move task. Alternative methods of presentation were utilized by Josh, including change of defender (trial #4), error detection feedback and demonstration (trial #14). Despite this behavior the outcome of the task was unsuccessful. These descriptive data supports Marsenach and Ali’s (1991) criteria for a critical didactic incident.

**2v1 Loop Move Task as a CDI.** Josh’s initial explanation of the 2v1 loop move task involved him providing a prolonged explanation and a visual demonstration of the movement of the offensive players (with Carla) during his verbal commentary:

OK you 4 are going to be attackers, let me demonstrate what we’re going to do. Two of the attackers go at a time and one of the defenders will go to get them and I’ll throw it to Carla. We’re still moving the whole time [Carla moves forward] and I’m going to move behind her so she can throw it to me and then she’s going to go behind me as we were moving forward and I’m going to pass it back to her as we progress. (Josh, lesson observation, 2v1 loop move, lesson 12)
The demonstration did not provide a clear representation of the appropriate loop movement. Although did run around and not directly behind the receiver he did not accentuate this aspect by failing to provide lateral width from the ball carrier once he had run around the back. He did not include the ball within the demonstration and also failed to break down the movement into discrete performance elements. This poor demonstration seemed to confuse his teammates. As a response to the demonstration Carrie stated her interpretation that it was, “like Indian file” with the assumption that the attackers are lined up behind each other and take it in turns to have the ball. This misinterpretation is explained by Josh’s poor demonstration and his use of “get behind” as the critical cue for the loop move. Carrie’s misconception of the loop content in the task does not reinforce the basic principle of the move that the support players are lateral and beat the defender by creating space with width.

Table 4.20. reveals that the first four trials of the 2v1 loop task were all successful in achieving the goal of the task, namely, to carry the ball across the try line without ball carrier having their tag stolen. Many of these early trials did not include the ‘loop’ move strategy. Trials 1, 3 and 4 involved the initial ball carrier performing a fake pass move and then sidestepping around the defender. Although a valid solution to the problem of a 2v1 overload situation this response was not aligned with the coach’s intent for the task. To reduce the opportunity for the ball carrier to beat the defender by performing the fake pass Josh opted to change the defender to one of his faster players (Todd). Josh’s instructions to Todd were to, “be very aggressive”.

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<table>
<thead>
<tr>
<th>Trial #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>13</th>
<th>14</th>
<th>15</th>
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<tbody>
<tr>
<td>Participant</td>
<td>L/S</td>
<td>C/Ch</td>
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<td>C/</td>
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↑ Change of Defender

*Note. +/- Successful/failure to perform content element, N/A content element not applicable to trial due to failure prior to successful first pass, - Critical failure element of trial, © Coach feedback statement, T Teacher feedback statement*

Table. 4.20. Trial-by-Trial Task Analysis of Participant Behaviors During the 2v1 Loop Move Task, Lesson 12
Evidence from the post-lesson debrief interview suggested Josh made this modification as he wanted to make the task more difficult for the offensive players so as not to allow them the easier option of performing the fake pass and sidestep,

I switched Todd with Sally as defender as Sally wasn’t being as aggressive as she could have been and I wanted for them to kick it up a notch. (Josh, lesson observation, 2v1 loop move, lesson 12)

Table 4.20. illustrates that this modification had a dramatic impact on the task performance success rate with the subsequent ten offensive trials of the task being unsuccessful in the offensive players attempts to score a try. The analysis of performance of the content elements required to successfully perform a loop move in table 4.21. show that the two elements performed least successfully within the task were the ball carrier passing accurately (50 percent success) and the ball carrier looping around the back of the receiver (40 percent success). During the latter trials of the task both the coach and the teacher’s error detection feedback were directed at players’ performance of the ‘loop’ content element (trials #7, 10, 12 and 14). This feedback was relevant to the errors exhibited by the attacking players within the trials. However, within many of the trials the ball carrier did not get the opportunity to perform the loop move due to mistakes made earlier in the performance. Within these trials the performance of the loop move was not applicable (N/A).

During eight out of the final eleven trials of the task, the offensive players failed to make a successful first pass to the support player and therefore did not allow the ball carrier the opportunity to perform a loop move. The reasons for this failure were poor performance of content that had been learned earlier in the unit, including poor passing accuracy (explained 50 percent of failed attempts) and timing (explained 20 percent of
failed attempts). After trial #14 the teacher provided a demonstration of the breakdown of the elements of a 2v1 loop move with Josh as the support player:

Let me be the ball carrier, Todd go defend, Josh you’re the support player, watch. Spread out Josh [Josh goes further away as support player]. Draw the defender [Claire walks towards Todd, Josh looks to go behind Claire]. Wait there Josh, OK pass it because I’ve drawn the defender, Todd then goes to Josh and I run around. Let’s do it a bit quicker. [Claire successfully demonstrates move at full pace]. (Claire, lesson observation, post-trial #14, 2v1 loop move, lesson 12)

The teacher’s demonstration seemed to reinforce the intended movement pattern required by the offensive players following the teacher demonstration, Carla and Sally produced their first successful performance of the loop move (trial #16).

During the post-lesson interview Josh’s reflected that his perception of the causality for the generally poor performance of his offensive players on the 2v1 loop was again the high intensity of the defensive player. He commented:

He [Todd] was really going towards them, which meant that they had to have an awareness of space and of where you can pass the ball and how to get around him. (Josh, lesson observation, 2v1 loop move, lesson 12)

He continued to state that on reflection the change in the defender did not help his teammates learn the loop move:

It was over the point where it needed to be and was so high (too fast) that we were unsuccessful at the loop move. (Josh, lesson observation, 2v1 loop move, lesson 12)

During the post-lesson stimulated recall interview of the participants performance in the 2v1 task several of the players reflected that they had not performed well on offense. Reasons provided by the participants for this failure included a lack of width in attack and not moving quickly:
We didn’t spread out so there wasn’t any open space for us to pass the ball and we needed to move faster. (Sally, Carla post-lesson participant interview, 2v1 loop move, lesson 12).

These reflections, although valid to the performance observed highlight the participants attempts to utilize previously learned content to explain their failure in the new task. When prompted as to why they failed to perform the task more effectively, when they understood the nature of their mistakes, the participants commented:

We probably got bored of it because we had to keep re-doing it over and over again. (Carla, post-lesson participant interview, 2v1 loop move, lesson 12).

None of the participant’s reflections included reference to inadequate performance of the ‘loop’ movement of the ball carrier after the pass. This evidence along with the lack of attempts by the performers to initiate a loop move during the 4v4 game suggests that this content knowledge was not learned during lesson 12.

Lesson 13

A Priori Analysis

The teacher intent for lessons 13 and 14 of the Sport Education unit was for the student coaches to choose the practices for their teammates. The teacher’s brief to the coaches prior to the lesson was that they would have fifteen to twenty minutes to complete the instructional tasks and then the group would engage in 4v4 scrimmage games as part of the Sport Education formal season:

I want you to have at least one warm-up practice and one coaching practice. Look at the coaching practices that you have done that your team has struggled with and decide what tasks and knowledge you are going to coach. (Claire, pre-lesson teacher brief, lesson 13).
Coach’s Intent for the Tasks

Josh emphasized that his team was weak on passing during the game and specifically, knowing the appropriate time to pass. To work on developing his players’ ability to apply this content knowledge he decided to have them participate in the 3v2 Moving it Wide instructional task presented in lesson 11.

“Well I was going to do the 3v2 and to make sure the ball carrier passes as they about to get tagged” (Josh, pre-lesson coach plan, lesson 13). When asked the critical performance elements his players must show to be successful in the task Josh seemed to understand many of the facets of appropriate decision-making in a 3v2:

I want the ball carrier to pass when they are about to be tagged (element #4). The ball carrier should only pass the split second they are going to be tagged so the defender is only focused on them and so the person passed to can quickly score. I want the support players to stay behind the ball carrier (element #3) and they should be looking for open space (element #5) and places to receive the pass. Also if the defender is not going to come to you then run passed them and take advantage of the situation (element #2). (Josh, pre-lesson coach plan, lesson 13)

Josh anticipated that one of his teammates, Sarah, would struggle to be successful in the task as she could not remember to stay behind the ball carrier. Josh also suggested Carrie would have a problem receiving the ball as he perceived she often was not ready to receive the ball, “I mean Sally usually passes to Carrie and she won’t be looking and with Carrie it usually hits her and they get frustrated with each other”. Josh also planned on adapting the 3v2 task to focus on evading maneuvers:

What I’m thinking of doing is making it so that one defender is stationary and only two attackers go out instead of three. Making it 3 versus 2 but working with three defenders and one of them stationary so that the ball carriers work on swerving moves (Josh pre-lesson coach plan, lesson 13).
A Posteriori Analysis – Student Response to Instructional Tasks

Table 4.21. displays the OTR and percentage success rate of the participants during the tasks established by the student coach during lesson 13. Results of the analysis of offensive success rate in the 3v2 to a try line task reveals that the attacking players found the goal of avoiding being tagged and scoring past the two defenders problematic. Josh’s initial organization of the 3v2 task involved dividing the five players into three defenders and two attackers and then providing his expectation of player performance for the three attackers, “Remember your going to pass behind you and stay behind the ball carrier, also don’t pass the ball until someone tries to tag you” (Josh, lesson observation, 3v2 task, lesson 13).

During initial trials of the task the offensive players were moving too slowly carrying the ball forward with the effect that the defenders were able to easily close down the space the attackers were attempting to create by making a lateral pass.

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>3v2 to a Try Line</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Josh</td>
</tr>
<tr>
<td>OTR</td>
<td>Coach</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>13%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2v3 (Static Defenders)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
</tr>
<tr>
<td>Percentage Success</td>
</tr>
</tbody>
</table>

Table 4.21. Lesson 13 Participant OTR and Performance Success During instructional Tasks
As Josh had anticipated during the pre-lesson interview, Sarah was adopting a support position that was in front of the ball carrier. Josh detected this error and responded by giving specific feedback, “Sarah always stay behind the person with the ball”. During the fourth trial of the task, the three attackers made a successful performance at moving it wide to score, with each of the players passing the ball quickly to a lateral support player once the defender was committed. Despite this success the following four trials were unsuccessful as a result of the failure of the attacking players to run forward quickly enough to commit the defenders and not providing any width in support to create space. Josh stopped the practice and, based on the advice of the teacher, adapted the task to make the area wider, “We’re moving too slow, this is supposed to be at game speed. We’re going to try it this way now because you need a wider space, so make sure you [attackers] spread out”. (Josh, lesson observation, 3v2 task, lesson 13).

The task adaptation had the desired effect of creating more space for the attackers to run into, however, the subsequent trials was unsuccessful due a breach in the didactic contract of players not running forward quickly when receiving the ball.

In response, Josh provided feedback to Sarah, who was usually the attacker to be tagged, feedback related to running forward when she received the ball. “Sarah, go forward, run forward.” The coach’s feedback had a positive effect on the critical performance failure element of the task and served to reduce the breach in the didactic contract of the participants’ and coach’s understanding of the content embedded in the task. Sarah engaged in quicker movement forward when she received the ball that in turn drew a positive response from Josh, “Sarah, good you took it. That was really good because you were really aggressive and took advantage of the situation that they weren’t
coming at you. Try and do that in the game and we’ll win”. (Josh, lesson observation, 3v2 task, lesson 13).

Despite the increase in Sarah’s performance of the targeted content elements of the 3v2 task the outcome of the task was still unsuccessful due to the poorly timed passes being made on offense. Josh’s response was to again provide pertinent feedback to the group, “This is why we weren’t successful this time because you weren’t looking for where each other were. Look for your support players when you are about to be tagged”.

The participant success rate in the 3v2 task in table 4.21. reveals that the content knowledge embedded in a successful execution of the offensive overload situation was problematic for many of the participants. Specifically, Sarah who had missed many of the previous lessons, was struggling to acquire the knowledge to effectively participate in the task with the result that the outcome of many of the trials was unsuccessful for the offensive team. Lesson observation data suggests the 3v2 task was a CDI due to the participants inability to perform content elements learned in previous tasks. Evidence from the post-lesson participant debrief revealed that several of the participants had learned from previous lessons the content knowledge necessary to be successful in the 3v2 task. Carla commented:

We needed to spread out (element #5) like all the other ones and make sure your behind the player (element #3) so you provide them with an opportunity to pass. The person with the ball needs also to move forward (element #2) even if they have their tag stolen because that’s going to make you go forward because you can’t pass forward. (post-lesson participant debrief, 3v2, lesson 13)

Carla also realized that success in a task like 3v2 is dependent on all of the players performing appropriately, “We did stay behind, well some of us did”.

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From the feedback statements given by the coach during the task and the post-lesson debrief it is clear that Josh understood the critical content knowledge the participants needed to learn be successful in the task. After showing a successful trial of the 3v2 task Josh demonstrated his growing confidence of his content knowledge of tag rugby:

In that one we spread out and they stayed behind each other and I feel confident because they listened to me and I think that’s why they were successful because they were doing what I was talking, hoping I had instructed well enough (Josh, post-lesson debrief, 3v2 task, lesson 13).

Josh also reflected that the social relations between him and his players often impacted his coaching effectiveness during the unit and team success was dependent on all the players listening. He also admitted getting frustrated with one of his players due to her unwillingness to listen, “Sarah did not listen very well and did not try very hard. I don’t know if it’s because she doesn’t like me but she didn’t respond well to me. She is a bit crazy all the time though”. On reflecting on Josh’s coaching the rest of the players liked his coaching and understood his frustration. Sally remarked, “She [Sarah] never pays attention and he tries to control that. He doesn’t lose his temper though and he is pretty patient”.

Lesson 14

A Priori Analysis – Coach’s Intent for Tasks

The main focus for lesson 14 was for students to apply the knowledge they had learned in the unit during the 4v4 games of the formal season. The coach was responsible for taking a ten-minute warm-up practice and then organizing his team for the 4v4 game. Josh decided to utilize the keep ball practice presented in lesson 10 and 12 as he wanted
his players to focus on their awareness of the position of support players, “I want them to be able to look for each other and places where they can pass to as we did not do that well last lesson” (Josh, pre-lesson coach plan, lesson 14). Josh also suggested that passing and support was his emphasis for the 4v4 games, “We need to pass more because at the moment we just get the ball and run forward to be tagged”.

A Posteriori Analysis – Student Response to Tasks

Table 4.22. shows that the participants were highly successful in maintaining possession of the ball during the keep ball task, demonstrating application of knowledge of the technique and timing of passing accurately and also adopting appropriate support position. Analysis of 4v4 game performance of these specific content elements revealed that the participants were able to consistently effectively apply this knowledge within offensive game play. Team members demonstrated higher than an 80 percent success rate on passing accuracy and timing and adopting a support position behind the ball carrier. Participants averaged a 75 percent success rate on maintaining width in attack by keeping an appropriate distance from the ball carrier. Carrie was the only player who did not perform as effectively on this specific content element as she tended to support to far behind the ball carrier position.
Lesson 14

Table 4.22. Lesson 14 Participant OTR and Performance Success During Tasks.

Lesson 15

A Priori Analysis – Coach’s Intent for Tasks

The objective for the final lesson of the unit was for participants to apply the knowledge of tag rugby they had learned through the unit and attempt to apply it within the competitive context of the culminating games of the Sport Education season. During
the lesson the students participated in two, fifteen minutes scrimmage games against two different teams.

_A Posteriori Analysis – Student Response to Tasks_

Table 4.23. provides an analysis of each of the participant’s performance on each of the content knowledge elements targeted through the peer-assisted learning tasks of the tag rugby Sport Education unit. The participant performance on each of the content elements presented in table 4.23 will be used to present data on the second primary research question, what tag rugby content knowledge did participants understand and perform as a result of the peer-assisted learning tasks of the Sport Education unit?

**R.Q. 2. What tag rugby content knowledge did participants understand and perform as a result of the peer-assisted learning tasks of the Sport Education unit?**

2.1. _Was there a misalignment between the knowledge and performance unit goals intended by the teacher and actual student knowledge and performance learned by the end of the unit._

To determine the summative effect of the peer assisted learning tasks of the Sport Education unit on participant development of content pre- (lesson 4) and post- (lesson 15) peer assisted learning task assessments were made of participant game play performance on each of the intended content elements were made. The results of these performance analyses are provided in the following section. To assess change in participant knowledge of each intended content element over the multiple peer assisted learning tasks data sources from lesson observation of verbal interactions and interviews were analyzed and compared. The data on resultant participant knowledge and performance are presented by content element.
<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Games</th>
<th>Ball carrier makes accurate pass to receiver (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
<td>Josh</td>
<td>Carla</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>84%</td>
<td>93%</td>
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</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Games</th>
<th>Ball carrier runs forward quickly into available space (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>82%</td>
<td>49%</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Games</th>
<th>Offensive support players adopt a behind support position (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
<td>61</td>
<td>61</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>84%</td>
<td>92%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Games</th>
<th>Ball carrier commits defender before passing (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Games</th>
<th>Offensive support players maintain distance from ball carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
<td>61</td>
<td>61</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>69%</td>
<td>73%</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Games</th>
<th>Ball carrier uses evading maneuvers to avoid being tagged (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>39%</td>
<td>3%</td>
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</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
<th>Ball carrier performs loop move after passing (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTR</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>25%</td>
<td>0%</td>
</tr>
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</table>

Table 4.23. Participant OTR and Performance Success on Each of the Targeted Tag Rugby Content Knowledge Elements During the 4v4 Scrimmage Games of Lesson 15 [continued]
Table 4.23. [cont.]

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ball carrier performs fake pass to create space (8)</td>
</tr>
<tr>
<td>OTR</td>
<td>Josh 26 Carla 25 Todd Absent Sally 19 Carrie 11 Sarah Absent Overall 81</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>0% 0% 0% 0% 0% 0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ball carrier co-ordinate to perform switch move (9)</td>
</tr>
<tr>
<td>OTR</td>
<td>26 25 Absent 19 11 Absent 81</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>0% 0% 0% 0% 0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Defender successfully steals tag (10)</td>
</tr>
<tr>
<td>OTR</td>
<td>7 7 Absent 2 3 Absent Overall 19</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>40% 56% 50% 100% 50%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Defender runs forward to close space in front of ball carrier (11)</td>
</tr>
<tr>
<td>OTR</td>
<td>34 34 Absent 34 34 Absent Overall 136</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>47% 27% 16% 3% 24%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructional Task</th>
<th>4v4 Scrimmage Game</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Defenders maintain lateral distance between themselves (12)</td>
</tr>
<tr>
<td>OTR</td>
<td>34 34 Absent 34 34 Absent Overall 136</td>
</tr>
<tr>
<td>Percentage Success</td>
<td>15% 15% 15% 15% 15%</td>
</tr>
</tbody>
</table>

**Accurate Passing and Receiving (1)**

Results of participant OTR and performance success during the lesson 15, 4v4 scrimmage games (table 4.23) reveals that Josh’s team demonstrated 85 percent efficiency of passes made by the end of the unit. These performance data suggest that as a result of the Sport Education tag rugby unit, the team learned sufficient content knowledge relating to the technique of passing to consistently pass accurately during an opposed game play setting.
Figure 4.8. displays the individual percent success of completed passes during a 4v4 scrimmage game prior to (end of lesson 4) and the second after the peer-assisted learning tasks (lesson 15) associated with the Sport Education unit. Results show that the team percent success in performing accurate passes during game play increased from 75 to 85 percent of OTRs after the peer-assisted learning tasks. The high level of success rate demonstrated during lesson 4 game play suggests that many of the participants (Josh, Carla, Sally, Todd) were able to consistently, accurately pass the ball prior to the peer-assisted learning tasks (PAL).
The individual exception was Carrie who increased her percent passing accuracy from 40 percent to 71 percent of passes attempted during game play during the PAL. Analysis of Carrie’s passing success during instructional tasks such as the Auckland Grid (lesson 8, 100%), and 3v2 keep ball (lesson 10, 100%) suggests that performance in these peer-assisted learning tasks may have facilitated her development of content knowledge of accurate passing.

*Running Forward Quickly into Space (2)*

Results of lesson 15 participant OTR and performance success during the 4v4 scrimmage games (table 4.23) reveals that during 59 percent of participant OTRs the ball carrier ran forward quickly into available space. These performance success rate data suggest that some of the participants had not learned this specific element of offensive content knowledge and were inconsistent in their application of the content within game play. Table 4.23 shows that by the end of the unit only Josh demonstrated a consistent performance of running forward quickly into space when in possession of the ball in game-play.

Figure 4.9. displays the individual percent success of the ball carrier running quickly forward into space during a 4v4 scrimmage game prior to (end of lesson 4) and after the peer-assisted learning tasks (lesson 15) of the Sport Education unit. Figure 4.9. reveals that for all participants the peer-assisted learning tasks increased their performance of running forward into available space when in possession of the ball during game play. The data reveal that the peer assisted learning tasks were particularly facilitative of Josh understanding and applying knowledge of this specific content. His
demonstration of appropriate responses in game play increased from a 35 percent success to an 82 percent success rate.

Evidence from post-lesson debriefs revealed that Josh understood the importance of the ball carrier running forward quickly into space to utilize space and facilitate success in executing offensive overload situations. He consistently provided feedback to his peers relating to “being aggressive” (lesson 8) on offense which was his interpretation of “moving forward quickly” when you have the ball. Within specific tasks (e.g. 3v2, lesson 13) he also reflected on the critical nature of this content in executing an effective solution to offensive overload situations. Josh stated, “They failed because they did not run forward and look for open space”.

Figure 4.9. Game Play Performance Before and After Peer Assisted Learning Tasks – Running Forward Quickly into Space.
Although the other participants improved in their performance of this specific content element during peer-assisted learning tasks, their performance during games at the end of lesson 15 was inconsistent. These game play performance data are reflective of the participants’ performance of the content knowledge within instructional tasks. During the 3v2 Moving it Wide task during lesson 11 the content of running forward quickly into space was the cause of a breach in the didactic contract for the outcome of the task. Participants (Carrie, Carla, Sally) consistently did not demonstrate knowledge of this content element during trials of the task. By the end of the unit Carla provided some evidence that she was beginning to understand this content knowledge by suggesting that during the 3v2 task in lesson 13, “the person who has the ball needs to move forward even if they have their tag stolen because that’s going to make you go forward because you can’t pass forward”. The data did not show other participants understood this specific content.

Support Players Adopt a Behind Support Position (3)

Results at the end of unit for participant OTR and performance success during the 4v4 scrimmage games (table 4.23) revealed that during 90 percent of OTRs Josh’s team adopted a behind the ball carrier support position. These performance data suggest that as a result of the Sport Education unit the participants had learned a level II solution, adopting a behind support position, to maintaining possession of the ball in tag rugby.

Figure 4.10. displays the individual percent success of the support players adopting a behind position during a 4v4 scrimmage game prior to (end of lesson 4) and after the peer-assisted learning tasks (lesson 15) of the Sport Education unit. Figure 4.10.
reveals that for all participants the peer-assisted learning tasks increased their percent success at performing the content knowledge of a behind the ball carrier support position. Data reveal an increase in mean percent appropriate response from 55 percent during 4v4 game play prior to the peer-assisted learning tasks to 90 percent appropriate response in game play at the end of the unit. These game performance data suggest that the participants effectively learned the content knowledge of adopting a behind support position when on offense. Evidence from lesson observations of verbal interactions between coach and participants reveal that Josh understood this content knowledge.

Figure 4.10. Game Play Performance Before and After Peer Assisted Learning Tasks – Behind Support Position (3)
During several instructional tasks (e.g. 2v1 Pass and Support, lesson 8, 3v2 lesson 13) Josh gave feedback to support players of, “stay behind the person with the ball”. Participants also provided evidence during the post-lesson debriefs that they had acquired from the coach this content knowledge. Carla stated that “I needed to stay behind” when analyzing an unsuccessful trial at the 3v2 during lesson 13. Sally and Carrie also commented during an evaluation of their attempt at the 2v1 Pass and Support (lesson 8) that they were unsuccessful because, “Carrie didn’t stay behind me so I couldn’t pass to her”.

**Ball Carrier Commits Defender Before Passing (4)**

Results of participant OTR and performance success during the lesson 15, 4v4 scrimmage games (table 4.23) revealed that during 95 percent of OTRs participants executed a well-timed pass with the ball carrier committing the defender before releasing the ball. These data suggests that by the end of the unit participants had learned the level II solution to creating space in attack namely, the appropriate timing of pass execution.

Figure 4.11. displays the change in individual participant percent success at making a well-timed pass during a 4v4 scrimmage game prior to (end of lesson 4) and after the peer-assisted learning tasks (lesson 15) of the Sport Education unit. Results show that as a result of the peer-assisted learning tasks Josh demonstrated a large increase (17 percent to 100 percent) in his success at performing a well-timed pass during game play. Evidence from the coach’s feedback statements during tasks suggests that the coaching of the tasks facilitated his acquisition of the content knowledge of the appropriate timing of the pass in relation to the oncoming defender. On several occasions
he provided feedback related to the appropriate time to pass, “You don’t have to pass yet, only pass because she’s about to tag you. Passing shouldn’t be something you do because its written down, it should be done because you have to do it” (Josh, lesson observation, 2v1 loop move task, lesson 12). Josh’s teammates seemed to respond to his specific feedback and effectively learned the appropriate timing of a pass. During a post-lesson participant interview Carrie suggested that, “you only pass when you are about to be tagged so the defender can’t go to the other attackers” (Carrie, post-lesson debrief, 2v1 Pass and Support, lesson 9).
Figure 4.11. illustrates that following the peer-assisted learning tasks, participants had learned when best to execute a pass. The OTR data on this specific content element in table 4.23. show that during end of unit scrimmage games the participants less frequently chose the option of making a pass when confronted with an approaching defender. Observations of lesson 15 game play reveal that when running towards space when in possession of the ball the participants evaded the defender and ran forward instead of trying to execute a well-timed pass to a teammate.

Post-lesson interviews with the participants revealed that they understood the content knowledge related to the timing of the pass. However, their performance of the skill was often poor (e.g. 3v2 task, lesson 11). These data suggest that although the participants knew when to pass, their application of the knowledge during instructional tasks was generally unsuccessful which impacted their decision to pass during the 4v4 scrimmage games. They were unsuccessful with passing due to the lack of pace running forward and the defender being able to anticipate the pass.

*Offensive Support Players Maintain Distance from the Ball Carrier (5)*

Lesson 15 participant performance success during the 4v4 scrimmage games (table 4.23) revealed that during 60 percent of the participants OTRs, the offensive support players adopted a position that maintained lateral distance between themselves and the ball carrier. Individual data show that by the end of the unit Sally (37 percent) and Carrie (59 percent) did not consistently demonstrate their content knowledge of this level II solution to creating space in attack, by providing width in support.

Figure 4.12. displays the change in the individual participant percent success at maintaining lateral distance from the ball carrier in support during 4v4 game play from
lesson 4 to lesson 15. The data presented shows a small improvement (44 percent to 60 percent) in the overall team performance of maintaining width in support, which can be explained by Josh, Carla and Carrie’s higher percentage success in performing the content element during the final scrimmage games. Josh demonstrated his understanding of this specific element of content knowledge during his coaching of instructional tasks.

![Graph showing percent success for different players and overall performance over lessons 4 and 15.](image)

**Figure 4.12.** Game Play Performance Before and After Peer assisted Learning Tasks – Maintaining Lateral Distance from Ball Carrier when in Support (5).

He attempted to facilitate a higher level of success for the offense by creating a wider space for the offensive players to move. Prior to lesson 8 he suggested that attackers,
“spread out the area that they were working in”. He also adapted the 3v2 task in lesson 13 to allow the attacking support players more lateral width. In addition to adapting tasks to promote width, Josh also verbalized his understanding of the value of having distance between attacking players, “Because if you have a wider space between you and the support player its harder for the defender to go to either one and you have more room to maneuver” (coach debrief, switch move, lesson 10). Carla also demonstrated her understanding of the critical content of width in attack during her reflections of the failure of her peers to get past her in the 2v1 Pass and Support move, lesson 12. “They didn’t spread out so there wasn’t any space for them to pass the ball”. Sally did not provide evidence that the peer-assisted learning tasks had facilitated her learning of this specific content knowledge. During her reflections in the participant debriefs she never provided lack of lateral support position as a rationale for offensive failure during overload tasks.

**Ball Carrier Utilizes Evading Maneuvers to Avoid Being Tagged (6)**

Participant performance during lesson 15 scrimmage games (table 4.23) revealed that during 19 percent of the participants OTRs the ball carrier utilized evading maneuvers to avoid being tagged by the defender. By the end of the unit only Josh demonstrated sufficient performance of this skill (39 percent of OTR) during game play to suggest he had understood this content.

Figure 4.13. displays the change in each participant’s percentage OTR evading maneuvers to avoid being tagged during 4v4 game play from prior to and the end of the peer-assisted learning tasks during the unit. Results reveal that none of the participants demonstrated an increase in their use of evading maneuvers (swerve, sidestep) during game play following the peer-assisted learning tasks. Evading maneuvers were only
explicitly taught by the coach during lesson 5 of the unit. From observation of participant behavior during lesson 5 Josh demonstrated evidence of his understanding of how to perform an effective sidestep and swerve maneuver when in possession of the ball. He provided relevant technique feedback to peers during the unopposed tasks, “Think of the sidestep it's (the cone) is a corner of a wall and you ant to change weight from one foot to the other around it” (Josh, lesson observation, sidestep task, lesson 5).

Josh was the only participant to regularly utilize the technique during game play. During lesson 5, the other participants demonstrated an ability to perform the maneuvers.

Figure 4.13. Game Play Performance Before and After Peer Assisted Learning Tasks – Ball Carrier Use of Evading Maneuvers (6).

Josh was the only participant to regularly utilize the technique during game play.

During lesson 5, the other participants demonstrated an ability to perform the maneuvers.
during unopposed instructional tasks but did not during game play. In a post-lesson participant debrief, Sally demonstrated her understanding of the evading maneuvers, “as we approached the defender we should have transferred weight from one foot to the other to get around them” (participant debrief, 1v1 Head On task, lesson 7). Carrie did not experience any success in performing the skills during the 1v1 Head On task. This data may explain why she never utilized an evading maneuver during game play.

*Level III and IV Complexity Solutions to Creating Space in Attack (elements 7, 8, 9)*

Participant performance data during lesson 15 scrimmage games (table 4.23) shows that by the end of the Sport Education unit none of the participants demonstrated an ability to perform either a loop, fake pass or switch move during 4v4 game play.

Analysis of percentage success during instructional tasks develop knowledge of content related to performing each of these strategies (e.g. 2v1 switch move, lesson 9, switch and fake switch move, lesson 10, 2v1 loop move, lesson 12) revealed that the content embedded in all of these moves was problematic for participants. During both episodes of the switch move, participants demonstrated less than 25 percent success rate in getting past the defender. During performance of the 2v1 fake switch move (switch move that includes fake pass) and 2v1 loop move tasks the participants failed to consistently execute the moves successfully.

Analysis of performance of specific content, to create space in attack, revealed that the timing element of the pass was problematic. An example of this lack of content knowledge was highlighted with the fake pass move. During the unopposed setting of the Auckland Grid task (lesson 5) many of the participants were able to successfully perform the technique. However, when the skill was required during the opposed 2v1 contexts the
participants were unable to successfully execute the move. Evidence from the post-lesson interviews suggests that Josh was the only participant who understood the critical nature of the timing element of the pass within both the switch and fake pass moves, “Part of the switch is to confuse the defensive player as to who has the ball. You have to commit the defender to you first and then at that moment either make the pass or make it look convincing that you are going to fake it” (coach debrief, 2v1 Switch and Fake switch Move, lesson 10). The other participants did not provide evidence that they had learned a sufficient number of the content elements, including timing, for consistent performance of either the switch, loop or fakes pass moves.

**Defense**

*Defender Runs Forward to Close Down Space in Front of Ball Carrier (11)*

Participant performance data during lesson 15 scrimmage games (table 4.23) reveal that during 24 percent of the participants OTRs did the individual participants run forward to close down the space in front of the offensive ball carrier. By the end of the unit only Josh demonstrated sufficient performance of this skill (47 percent of OTR) during game play to suggest that he had learned this specific content knowledge.

Figure 4.14. displays the change in each participant’s percentage success in closing down the space in front of the oncoming ball carrier during 4v4 game play before and after the peer-assisted learning tasks during the unit. Results reveal that the mean percent of OTRs that the participants performed the defensive closing down space content during 4v4 game play decreased (from 38 percent to 23 percent) as a result of the peer-assisted learning tasks. This data suggest the peer assisted learning tasks were not effective in developing participants content knowledge of this aspect of defense. The
content knowledge of the defender running forward to close down the space in front of
the ball carrier was only intended to be explicitly taught during the 1v1 Head On
instructional task of lesson 7. Analysis of the performance of participants in the task
reveals that only Todd and Sally were effective at stealing the tag of the oncoming
defender.

![Graph showing percent success for different players](image)

Figure 4.14. Game Play Performance Before and After Peer Assisted Learning Tasks –
Defender Closing Down Space in Front of Ball Carrier (11).

During the pre-lesson coach plan Josh demonstrated his understanding of the
element of individual defense, “If you’re an aggressive defender then your not going to
wait for them to come to you, your really going to charge them”. In-task coach feedback
statements and post-lesson participant debriefs reveal that Josh failed to explicitly coach
this piece of content knowledge to his peers. This lack of explicit coach emphasis during the tasks and game-play prevented the participants learning this content knowledge.

*Maintaining Lateral Distance Between Defensive Players (12)*

Results of participant performance success during lesson 15 scrimmage games (table 4.23) reveals that during only 15 percent of the participants OTRs did the team of individual defenders maintain distance between themselves to prevent the opposition creating width in attack. This data suggests that the participants did not learn the content knowledge of defending as lateral, wide unit. The peer-assisted instructional task designed to teach this specific piece of content knowledge was the “team defend” task of lesson 7. Observations of participant behavior revealed that the participants were successful in maintaining a lateral, equidistant line of players while moving. The lack of transfer of this content knowledge to performance of defensive team strategy emanated from Josh’s emphasis that the task was as a practice for offense. He stated “The point of this, in case you guys were wondering, is that you guys can move as a team when we play a game because you can’t pass ahead of you, if we give you the ball its got to be behind you” (Josh, lesson observation, team defend task, lesson 7). In response the participants never made the connection that it was a strategy for team defense. During the games Josh would often run forward to close down the space in front of the ball carrier and the remaining three defenders would adopt a vertical line to cover for Josh in case he failed to steal the tag. The result was that the team infrequently defended as a lateral unit.

R.Q.3. *Do the participants learn, as a result of the peer-assisted learning tasks, any additional content knowledge not intended by the teacher. What is the relevance of this content knowledge to participant performance?*
Data presented in section 1 of the results on the evolution of content during the peer assisted learning tasks of lessons 5-15 reveals that a high degree of alignment existed between the intended content to be learned and the content the participants engaged with during the tasks. The following section presents instances of content development when the participants modified the content of the task to elicit additional content not intended by the teacher. A summary of the relevance of this additional content to participant performance is provided.

Modified Passing Technique

To execute an effective switch move requires much of the content knowledge learned in the lower complexity 2v1 pass and support move. Participants must run quickly into space (on a diagonal), pass when the defender is committed and the support player must stay behind the ball carrier. The additional content is the adaptation of passing technique required to effectively pass to a support player approaching at a perpendicular angle. The intended technique was for the ball carrier to turn away from the approaching defender to ‘shield’ the ball and then execute a short, looped pass that was easy for the receiver to run onto and catch. Although Josh provided a successful initial demonstration of the task he failed to provide specific elaboration on the technique required to pass the ball.

From the trial-by-trial analysis of specific elements of content in table 4.14, it can be seen that during three of the first four trials of the task the participants failed to make an accurate pass. The participants were failing to make an accurate pass due to their introduction of an inappropriate modified passing technique. Participants were attempting to execute a ‘football hand-off’ where the ball carrier holds the ball behind them to await...
the oncoming support player. This ‘additional’ content was inappropriate to execute the task as it brought the attackers to close together such that the defender was easily able to cover both of the attackers. Josh was concerned with this performance and provided specific feedback related to the content after trials 4, 9 and 14:

Make sure you have a good hold on the ball and pass to the side. Don’t hold the ball behind you, turn towards the player who is coming behind you (Josh, lesson observation, switch move, trial #14, lesson 9).

The coach feedback was effective in reducing the critical breach in the didactic contract as the participants modified their technique to turn in the appropriate direction. The coach feedback failed to change the technique of the passing and the participants persisted in attempting to execute a ‘hand-off’. From table 4.14, it can be seen that during that during all of the final six trials of the switch move task, the participants failed to make an accurate pass to the receiver. The introduction of a modified passing technique from other sport domains (football) elicited a critical breach in the didactic contract of content learned in the switch move such that participants failed to perform the content consistently enough to secure the strategy as a viable option during 4v4 game play.

Modified Strategy – 2v1 Pass and Loop Move task, lesson 12

The learning goal of the loop was for participants to understand that once they had made a pass they were not redundant in offense but could quickly run around the receiving support player to ‘create an extra player’ to pass to. The organization for the 2v1 Pass and loop task was similar to the other 2v1 offensive overload tasks, participants lined up in pairs at the start line and were given the task objective of getting passed the defender to carry the ball over the try line without having their tag stolen.
Josh’s ineffective initial demonstration of the loop move seemed to elicit a breach in the didactic contract of content learned as during the first four trials of the task (table 4.20) none of the participants attempted the loop move. Instead, the participants modified the task and performed a previously learned, alternative strategy for executing a 2v1 offensive overload situation, the fake pass and sidestep. Table 4.20 reveals that the participants introduction of this alternative content solution facilitated a 100 percent success in the first four trials of the task. Josh attributed the failure of his teammates to attempt the new ‘loop’ content to the low intensity of the defender, “Sally wasn’t being aggressive enough so I changed the defender” (Josh, post-lesson debrief, 2v1 Loop move, lesson 12). Table 4.20 (trials 5-16) shows that this task adaptation reduced the occurrence of the ‘additional’ participant content of the fake pass and sidestep but did not facilitate success at the intended loop move. This data highlights the pattern of data that participants often evaluated the constraints of the task and selected the strategy content that had the least complexity and highest probability of achieving the goal of the task. This strategy modification behavior was reproduced during 4v4 game play as none of the participants selected the loop move as a strategy to create space when on offense.

**Modified Strategy – Team Defense Strategy, 4v4 game play, lesson 15**

The didactic intent of the teacher was for participants to learn the defensive content of closing down the space in front of the offensive ball carrier (content element #11) and retain a lateral line when defending as a unit (content element #12). From the data presented on lesson 7 it was clear that the didactic focus of the coach during the “Team Defend” and “1v1 Head on” tasks was not on the intended defensive content but the relevance of the tasks for offense. The lack of elaboration of the intended defensive
content during instructional tasks manifest in participants performance during game play. End of unit game play performance data (table 4.23) revealed that during 24 percent of OTRs did the participants run forward to close down space in front of the ball carrier. During 76 percent of OTRs the participants remained on their starting line and waited for the offensive players to approach. This unintended content learning outcome reduced the effectiveness of the team defensive capacity. By staying on the starting line the participants limited their opportunity to recover to steal the tag of the ball carrier if he/she evaded the first defender. In response to this misaligned strategy content Josh consistently ran forward to close down the space of the offensive ball carrier (47 percent OTR, table 4.23). The result of this introduced content strategy was the team adopting a ‘vertical’ formation, which allowed the offensive team to create space with width.
The purpose of this study was to examine the development of tag rugby content knowledge of a team of 6 students participating in peer-assisted learning tasks of a unit of Sport Education. Specifically, the study utilized a critical didactic incident (CDI) methodology to analyze the evolution of participants’ content knowledge and performance of tag rugby during the peer assisted learning tasks associated with the curriculum. Data presented in chapter 4 provided a lesson-by-lesson description of the specific tag rugby content knowledge taught and learned by participants during each of the peer assisted instructional tasks. CDIs were identified to describe the evolution of the didactic contract and the alignment/misalignment between the intended and actual content learned during specific tasks. This chapter presents a discussion of the findings for configurations in the data to understand patterns of emergence of the didactic contract across episodes and lessons. These findings will be used to answer the three primary research questions that stimulated the study by summarizing the divergence and convergence between the knowledge intended to be learned and the knowledge actually learned and the dynamics of participant behavior that shaped this process.
This section is followed by research conclusions, implications for teachers/teacher educators using the Sport Education curriculum and recommendations for future research.

Discussion - Research Question 1

How did student knowledge and performance of the content of tag rugby evolve during the peer-assisted learning tasks of a Sport Education unit and what factors impacted their learning?

How did the didactic contract of content learned emerge and what were the factors that impacted the alignment between the knowledge intended to be learned by the participants, the knowledge taught by the student coach and the knowledge actually learned by the participants within tasks?

Review of the Concept of the Didactic Contract of Content Learned

Didactics research (Amade-Escot, 1999) has shown that there is often a misalignment between the intended content to be taught and the actually content learned by students even when there is no real dysfunction within either the managerial or student social system. These modifications of the content knowledge embedded in tasks appear through subtle and tacit participant behavior, which transforms the content actually learned within a task (Amade-Escot, 2000b). Within the didactics program this modification of content is referred to as a “stretching” of the didactic contract and occurs as a result of negotiations between the task leader and students that impacts specifically the content taught and learned within tasks. The consequence of these negotiations and subtle changes within the task is a resultant gap between the content supposed to be taught and the content actually learned.
From a didactic perspective, these modifications or “stretches” in the didactic contract are appropriate, as the students test their capabilities in achieving the goal of the task. However, some of these modifications may become more critical to content knowledge development than others (Amade-Escot, 2000b). These ‘critical’ modifications of content are identified as “breaches in the didactic contract” and represent significant differences between the intended content in tasks and the content actually learned by the participants.

Patterns in the Evolution of the Didactic Contract Across Peer Assisted Learning Tasks

Theoretical Framework

From a didactic perspective, to understand the evolution of participant content knowledge during the peer assisted learning tasks of the Sport Education unit, it is important to describe the evolution of the didactic contract across tasks and lessons. Identification of emerging patterns of the didactic contract across tasks allows for greater insight into the dynamics of participant construction of content knowledge and the (mis)alignment between the intended and actually content learned. To effectively describe the evolution of the didactic contract of content learned requires an explanation of the major contextual factors that operated within the tasks that served to shape the emergence of the contract and thus alignment between the content intended to be learned and actual content learned. Figure 5.1 provides a proposed conceptual framework that will be used to discuss patterns of emergence of the didactic contract across tasks and lessons and thus provide a framework for understanding key factors that shaped the participant development of content knowledge during peer assisted learning tasks of the
unit. The following section provides an explanation of the structure of this conceptual framework and the epistemological assumptions that undergird its process.

The conceptual framework displayed in figure 5.1. is situated within a social constructivist epistemology. In other words, there is an assumption within the framework that the content learned by participants within the peer assisted learning tasks was socially created through didactic interaction within the ternary didactic system. The epistemological assumption is that the knowledge taught and learned is embedded within socially interactive tasks and therefore student learning is assumed to be a co-constructed phenomenon within socially situated interactions. This assumption is aligned with Searle’s (1995) concept of a situated epistemology and his assertion that knowledge transmission is always embedded within institutions and in social relations. Aligned with research studies in didactics (e.g. Amade-Escot, 2001), the conceptual framework provided for this study, proposes that the knowledge to be taught and the knowledge actually taught and learned by the students undergoes a complex transformation processes at various stages of selection and teaching, which fundamentally distinguishes knowledge learned from its origins in academic knowledge of tag rugby.

The framework is organized around the chronology of teaching and learning events that occurred for each of the peer assisted learning tasks completed within the Sport Education unit. The conceptual framework (figure 5.1.) shows that during the instructional strategy of peer teaching within the Sport Education unit the content intended to be learned goes through multiple pathways of interpretation and reconstruction before it manifests itself in the behaviors of the participants during the instructional tasks and scrimmage game performance. Each of these pathways is assumed
to shape the didactic contract of actual content learned as each pathway has the potential to provide either necessary or problematic breaches in the didactic contract and thus significantly impact the alignment between the content intended to be learned and content actually learned.

During regular teacher-directed instructional tasks, the ternary didactic system of the teacher, student and content embedded in tasks operates to shape the evolution of the didactic contract (Amade-Escot, 2000a). Within this orthodox instructional approach only a single phase of didactic transposition (elaboration and transformation of content within instruction) of content exists, namely, the teacher’s cognitive and practical implementation of the intended subject matter knowledge directly to the class of participating students. Within the instructional strategy of peer assisted learning tasks implemented within this unit a secondary, “auxiliary” didactic system operated to further shape the content taught and learned. This auxiliary system includes the ternary system of the student coach, peer participants and the coach’s didactic intent for content embedded in the tasks. With the introduction of the auxiliary didactic system comes a secondary phase of didactic transposition of content, namely the student coach’s cognitive and practical implementation of the teachers’ intended subject matter knowledge (content) to his/her peer participants. The introduction of this secondary phase of didactic transposition brings an added complexity to the emergence of the didactic contract. The auxiliary didactic system provides a greater number of pathways and therefore more potential for misalignment in the emergence of the didactic contract of actual content learned.
Note. * represents pathway for shaping the evolution of the didactic contract.

Figure 5.1. Proposed Conceptual Framework for Understanding the Evolution of Didactic Contract Within Peer Assisted Learning Tasks of the Tag Rugby Sport Education Unit.
The study of the auxiliary didactic system examines the student coach’s transformation, elaboration and reconstruction of the knowledge to be taught and the alignment/misalignment this activity brings to the participants actual learning of the content intended to be taught by the teacher. Within the study the intended content learning goals and the design of the tasks to be utilized to teach the goals were chosen by an external source, namely the researcher. The elaboration of these content goals and tasks to the teacher represents the first pathway (1) for the evolution of the didactic contract between intended and actual content learned. Within the intervention this initial elaboration occurred through the provision of lesson plans and a verbal explanation of the content by the researcher to the teacher. The subsequent teacher reconstruction of the intended content to her own content knowledge (CK) represents the second pathway (2) in the shaping of the didactic contract. The third pathway (3) was the teacher’s elaboration of content to be taught to students. This pathway is the first phase of didactic transposition within the regular didactic system and represents the teacher’s didactic intent for learning. This elaboration occurred at two main points during the Sport Education unit. The first elaboration of the didactic intent of the teacher occurred during the pre-lesson coach brief sessions (3a) and the second, during the teacher’s role as ‘facilitator’ during ‘in-class’ peer assisted learning tasks (3b). The goal of the second elaboration (3b) during ‘in-task’ transposition was for the teacher to directly impact the emergence of the didactic contract by intervening directly with students to re-align participant learning with the teacher’s didactic intent for the task. This pathway is duo-directional as the nature of the teacher’s intervention will be dependent on student response to specific tasks. The fourth pathway (4) is the student coach’s reconstruction
and understanding of the knowledge (content knowledge) to be taught as a result of the teacher pre-lesson brief. This pathway represents the first interaction within the auxiliary didactic system that serves to refine the didactic contract of content learned. The fifth pathway (5) represents the coach’s transformation and elaboration of content to his peers within during the act of teaching within the peer assisted learning tasks. This phase of didactic transposition is also duo-directional as student coach in-task behaviors occur in response to the evolving peer participant performance in tasks. The student coach’s elaboration of content is shaped by the coach’s pedagogical knowledge and application of their content knowledge to the act of teaching in the form of Pedagogical Content Knowledge (PCK). The “content actually learned” by participants manifests in knowledge of content and performance during instructional tasks and game play.

This conceptual framework forms the structure for the presentation of patterns of protagonist behaviors that occurred across episodes that shaped the evolution of the didactic contract of content actually learned within the unit. Specifically, the following section will present descriptions of patterns of participant behavior that occurred at each of the temporal pathways that served to align/misalign the content intended and actually learned within the peer assisted learning tasks of the unit. To analyze the impact of each pathway on the actually content learned within the unit a search for common themes of alignment/misalignment was conducted across tasks. Summaries of dominant patterns of (mis)alignment are presented for each pathway of the proposed conceptual framework.

Pathway (1, 2) Didactic Transposition of Intended Content from Researcher to Teacher

Amade-Escot (2000b) describes didactic transposition as the phenomena of transformation, elaboration and reconstruction of the knowledge intended to be taught.
As shown in figure 5.1., during the didactic transposition of intended content from researcher to teacher, the content passed through three didactic contract pathways. The content was elaborated by the researcher to the teacher (1), reconstructed by the teacher into her own content knowledge structures (2) and then elaborated to students during the pre-lesson coach briefs and in-task interventions (3). From a theoretical perspective each of these pathways represents a potential site for a breach in the didactic contract as each one has the potential to facilitate a misalignment between the intended and actual content learned. The data collection methodology utilized within the study did not include a protocol for collecting explicit data on the emergence of the didactic contract through pathways 1 or 2. For example, the protocol did not include videotaping of the researcher’s elaboration of content to the teacher or a pre-interview with the teacher on her didactic intent for the tasks. Within this study the latter data collection protocol was replaced with a pre-lesson interview with the student coach to establish the didactic intent within the auxiliary didactic system. Inference on the effect of pathways 1 and 2 on the evolution of the didactic contract across lessons and the alignment between the researcher’s and teacher’s intended content was analyzed through patterns of teacher verbalization of content that occurred during pre-lesson teacher to coach brief’s and teacher in-task intervention during lessons.

The teacher was initially selected to participate in the study because of her experience in teaching tag rugby and content knowledge in the activity. The main method of elaboration of the researcher’s intended content learning goals for the unit to the teacher (pathway #1) was through the preparation and verbalization of lesson plans and coaching task cards for each designed instructional task. Claire had previous teaching experience in teaching tag rugby and content knowledge in the activity.
experience implementing many of the instructional tasks utilized in the unit. Exceptions to this were tasks designed to teach more complex offensive content strategies (Level III and IV) such as the “Switch Move” task (lessons 9 & 10) and the “2v1 Pass and Loop” task (lesson 11).

*Patterns of Aligned Teacher Content Knowledge.* During pre-lesson coach briefs of lower complexity tasks (Level I and II) Claire often adopted the pedagogical strategy of explaining the intended content of the tasks by reading directly from the lesson plans and coaching tasks cards and then providing a synopsis of the content in her own words. Examples of this teacher behavior occurred during pre-lesson teacher briefs of the sidestep and swerve maneuvers (lesson 5), 2v1 Pass and Support Task (lesson 8), Switch Move (lesson 10) and the 3v2 Moving it Wide task (lesson 11). The content of these teacher synopses during pre-lesson briefs was generally aligned with the intended content embedded in the design of the tasks. This content alignment is illustrated with Claire’s elaboration of the 2v1 Pass and Support Task (lesson 8):

I’ve noticed that you guys do this in the game, sometimes your players get the ball and they have a tendency to want to get rid of it quickly. So have them draw the defenders and then pass it off (content element #4). Support player keep your distance (content element #5) and don’t get in front of the ball carrier. Ball carrier also look where you are passing (content element #1). If the defender tries to fool you and go to the support player don’t pass the ball but run on quickly (content element #2). Finally try and make it look like you are going to pass and then sprint off in the other direction (content element #8). (Claire, teacher brief, 2v1 Pass and Support task, lesson 8).

This typical pattern of teacher elaboration of content to student coaches provides evidence that the pathways of researcher elaboration of content (1) and teacher reconstruction of knowledge (2) were not causes of significant misalignment in the didactic contract during the unit.
From a socio-cultural view of learning the aligned transposition of content from researcher to teacher through the preparation and verbalization of specific lesson plans and task cards was a strategy that facilitated a shared language system between participants (Renshaw, 2002). McInerney and McInerny (2002) have suggested that for learning to occur within social contexts the participants must have, “tools to act upon the world and a shared language system that interprets these actions within social contexts” (p.45). Within the elaboration of content from researcher to teacher the learning “tool” was the lesson plan and coaching task cards and the shared language system was the content embedded in the task design illustrations and assigned coaching points. The alignment of content knowledge between the researcher and teacher suggests that the language system on the task card was understandable to both participants as both members shared a common interpretation of the language of the content. This common understanding of the language system of tag rugby content knowledge may have been formed through a shared history of the subject matter of tag rugby and also the development of knowledge structures to interpret the language through the medium (tool) of coaching task cards.

The second manifestation of teacher content knowledge (3b) occurred during the peer-assisted instructional tasks of the unit. Within the student-led tasks of the unit the teacher adopted the role of “learning facilitator” by moving from group to group checking for participant compliance and understanding of intended learning goals. Based upon observation of participant behavior the teacher intervened to provide feedback and guidance based on perceptions of problematic breaches between the intended content of the task and the participant performance in tasks. From a didactic perspective, this
teacher ‘facilitator’ behavior served to monitor the evolution of the didactic contract of content learned within the auxiliary didactic system and provided guidance that facilitated necessary breaches in the didactic contract to re-align participant learning with the teacher’s didactic intent for the task.

A search for patterns of behavior across in-task teacher elaborations provided further supporting evidence for the alignment between the intended content to be learned and the teacher’s reconstruction of the content knowledge. During intervention within peer assisted learning tasks Claire demonstrated a pattern of providing the participants feedback and task modifications that were aligned with the didactic intent of the initial task. An example of this teacher behavior occurred during the 2v1 Pass and Support task in lesson 11. During the 2v1 task a CDI evolved as the attacking support players failed to keep an appropriate distance from the ball carrier (content element #5). The result of this didactic breach was the defender moved easily across to steal the ball receiver’s tag. Claire intervened to produce a ‘necessary’ breach in the didactic contract and re-aligned the participant learning with the learning intended from the task. Claire emphasized the critical intended content of maintaining width in attack:

Right stop, let me show you, as soon as I do this, watch, you ran here (to the middle) and we (the attackers) end up about a yard apart so what do I want to do? I want to take him (the defender) over here (to the right) and then Carla has all that space to run into. See if you run to the space. Run at spaces not faces, don’t run at him.” (Claire, lesson observation, 2v1 Pass and Support task, lesson 9).

Josh responded to the teacher intervention by continuing to provide feedback relating to maintaining width in attack during subsequent trials at the task. Further demonstrations of the teacher’s aligned knowledge of content occurred during her elaborations of higher complexity offensive content knowledge including the emphasis
on running forward into space (3v2 Moving it Wide task, lesson 9), timing of the pass (2v1 switch move, lesson 10) and the loop move (2v1 Pass and loop, lesson 12).

The impact of the teacher intervention within tasks to re-align participants’ learning of intended content has similarities with Vygotsky’s argument that guidance should, and does lead development. Unlike Piaget who believed that learning is essentially an individual endeavor where an adult’s interference may lead to imposition of the adult’s ideas onto the child (Van der Veer, 2001). Vygotsky (1978) suggested that adults should provide guidance and help to engage students in activities that are beyond their individual level of competence. This activity of adult content knowledge guidance serves to extend the ‘teachability’ of the child by extending the child’s zone of proximal development (ZPD). During the 2v1 Pass and Support task (lesson 8) the psychological plane of development (i.e. what the participants could do by themselves) was being limited by a lack of participant knowledge of the critical content of “attacking with width”. The teacher intervention on maintaining distance between the ball carrier and support players served to extend their ZPD for the content within the Pass and Support task by enhancing the social plane (i.e. what they could do with the help of more capable others).

*Patterns of Misaligned Teacher Content Knowledge.* A search for disconfirming evidence relating to the manifestation of teacher content knowledge reveals that, on occasion, Claire incorrectly demonstrated content knowledge embedded in the intended task. This teacher misconception then served to create a problematic breach in the didactic contract within the auxiliary didactic system and a significant misalignment occurred between the intended and actual content learned by participants. Analysis of
data configurations shows that these teacher misconceptions of content were infrequent. Cross-task analysis revealed only two instances where the teacher misunderstood/miscommunicated information on the content to be learned. The first misconception was Claire’s interpretation of the organization of the 2v1 task during the pre-lesson coach brief of lesson 6 and the second occurred during Claire’s explanation of the content element of running forward into space (element #2) during the 3v2 Moving it Wide task (pre-lesson coach brief, lesson 11).

Although Claire read from the task card the appropriate coaching point of, “don’t run across your players, run forward” during her own synopsis of the task she provided an illustration on the whiteboard of a diagonal angle of running for the ball carrier. This inaccurate representation of running forward was accommodated by the coach and created a problematic breach in the didactic contract of content learned within the 3v2 task. The participants were observed, “running on a diagonal which reduced the space available for support players to run into” (lesson observation, 3v2 moving it Wide task, lesson 11). The result was consistent failure of the three attackers to get passed the two defenders without having their tag stolen. In response to the CDI, Claire provided an “in-task” intervention, which served to re-align participant performance of the critical element:

“If I’m ball carrier where should I run? [Claire], [Carrie and Josh point to the diagonal]. If I run across here I force all of my support players over there, where’s the space that I should run into really? [Carla points to correct direction]. [Claire demonstrates run]. Draw the defender here and that gives much more space outside. Do you understand if I run across I cut off all my support players, don’t I? [Claire]. (Claire, lesson observation, 3v2 task, lesson 11)
Despite the effectiveness of the in-task teacher intervention in re-aligning students’ conception of the intended content the original emergence of the CDI highlights the powerful effect of teacher misconception of content on student learning within the instructional approach of peer assisted learning tasks.

Pathway (3) - Teacher’s Elaboration of Content

Patterns of Aligned Teacher Elaboration of Content. During the pre-lesson coach brief sessions Claire’s synopsis of the content in the tasks would often include attempts to scaffold onto student coach’s previously learned content knowledge. During initial peer assisted learning tasks this process of scaffolding was in the form of utilizing common knowledge structures from other sports. For example, during the pre-lesson brief of the sidestep task (lesson 5) Claire utilized a basketball analogy. “You’re going to run up and step off the right foot and you’re going to go to the left almost like in basketball with how you do a “V” cut. That’s what the sidestep is”. As the unit progressed, Claire adopted the constructivist pedagogy of building upon the participants’ previous experience of the content from different tasks. For example, during the pre-lesson brief on the “Switch Move” task, Claire stated:

This practice is new, but remember some of the things from the 2v1 Pass and Support, run quickly, watch the defender and don’t pass too early (Claire, pre-lesson brief, 2v1 Switch Move task, lesson 9).

For tasks that were new to the teacher (e.g. 2v1 pass and loop move, lesson 12) the elaboration of content to student coaches was restricted to a verbatim transcription of the lesson plan and coach task cards.

Patterns of data from the a priori analysis of the student coach’s didactic intent for the upcoming lessons revealed consistent alignment between the intended content of the
task and the intended content to be taught by the coach. These data suggest the method of elaboration of intended content adopted by the teacher within the pre-lesson brief was generally successful in preventing problematic breaches in the didactic contract of content taught from the regular to the auxiliary didactic system. The effectiveness of this teacher elaboration of content, even during explanations of tasks that were restricted to the repetition of the scripted task card, provides support for the utility of the coach task card as an appropriate pedagogical strategy to facilitate student coach content knowledge in a Sport Education curriculum. This coach task card method has commonalities with previous research on strategies to overcome potential peer knowledge or communication inadequacies (King, 2002). King (2002) proposed the instructional strategy of Reciprocal Peer Questions where students are given scripted but open-ended questions that they can ask to facilitate interaction among students in a group in understanding a problem or a task that is presented to them. Although not provided with specific questions to pose to peers, student coaches within this study were provided with the ‘solutions to the problem’ of the task in the form of ‘coaching points’. From a Vygotskian perspective, this provision of task solutions to the student coach may have facilitated the differential knowledge level needed between student coach and peers required and created a more adult-child knowledge dyad within the peer assisted learning tasks (Ward & Lee, In Press).

The second phase of the teacher’s didactic transposition of content to participants occurred during the specific in-task interventions. From lesson observation data, the timing of the teacher in-task interventions coincided with significant breaches in the didactic contract. The teacher provided guidance to reduce the problematic breach in the
didactic contract of intended and actually content being learned during the task. Analysis of the effect of these specific interventions on subsequent participant content learning within tasks revealed that they were often efficacious in reducing the breach in the problematic piece of content in the task (e.g. 2v1 Pass and Support task, lesson 9, trial #7, 3v2 Moving it Wide task, lesson 11, trial #8). The necessary breaches in the didactic contract introduced by the teacher were generally successful as a result of her method of transposition and elaboration of pedagogical content knowledge (PCK).

Shulman (1987) defined a teacher’s pedagogical content knowledge as being able to, “elucidate subject matter in new ways, reorganize and partition it and clothe it in examples and demonstrations so that it can be grasped by students” (p.13). Analysis of teacher behavior across in-task interventions showed that Claire would tend to elaborate the problematic piece of content from the task strategy by partitioning it out from the task strategy and providing a demonstration. An example of this behavior occurred during intervention on the timing of the pass during the 2v1 Switch Move task (lesson 9):

Watch, don’t pass too early (element #4), Josh you’re my support player. [Claire demonstrates too early pass] If I pass here all she (the defender) has to do is wait and get Josh, what you want to do is get close to her and as you’re about to get tagged and then release it [ball] so she’s committed to me. With a little pop pass, it’s much easier if I present it to you. (Claire, lesson observation, switch move, trial # 16, lesson 9).

On other occasions the necessary breach would involve Claire modifying the task to elicit the intended response. An example of this intervening behavior occurred during the problematic high intensity of defender movement during the 2v1 Pass and Support task (lesson 8):
Josh, why don’t you restrict the movement of the defender to make it easier for the attackers, only allow them to move sideways (Claire, lesson observation, 2v1 Pass and Support task, lesson 8).

Both of these teacher behaviors demonstrated advanced pedagogical content knowledge but, more importantly, served to reduce the breach in the didactic contract and re-align student learning with intended content goals. Brun and Conne (1990) have emphasized the necessity of these teacher-induced breaches in the maintenance of the didactic contract, “because it essentially obliges the teacher to compensate for the fouls and the gaps which arise in the course of child/situation interactions, however, well those interactions were thought out beforehand” (p.271). The pattern of behavior exhibited by Claire during in-task interventions reveals that the degree to which this re-alignment occurs may be dependent on the teacher’s ability to elaborate content that is sensitive to the dynamics of learning that is occurring within the situated social interactions of the specific peer group.

The efficacy of Claire’s choice of pedagogy to elaborate problematic content and reduce the breach in the didactic contract has similarities with a neo-Vygotskian view that the ZPD is applied not only to the student but also to the teacher. The neo-Vygotskian interpretation of ZPD suggests that during the teacher-student instructional interaction, the student learns how to do the classroom activity while the teacher learns how to guide the student (Van der Veer, 2001). This interpretation of the ZPD suggests that both the teacher and student engage in their own zones of proximal development, which are constituted by each other. In other words, the student’s learning is shaped by the teacher’s guidance, while the teacher’s guidance is shaped by the student’s ongoing learning. Claire was able to observe the emergence of the peer assisted learning task and
isolate the problematic piece of content that was causing a breach in the didactic contract. Her choice of intervention pedagogy (e.g. partial demonstration or task modification) was shaped by her interpretation of the dynamics of the specific “community of learners” and thus her guidance (ZPD) was as a result of actual student learning.

*Patterns of Misaligned Teacher Elaboration of Content.* Although the data suggest a pattern of alignment between the teacher’s intent for the task and student coach’s intention of content to be taught a search for disconfirming evidence reveals that there were instances of ineffective teacher elaboration of content that served to misalign content interpretation. The data from the pre-lesson teacher brief of the “2v1” task in lesson 6 highlights the effect a misaligned teacher representation of the task had on the evolution of the didactic contract within the auxiliary system of the peer assisted learning tasks. Claire failed to clarify the didactic intent for the organization of the three defenders within the 2v1 instructional task:

OK you guys see on the sheet you’re going to have one, two, three defenders and then you’ve got your attackers and one person is going to have the ball. OK so the first attacker is going to run down, your goal is to try and get from point A to point B and your job is to try and move the defenders and I believe what’s going to happen it is you pass it” (Claire, pre-lesson coach brief, 2v1 task, lesson 6).

The misaligned elaboration of content elicited a student coach misconception of the task such that the actual task manifested two against three defenders. This 2v3 task produced a significant breach in the didactic contract of the intended offensive content knowledge to be learned as the “new” task constraint of the defensive overload situation made it too difficult for participants to solve the problem of the task. The result was an 80 percent failure rate in the participants achieving the goals of the task.
The 2v1 task CDI highlights the potential vulnerability of the teacher’s sole reliance on verbal explanation to explain her didactic intent for the content of strategic tasks to student coaches. From a Vygotskian socio-cultural learning perspective the problematic breach in the didactic contract occurred due to a failure of the participants in the social structure (teacher and student coach) to have a shared interpretation of the language system utilized in the didactic transposition (McInerny & McInerney, 2002). To alleviate the potential misconception of content that occurred during lesson 6 the teacher needed to expand her method of transposition to include a representation of the content that would include a language system that would have more language relevance to the student. This alternate language system could have included a pictorial representation of the content in the form of a visual demonstration. This approach would have served to clarify the teacher’s didactic intent and minimized the likelihood of a problematic breach in the auxiliary didactic system.

Pathway (4) Student Coach’s Understanding of Content to be Taught

Data presented in chapter 4 collected from both intrinsic (pre- and post-lesson coach interviews) and extrinsic (lesson observation) sources revealed that Josh’s knowledge structures of the intended content to be learned within the peer assisted learning tasks can be categorized into three distinct forms, knowledge of the purpose or goal of the task, knowledge of the organization of the task and knowledge of the content needed for participants to be successful at the task. This categorization system will form the basis of discussion for patterns of aligned and misaligned student coach knowledge during tasks.
**Patterns of Coach Content Knowledge of the Goals/Purpose of Tasks.**

Evidence from the data confirmed a pattern of aligned coach intent for the generic goal of the specific tasks. A priori analysis of the coach’s didactic intent for the upcoming tasks revealed that Josh had content knowledge of the generic ‘outcome’ of the tasks. For example, Josh understood the intended goal for the 2v1 Pass and support task (lesson 8):

> We’re looking for the attackers to score against the single defender and of course be able to pass and dodge the defender and the defender is basically supposed to try and stop them. (Josh, pre-lesson coach interview)

Josh’s conception of the goal of the task was often verbalized to participants prior to his explanation of the organization of the task (e.g. 2v1 Pass & Support, lesson 8, 3v2 Moving it Wide, lesson 11). During the unit Josh also demonstrated a pattern of aligned representation of the rationale for the tasks to improve participant game play performance. An example of this conception occurred during Josh’s interpretation of the rationale for the 2v1 task (lesson 6):

> That’s to work on so you know what kind of decisions you should be making in the game if you’ve got the ball or when you’re playing on offense (Josh, pre-lesson interview).

Coach knowledge of the relevance of the task was also demonstrated during observation of coach verbal behavior during the 3v2 Moving it Wide task in lesson 11. During the task Josh emphasized his belief in the value of being able to learn how to effectively pass and support during game play.

> I know this seems difficult now but if we can pass at the right time in this practice it will really pay off in the game (Josh, lesson observation, 3v2 Moving it Wide task, lesson 11)

These coach reflections on the ‘value’ of the instructional tasks for participant game play support Kirk and Kinchin’s (2003) theorization that the structure of the Sport
Education model provides opportunity for legitimate participation in a community of practice. The notion of legitimate participation comes from Lave and Wegner’s (1991) theory of situated learning and the notion that a person’s involvement in the practices of a community are legitimate if they hold meaning to them as individuals and also hold significance for other community members. Josh’s reflections on the value of the acquisition of the intended learning goals of the peer assisted learning tasks suggests that he had embraced the “publicly established” (Kirk & Kinchin, 2003, p.230) goals of the instructional tasks as being valuable to his community of practice (i.e. team) and therefore embraced them as a legitimate form of participation.

**Patterns of Misaligned Coach Content Knowledge of the Goals/Purpose of Tasks**

Analysis of configurations in the data showed that occasionally Josh misunderstood the purpose of the task and this misconception created a significant breach in the didactic contract of content. For example during lesson 7, despite the teacher’s initial verbalization of the goal of the lesson to be defensive content Josh adopted a perception that the purpose of the “Team Defend” and “1v1 Head On” tasks was to teach his peers offensive content:

“It is so we can stay together as a team, so if you’re playing in a game your really looking to see what your teammates are doing so you can be part of that and so if they are at the side or behind you, you can pass” (Josh, post-lesson debrief, Team Defend, lesson 7).

This coach misconception of the didactic intent of the task manifested in the participants not being explicitly provided a connection between the performance patterns in the task and the team defensive strategy of defending as a lateral unit (element #12). The result was a misaligned participant conception of the purpose of the Team Defend
task for game play. Carla stated during the post-lesson debrief that, “I think it was a practice for offense”. The defensive strategy of defending as a lateral unit was only exhibited during 24 percent of OTR during the scrimmage game. This low level of success in demonstrating lateral distance between defenders was also maintained throughout the unit.

*Patterns of Coach Content Knowledge of the Organization of Tasks*

Data presented on Josh’s plan and organization of tasks (lesson 7-11) revealed Josh consistently had an aligned understanding of the organization of participants in the intended peer assisted learning tasks. A search for disconfirming evidence revealed that on only a single occasion did the coach’s inadequate knowledge of task organization create a significant breach in the didactic contract. This breach occurred during Josh’s transformation of the organization for the first 2v1 offensive overload instructional task during lesson 6. Although Josh seemed to understand the goal of the task, he was unable to interpret the task card effectively to organize the intended task. The outcome of this misconception was the enactment of a misaligned 2v3 defensive overload task rather than a 2v1 overload scenario.

*Patterns of Coach Content Knowledge of the Performance Elements of Tasks*

The final category of content knowledge that significantly impacted the evolution of the didactic contract and the mismatch between intended and actual knowledge learned was Josh’s knowledge of the content required for the participants to consistently achieve the goal of the task. Data presented in chapter 4 reveal a gradual evolution of Josh’s knowledge of the unit content and his rate of assimilation and accommodation of the subject matter knowledge was dependent on the type of content presented.
**Technique-based Content.** Analysis of Josh’s coaching of technique-based tasks (e.g. sidestep and swerve maneuvers, lesson 5) highlighted his ability to quickly and accurately assimilate and accommodate intended content relating to technique or reproduction of gestural forms (Amade-Escot, 2000). Josh demonstrated knowledge of the critical difference between technique required to execute the sidestep and the swerve maneuvers:

“In the swerve maneuver you want to be able to move without stopping and make your opponent go off balance but to keep your momentum” (Pre-lesson coach plan, Swerve task, lesson 5).

Lesson observation data of Josh establishing one-on-one tuition situations to revisit the content of the technique of evading maneuvers with participants absent during lesson 5 (e.g. Carla, lesson 6, Sarah, lesson 7) emphasized his comfort with and value he placed on teaching technique-based content:

“I need to talk to Sarah for a second because she wasn’t here when we were doing the sidestep so I’m going to teach her real quick. Sarah this is something that’s going to be very useful when you have the ball, OK? (Josh, lesson observation, 1v1 Head On task, lesson 7).

This emphasis on teaching technique-based content has similarities with findings from didactics research on the nature of the content taught by pre-service teachers. Amade-Escot (1993) showed that beginning teachers often simplify the content to be taught to surface features of motor technique due to the limitations of their knowledge of content. From a situated learning perspective this pattern of ‘coach comfort’ in teaching technique-based content demonstrated by Josh during the didactic transposition of knowledge provides some evidence that a “culture of acquisition” (Penney, 2003, p.302) was being reproduced in the community of practice of the peer assisted learning tasks.
Penney (2003) has proposed that although the Sport Education curriculum challenges the learning relations that normally operate (teacher-student and student-student) within physical education it does not break from ‘the culture of acquisition of skills’ that are predefined in society. Josh’s emphasis to his players on the importance of being able to master and reproduce defined gestural forms suggests that the community of practice evolving within the peer assisted learning tasks was one that was reproducing “established dominant forms” (Penney, 2003, p.303) of what it means to acquire content knowledge and therefore legitimate participation.

**Strategy-based Content.** Data from Josh’s episodes of teaching decision-making and strategy related content (e.g. 2v1, 3v2 tasks) reveals a different pattern of coach content knowledge development. Analysis of participant learning during the initial problem solving task (2v1 Pass and Support task, lesson 6 & 8) shows that although Josh understood the goal and purpose of the task he struggled to understand the specific content necessary for participants to be successful in the task. His comprehension of the content required to solve the *early* offensive overload tasks tended to be generic and reduced to a couple of core elements. For example, during the initial episode of the 2v1 Pass and Support overload task (lesson 8) Josh’s primary content focus for the task was for the support players to stay behind the ball carrier and the ball carrier to commit the defender before passing:

Sarah, Jade when you guys are doing that you don’t want to pass right away, wait for her to come to you basically and only pass when you need to pass. Make sure you pass behind you (Josh, coach feedback statement, 2v1 Pass and Support task, lesson 8).
These two pieces of content feedback, although relevant and aligned with the teacher’s intent of the task were insufficient to facilitate consistent success in executing the goal of the task. Table 4.11. illustrates that subsequent participant performance of the task remained unsuccessful after coach feedback intervention. This reduction of the task content to a few ‘known’ features was made despite being provided sufficient knowledge of all the composite elements of task on the coaching card and during the pre-lesson brief:

So have them draw the defenders and then pass it off (content element #4). Support player keep your distance (content element #5) and don’t get in front of the ball carrier. Ball carrier also look where you are passing (content element #1). If the defender tries to fool you and go to the support player don’t pass the ball but run on quickly (content element #2). Finally try and make it look like you are going to pass and then sprint off in the other direction (content element #8). (Claire, teacher brief, 2v1 Pass and Support task, lesson 8).

The result was a significant problematic breach in the didactic contract as the participants were not provided all of the necessary content to execute the task. This pattern of coach behavior within early strategy-based tasks has similarities with findings from didactic research on beginning teacher behavior. Amade-Escot (2000) suggests “analysis of critical didactic incidents showed a reduction of the student foci to a few surface features” (p.93).

Analysis of Josh’s content knowledge during the latter strategy-based content tasks (e.g. 3v2 Moving it Wide, lesson 13) revealed this oversimplification of the content tasks did not remain throughout the unit. Data from the progression of problem-solving tasks that shared common content elements (e.g. 2v1 Pass and Support, 2v1 Switch Move, 3v2 Moving it Wide) revealed that, as the unit progressed, Josh assimilated and accommodated more of the intended content elements of the tasks and eventually learned
sufficient content knowledge to give his peers the appropriate error detection feedback they required to be more consistently execute the strategy tasks. Data from the post-lesson coach debrief from lesson 13 (3v2 Moving it wide task) revealed that by the end of the unit Josh had knowledge of all of the intended level I and II offense content required for successful execution of a 3v2 offensive overload situation:

They needed to spread out (element #5) like all the other ones and make sure you’re behind the player (element #3) so you provide them with an opportunity to pass. The person with the ball needs also to move forward (element #2) even if they have their tag stolen because that’s going to make you go forward because you can’t pass forward” (post-lesson coach debrief, 3v2, lesson 13).

This pattern of evolving coach content knowledge through the unit provides support for contemporary assertions (e.g. Penney, 2003) regarding the nature of learning that goes on during Sport Education. Penney (2003) suggested that, “it may be appropriate to be talking of progressive development in learning in contexts of Sport Education, with learning understood to be an ongoing engaging process, not a fixed or instantaneous event” (p.302).

The evidence provided suggests that as the unit progressed Josh was quick to accommodate much of the intended content knowledge presented to him and his knowledge of tag rugby technique and strategy-based content was on a learning trajectory close to the unit goal expectations. Vygotsky suggested that the mind is both elastic in terms of the different directions cognitive growth may take depending on the socio-cultural environment in which it develops and unbounded in terms of its potential growth and the physical space it occupies (Smagorinsky, 2002). The implication of this assertion is that the ZPD is not limited by developmental boundaries but is a result of the compatibility with the means of socio-cultural mediation. Within the peer assisted
learning tasks of the Sport Education unit Josh was provided with multiple forms of social mediation tools to internalize the higher mental processes of advanced tag rugby strategic and technique-based content knowledge. These mediational tools included coach task cards, observation of teacher intervention within tasks and reflection of performance through stimulated recall of events and all contributed to his cognitive development. Each of these mediational tools provided Josh a unique opportunity for cognitive growth as a peer teacher within the community of the learners. For example, the coach task cards and observation of teacher intervention behavior during tasks provided effective mediational tools for alignment of the intersubjectivity between the coach’s understanding of the task and the teacher’s understanding of the task. The utilization of the data collection protocol of stimulated recall interviews also became an additional mediational means in the coach’s interpretation of the social context in which the content was defined.

Misaligned Content Knowledge. A search for misaligned coach content knowledge revealed that some of the higher order content embedded within the more complex tasks (e.g. Switch move) was problematic for Josh. An example of this type of content knowledge was the timing and adapted passing technique required for the appropriate performance of a switch move. During the two episodes of the switch move task, Josh consistently failed to demonstrate an effective performance of the timing element of the level IV strategy himself and did not provide feedback related to this critical element (tables 4.15., 4.16.) The inability of peer participants to reproduce an effective switch move (table 4.16, trials #'s 7-12) suggested that this content was too difficult for all participants.
From a socio-cultural perspective of learning the higher order content of the switch move may have been too far beyond the scope of the participants’ zone of proximal development. Despite the commerce with the teacher during the pre-lesson coach brief and the teacher intervention within the task Josh (or his peer participants) were unable to effectively interpret the social mediation tools to internalize the higher mental processes required to understand the composite elements of this higher order solution to creating space in attack.

Pathway (5) Student Coach Elaboration of Content to Participants

As stated previously, the focus of didactic research is on the interactions between the teacher and learner that are specific to the content taught. Within this perspective there is an assumption that participants co-operate within the “instructional task system” (Hastie & Siedentop, 1999, p.13) and consistently attempt the task. CDIs are thus classified as classroom episodes in which failure in the teaching-learning process is observed and the failures are content, not student discipline-related incidents. If the participants exhibit overt “off-task” behavior during the peer assisted learning tasks, this would not necessarily be a breach in the didactic contract but from a didactic perspective a problem related to the management task system.

*Participant Engagement in Peer Assisted Learning Tasks.*

The high levels of participant opportunity to respond (OTR) evident across the peer-assisted learning tasks provided evidence that the peer participants cooperated within the instructional task system and the breaches in the CDIs were not a function of the management system. Data suggest that throughout the unit Josh was successful in obtaining compliance from his peers in the peer assisted learning tasks associated with
the curriculum. Hastie (2000), using an ecological perspective, has theorized that compliance within tasks and sustainability of the program of action is due to the teacher’s management task system being embedded in the student social system of peer assisted learning tasks. Although not a specific focus of this study, data from coach and participant debriefs provided some support for this assertion. Josh reflected that getting compliance to attempt the task was not that hard as, “there was peer pressure and that was enough to get people to do it” (Post-lesson coach debrief, lesson 9). Josh also seemed to gain peer compliance in tasks due to his coaching approach. Evidence from interviews suggested he gained respect from his teammates because they perceived he was dedicated and patient with them. Carla stated, “I thought Josh was a good coach because he really wanted the team to do well and so he spent time with us to try and get us to improve”. Sally also reflected, “He was good because he was patient, although you could tell people not listening frustrated him, he didn’t show it” (Post-lesson participant debrief, lesson 13).

The acceptance of Josh as a peer leader and the overt evidence of peer compliance and engagement with the stated task of the curriculum provides support for Kirk and Macdonald’s (1998) that the structure of the Sport Education model offers students opportunities to engage in communities of practice. Lave and Wenger (1991) defined these communities of practice in terms of an apprenticeship model of learning. Wenger (2003) describes an apprenticeship as not limited to the study of a student and a master but a more complex relationship through which learning takes place with more advanced apprentices. Within the peer assisted learning tasks of the Sport Education curriculum the coach is not a ‘master’ but rather an individual given opportunities to learn knowledge
that separates them as a more ‘advanced apprentice’. The domain of the team of students within the curriculum is also not necessarily recognized as “expertise” (Wenger, 2003, p.1) outside of the particular community of practice. Wegner (2003) stipulated that what is important for a community of practice to exist is that the participants, “value their collective competence and learn from each other, even though few people outside the group may value or even recognize their expertise” (p.1). From interview evidence with the coach and participants it is clear that the participants of this study valued their collective competence in relation to achieving success in the Sport Education season and so engaged within tasks in the form of an apprenticeship towards a trajectory of greater collective competence within game play.

Coach Pedagogical Knowledge.

Despite Josh’s successes in facilitating a high level of peer compliance with the instructional task system, his transformation and elaboration of some higher level strategy content during the peer assisted learning tasks was a major cause of breaches in the didactic contract.

Shulman (1986) defined pedagogical knowledge as, “the knowledge of forms of organization of context and communications that allow for the act of effective teaching” (p.9). Within the dynamic of peer assisted learning tasks, Josh was faced with the task of quickly and effectively organizing his peers to participate in the intended tasks. Data from Josh’s initial organization of participants within tasks revealed he was generally effective in communicating tasks that were aligned with the intended design. He adopted a pedagogical approach of delineating the roles involved (e.g. “we need three attackers and two defenders”, lesson observation, lesson 11) and directing the participants to the
designated starting points. Configurations in the data suggest that as the unit progressed
Josh became more proficient in better demonstrations and more effective transitions. He
achieved this by learning to scaffold the organizational features of the task onto
participants’ previous experience of the task.

We’re doing the thing you guys did last time. You know the crossing thing. So
you’re going to run on a diagonal (content element #2) and pass when you need
to alright? (Josh, lesson observation, Switch move task, lesson 10)

Josh’s elaboration of the content required to be successful in the task was often
more problematic for participants. Josh’s verbalization of the intended content of the
tasks to his peers varied considerably across tasks. During the 1v1 Head On task (lesson
7), for example, he delineated the outcome goal of the task but did not provide any focus
of the content knowledge required to be successful in the task:

When I say ones, the two ones will each go around their cone and then they’ll
meet in the middle and the attackers will try and get to the other side and score as
the defender tries to defend and take their flag, OK go! (Josh, lesson observation,
1v1 Head On task, lesson 7)

This lack of overt emphasis on content created a breach in the didactic contract
with participants having a misaligned concept of the focus of the task. During other tasks
(e.g. 2v1 Pass and Support, lesson 8, 3v2 Moving it wide, lesson 11) Josh facilitated
breaches in the didactic contract of content learned by providing over elaborate
explanations of content. During the initial organization of the 2v1 Pass and Support task
(lesson 8), for example, Josh’s initial explanation of the content in the task included all of
the content elements that were emphasized on the coach’s task card.

Here’s just a few little tips, don’t pass too early and wait for the defender to
commit to you (content element #4), means wait for them to make the first move.
The attacker without the ball, keep your distance (content element #5) and do not
get in front of the ball carrier (content element #3). When we play the game that’s
a key point, do not get in front of the ball carrier. And if your going to do a fake pass try and make it look real and try to sprint off in the other direction, when your trying to do that (content element #8)” (Josh, lesson observation, 2v1 Pass and Support task, lesson 8).

This overload of information confused his peers such that they focused on the generic goal of beating the defender without paying attention to the necessary strategy content required. The result was a persistent failure in the task and misalignment with the intended outcome of attacking with width and appropriate timing of the pass. Research on effective teaching skills (e.g. Siedentop & Tannehill, 2000) has shown that novice teachers need to reduce the number of content elements first presented to students to 2 or 3 critical elements. Josh’s presentation of all the critical elements during the initial explanation of the task highlighted deficiencies in his basic pedagogical knowledge that served to hinder his transposition of content. Patterns of data across tasks also revealed, on occasion, Josh managed to balance giving sufficient verbal information for the participants to engage with the intended task without being overloaded regarding the strategy to adopt to be successful. An instance of this aligned coach elaboration of content occurred during Josh’s initial explanation of the Switch Move (lesson 9).

This time we are going to try and beat Carla by using the switch move. In this move, instead of running straight at Carla and passing to the support player the ball carrier runs across her and the support player runs in the opposite direction and we turn and pass the ball as we get in front of her. If you look at the picture we cross each other and pass the ball as we cross” (Josh, lesson observation, 2v1 Switch Move, lesson 9).

A confounding factor that emerged as part of Josh’s initial elaboration of the content seemed to be his lack of demonstrations. Analyses of data from across episodes showed Josh failed to provide any demonstration of the tasks during 60 percent of the peer assisted learning tasks. When he did provide an initial demonstration (e.g. sidestep,
swerve, lesson 5, 3v2 Moving it Wide, lesson 11, 2v1 Loop Move, lesson 12) they were less effective as he was the only participant in a three or five person task. Although this strategy was effective in demonstrating the technique for the individual evading maneuvers, the clarity of representation of the content embedded in a more complex task such as the 3v2 Moving it Wide task was less effective.

The effect of the lack of coach demonstration on actual content learned was pronounced. For example, during the 2v1 Pass and Support Move (lesson 9), it was only after the teacher intervened during the lesson to demonstrate keeping distance between players that the participants understood the relevance of attacking width to execute an offensive overload situation. The success rate at the task increased from 33 percent to 64 percent after the teacher’s intervention (table 4.13.). Data from coach interviews revealed that Josh understood the value of demonstration in facilitating learning though he didn’t often execute them:

If they were finding it difficult I would probably find whoever understood it the most and have me and them try and explain it to the person. I would then try and demonstrate it and then kinda pause and make sure they understood it and stay on the practice a little longer. (Josh, pre-lesson coach plan, lesson 5).

Despite this knowledge of the relevance of demonstration within coaching Josh did not reflect on his lack of demonstration as a contributing factor to problematic peer performance during tasks. Josh’s failure to regularly utilize appropriate demonstrations may have stemmed from their absence in the pre-lesson teacher brief sessions. Coaches were not provided with a demonstration of the task and were also not given the proviso to complete demonstrations of the intended content of the task during their initial explanation.
From a Vygotskian perspective of the efficacy of peer assisted learning strategies this failure in the coach education protocol may have limited the potential of the student coach to provide effective communication and so accentuated more of a child-child knowledge dyad than a coach-student dyad. Although the student coaches were provided opportunity to pose questions regarding content to the teacher during the pre-lesson coach brief this strategy may have been insufficient to foster a increase in the coach pedagogical knowledge and thus facilitate a expanded ZPD for the peer participants. A more appropriate solution may have been to provide a “guided-practice” (Siedentop & Tannehill, 2000) scenario during the early peer assisted learning tasks where the teacher provided a demonstration of the task to the whole group and the student coaches were then responsible for replicating the task within their own peer group. This pedagogical strategy may have presented the student coaches with a visual representation of the task that could have been used as a reference for more relevant error detection feedback.

**Pedagogical Content Knowledge**

Data from lesson observations reveal that the most common method of content transposition adopted by Josh during the peer assisted learning tasks was the use of post-trial verbal feedback. Coach feedback statements across episodes revealed that feedback tended to occur at regular intervals within the episodes and was generally neutral (neither positive or negative) and specific to a single content element. Data from the trial-by-trial analysis of tasks (tables 4.11, 4.13, 4.14, 4.16) shows that the majority of these feedback statements were made in response to an incorrect performance of a specific piece of content. These data suggest that Josh was able to provide relevant error detection feedback during the peer assisted learning tasks in an attempt to reduce the breach in the
didactic contract. Although this finding seems to contradict previous findings that student coaches within the Sport Education are unable to provide the quality of error detection feedback needed by fellow students to learn the content of the lesson or unit (Carlson, 1995; Hastie, 2000), an important caveat must be included.

Analysis of the impact of Josh’s coach feedback statements on subsequent participant performance on the specific targeted content element (e.g. staying behind ball carrier) revealed the feedback was generally effective in facilitating re-alignment of the intended content. A pattern emerged across tasks, however, that the feedback statements Josh provided were not effective in reducing the breach in the didactic contract for the participants to be consistently successful in the task. An example of this pattern occurred during the 2v1 Pass and Support Task during lesson 8. Josh provided relevant error detection feedback related to the content of behind support position (element #3) and timing of the pass (element #4). The breach in the didactic contract for the outcome of the task was the critical content elements of the ball carrier not running forward quickly enough (element #2) and lack of distance between offensive players (element #5). Josh elaborated appropriate content feedback but the content element on which he was focused was not the critical failing element.

This failure of the coach to diagnose the critical piece of content causing the problematic breach in the didactic contract and provide pertinent feedback may be a function of the complexity of the task. For each of the ‘strategy’ tasks (e.g. 2v1 and 3v2 overload situations) there were at least 5 elements of content knowledge required to be performed appropriately for the participants to consistently succeed in the task. The large amount of content required in the task may have limited Josh’s ability to isolate and
identify the critical failure element and subsequently provide appropriate feedback to peers. Further evidence of Josh’s inability to diagnose critical content elements during higher complexity tasks was shown during the post-lesson coach debriefs. Josh consistently apportioned blame for the failure of his peers to execute the offensive overload tasks to the quality of the defender:

He [Todd] was really going towards them, which meant that they had to have an awareness of space and of where you can pass the ball and how to get around him. It was over the point where it needed to be and was so high (too fast) that we were unsuccessful at the loop move (Josh, post-lesson coach debrief, 2v1 loop move, lesson 12).

Although a valid rationale for failure, this attribution highlighted Josh’s misunderstanding of the totality of content embedded in the task. These data may begin to provide a potential explanation for the equivocal nature of the findings of much of the research (e.g. Behets, 1997; Silverman, Subramaniam & Woods, 1998) on the effectiveness of feedback on student performance in physical education. These studies suggested that teacher feedback plays a limited role in the instructional effectiveness of teachers.

The analysis of feedback data from the peer assisted learning tasks within this study suggests that the assertions made in previous studies may be inappropriate due to the unit of analysis chosen to determine effectiveness. The use of generic ‘outcome’ task performance measures may have served to oversimplify the relationship between feedback and student learning of content (Oslin & Stroot, 2000). Further inquiry is needed into the efficacy of feedback statements, based not on performance ‘outcome’ goals of the task (e.g. beating the defender to score passed the try line), but the performance of the specific content element to which the feedback is directed. This
research may also serve to provide a greater insight into the role of teacher content knowledge within this dynamic and their ability to provide diagnosis of the critical content element during a task.

Evidence from data on Josh’s feedback behavior during lower complexity tasks, such as the sidestep and swerve technique tasks revealed he was able to diagnose critical failure elements during tasks and thus reduce the breach in the didactic contract:

When you’re doing it you want to distance yourself from the cone a little more, change foot around it, it’s almost like a weight transfer from one foot to the other (Josh, lesson observation, sidestep (cone) task, trial #3, lesson 5).

In addition to feedback statements being aligned with intended content of the task Josh also demonstrated advanced levels of pedagogical content knowledge in his feedback statements. In response to Todd’s failure to demonstrate the appropriate change of direction within the sidestep move, Josh utilized a figural representation of the intended content by utilizing the analogy of “imagining the cone is a corner of a house”. This representation reflects a Deweyan perspective on assimilated learning, Dewey argued that using metaphors helps students to see phenomena in a new light (Prawat, 2002). Shulman (1987) also emphasized the role of analysis within the development of pedagogical content knowledge and the appropriate choice of representation of feedback content to students. In the sport domain, Griffey (2004) revealed that highly effective coaches utilize figural representations of content during feedback to promote learning.

Analysis of Josh’s feedback statements across episodes shows that his PCK was not consistently advanced. Across many of the tasks Josh used feedback phrases that were ambiguous in relation to the specific content required. An example of this behavior was his persistent use of the phrase “be aggressive” to represent the content of the ball
carrier running forward quickly into space. The ambiguity of the phrase led to misinterpretation of meaning by several of the participants. An example of this occurred during lesson 8 when Sarah asked her peer, Carrie, for clarification of the meaning of the feedback statement, “What does he mean by be aggressive?”. Carrie replied, “It means you have to run faster”.

Analysis of patterns of Josh’s behavior in the elaboration of content to his peers revealed that one of the major inadequacies in his pedagogical content knowledge and a significant cause of breaches in the auxiliary didactic system was his lack of understanding of the design of tasks and task modification. Although the researcher was responsible for task design within the unit, Josh seemed unable to analyze the constraints of the tasks and diagnose their effect on the intended content knowledge to be taught. This lack of knowledge is understandable considering his lack of training in task design and minimal preparation to teach or coach his peers.

Insufficient knowledge of task constraints manifested in Josh’s peers persisting at tasks that were misaligned from the intended design and were developmentally inappropriate for their stage of learning. An example of this dynamic occurred during lesson 6 when Josh misinterpreted the design of the 2v1 task, yet persisted in having his peers participate in a 2v3 task that was too difficult for their skill level. Josh’s lack of knowledge of the impact of task constraints on content learning also limited the effectiveness of his task modifications. During the 2v1 Pass and Support task (lesson 8) Josh modified the task to facilitate offensive success by extending the length of the field. This adaptation had the effect of actually making the task easier for the defender and
harder for the offensive players to be successful in beating the defender. Josh did not recognize the implication of this task adaptation.

Although his understanding of the constraints of tasks on student learning seemed to improve as a result of teacher intervention with this task (e.g. restricting movement of defender in 2v1) his choice of developmentally appropriate tasks during the final lessons was ineffective for peer content learning. During lesson 13, for example, Josh modified the 3v2 Moving it Wide task to create a 2v3 with static defenders. His intended focus for the adapted task was for his players to work on timing of the pass in relation to the defender. The response of the participants was significantly misaligned with this goal as the participants utilized evading maneuvers to avoid having their tag stolen while running forward between defenders. This strategy did not involve making a pass to a receiver so the content taught and learned was significantly misaligned. This evidence highlights a potential problematic effect of allowing the student coach to be responsible for the choice of the content intended to be learned within the peer assisted learning tasks of the Sport Education curriculum.

**Research Question 2. What tag rugby content knowledge do participants understand and perform as a result of the peer-assisted learning tasks of the Sport Education unit?**

2.1. What (mis)alignments existed between the knowledge and performance unit goals intended by the teacher and actual student knowledge and performance during practice and game play situations.

Having provided a synopsis of patterns of participant behavior during the peer assisted learning tasks that served to shape the alignment/misalignment of the didactic contract across the unit the second research question focused on the impact of these
behaviors on the specific content actually learned as a result of the unit. Data presented in chapter 4 (figures 4.8 - 4.14) described the change in participant knowledge and performance of the intended content to be learned as a result of the peer assisted learning tasks of the unit. The following section provides a summary of the alignment of actual content knowledge learned by participants and the pathways that shaped this learning.

**Maintaining Possession of the Ball**

The two primary content elements required to maintain possession of the ball on offense in tag rugby are to be able to accurately pass and receive the ball (content element #1) and adopt a support position that is not in front of the ball carrier (content element #3). Analysis of participant game performance data in lesson 15 showed that by the end of the Sport Education unit all of the participants had learned these two content elements such that the team consistently maintained possession of the ball during the 4v4 scrimmage games. An 85 percent and 90 percent mean success rate was exhibited for passing accurately and behind support position respectively. Change in performance of passing accuracy revealed that many of the participants could accurately pass the tag rugby ball prior to the start of the peer assisted learning tasks of the unit. Carrie was the only participant who increased her passing accuracy during the peer assisted learning tasks. Josh’s elaboration of the appropriate technique of passing during “possession tasks” such as 4v1 and 3v2 Keep Ball seems to have facilitated participant performance of this on-the-ball skill.

The peer assisted learning tasks were effective in the development of participant content knowledge of behind support position. Post-lesson interviews across tasks revealed that all the participants understood the critical nature of retaining a behind
support position to success in executing the offensive overload tasks and participation during game play. Josh persistently provided feedback related to “staying behind the ball carrier” (lesson observation, 2v1 Pass and Support task, lesson 8) during tasks and this explicit elaboration of the content seemed to have facilitated the participants’ knowledge and performance of the content element.

The consistent performance of adopting a behind support position during game play may, however, not be a result of explicit coaching behavior during tasks but the necessity of compliance with the specific rules for game participation. In other words, without consistently maintaining a behind support position the participants would have been excluded from active participation in the game. This notion of necessity of content knowledge has commonalities with Lave and Wegner’s (1991) notion of legitimate peripheral participation in a community of practice. The legitimacy of practice is determined by its meaning or significance to the individual or other community members (Kirk & MacDonald, 1998). From a participation perspective, without staying behind the ball carrier the individual participant would have been excluded from the community of practice on offensive game play.

The notion of necessary compliance with specific tactics or strategies to participate in games (communities of practice) has not been differentiated within the sport pedagogy literature. Protagonists of tactical teaching (e.g. Lee, 2004) have argued that for students in physical education to consistently perform strategies in games the strategy content needs to be explicitly taught. This assertion may be an overgeneralization of the realities of content learning within legitimate peripheral communities of practice in physical education. If a community of practice is established
which legitimates a piece of content knowledge (e.g. staying behind the ball) for participation then compliance with the content becomes an individual necessity. The content is necessary as without compliance the individual cannot continue on the trajectory from peripheral to full participation in the community of practice (i.e. participate fully in the game). The learning of this content may therefore be implicit within the rule boundaries of the community of practice and not necessarily required to be as explicitly taught as strategies that improve quality of play but do not prevent the game continuing.

Creating Space In Attack

During the peer assisted learning tasks of the unit of Sport Education several content elements related to creating space on offense were presented to participants. These content elements varied in level of complexity from the appropriate timing of the pass and maintaining distance between offensive players (level II) to the ball carrier executing a fake pass or loop move (level III) to changing the angle of support (level IV). End-of-unit game performance data (table 4.23) revealed a differentiated level of participant learning of the content elements of creating space in attack content related to the level of tactical complexity. Results of the participant performance of the timing of the pass showed that by the end of the peer assisted learning tasks, when participants chose to make a pass in a game, they consistently performed the pass after committing a defender. The didactic analysis of the evolution of this piece of content during instructional tasks revealed that during early offensive overload tasks (e.g. 2v1 Pass and Support, lesson 8) this content was problematic for participants. The coach’s lack of knowledge and error detection feedback related to this content within tasks initially
created a breach in the didactic contract between intended and actual learning. After lesson 8 Josh seemed to demonstrate an understanding of the relevance of this content and actively sought to coach it during subsequent similar overload tasks (e.g. 2v1 Pass and Support, 3v2 Moving it Wide). Josh would often use the feedback statement, “pass when you have to not because you need to” to emphasize this content element. The ambiguity of this feedback statement was again initially problematic for participants. However, his subsequent elaboration of its meaning seemed to facilitate participants learning of the content (post-lesson interview, lesson 11) and being able to perform it in games. He explained his interpretation of this feedback during the 3v2 Moving it Wide task:

Pass when you need to not because it is written down. You want to wait for her to come to you and then pass. (Josh, lesson observation, lesson 11)

The outcome was a resolution of the breach in the didactic contract for the content of timing of the pass such that subsequent performance of the content element was not the critical failing element in the task.

The results of participant performance of the other level II solution to creating space in attack, namely, maintaining width in support (5) was more problematic. Results revealed that, although there was an improvement in the participants’ utilization of this strategy during game play at the end of the unit, the use was inconsistent. Analysis of performance of the content during instructional tasks revealed it was a critical failure element during both episodes of the 2v1 Pass and Support move and in the final 3v2 moving it Wide task (lesson 13). Interview data at the end of the unit revealed that only
Josh and Carla understood the importance of maintaining distance between offensive players to create space in attack.

Observation of coach behavior during the tasks focused on maintaining distance between offensive support players revealed Josh failed to focus on this content element. He tended to attribute the defender stealing the tag of the pass receiver to either the offense not running quickly enough or the defender being too fast. The coach’s lack of focus may have been due to the lack of emphasis placed on the content element during the pre-lesson teacher brief. It was only after several teacher interventions and demonstrations within tasks to emphasize this “width” element that Josh seemed to learn the content and begin to provide feedback statements on the element during tasks. This late learning of the content element by the coach may explain why he was the only participant to consistently demonstrate the content during end of unit game play.

Results of participants’ performance level III and IV solutions to creating space in attack revealed the participants failed to learn this content during the peer assisted learning tasks. Analysis of the participants’ inability to perform the content of the loop, fake pass and switch moves during simpler instructional tasks is reflected in low occurrence of these strategies during the more complex game play situation. Analysis of participant behaviors during the evolution of the content embedded in a switch move revealed that the complexity of the content required to execute this move was problematic for the coach. The move required not only the consistent performance of content learned in the previous 2v1 Pass and Support tasks, such as running forward into space and committing the defender it also required new adaptations of content such as an
alternative technique and timing of the pass. Josh did not seem to understand the nuances of these adaptations to content but instead focused again on the intensity of the defender:

They got tagged. I think it wasn’t because they weren’t doing the correct thing. Once again I had a problem telling people no and stuff and Carla being the defender again. One of her greatest strengths is that she is good at defending but that does not necessarily make it good for our offense. (Josh, post-lesson interview, 2v1 switch move, lesson 10)

This lack of content knowledge made it very difficult for the coach to provide an effective demonstration of the content or diagnose errors in the performance of his peers. From a theoretical perspective the content of the task was beyond the coach’s zone of proximal development and thus prevention of the problematic didactic breach in the didactic contract became difficult for the coach to achieve by himself.

The rationale for the peers’ failure to perform level III solutions of the ball carrier performing a loop or fake pass during game play may not have been due to the content being beyond the coach’s ZPD but as a result of the coach’s ineffective transposition of the content to his peer participants. During pre- and post- lesson coach interviews, Josh demonstrated his understanding of the content of fake passes and the loop move. Despite this content knowledge, few of the participants seemed to understand or perform the strategies during instructional tasks or game play. An analysis of the 2v1 loop move task (lesson 12) revealed that although Josh understood the performance elements of the task the lack of quality in his demonstration and ambiguous feedback statements (e.g. “get behind”) seemed to contribute to the failure of his peers to learn the intended content and they never attempted the strategy during game play.
To effectively utilize space in attack, the participants were required to run forward quickly into the space between defenders (1) and/or utilize evading maneuvers once in proximity to the defender (6). Analysis of participant game performance in lesson 15 (table 4.23) revealed that by the end of the unit the participants were inconsistent (59 percent success of OTRs) in their use of running forward quickly into space when in possession of the ball during game play. Josh was the only participant who consistently demonstrated the content element during scrimmage games.

His understanding of the importance of running forward quickly is illustrated by looking at the frequency of occasions he provided feedback relating to this content during tasks. During six of the seven offensive overload tasks Josh made reference to either “run forward” (Josh, lesson observation, 2v1 Pass and support, lesson 8) or “be aggressive” (Josh, lesson observation, 3v2 task, lesson 13) as feedback statements during tasks. The didactic analysis of the evolution of this piece of content during instructional tasks revealed that for many of the participants the performance of running forward quickly into space was problematic. During the first episodes of the 2v1 Pass and Support (lesson 8) and the 3v2 Moving it Wide tasks (lesson 11), the participants’ failure to consistently demonstrate the specific content was a critical element in their failure of the task. The inconsistent level of participant performance of the content during instructional tasks may have been influenced by Josh’s ineffective elaboration of the content during tasks. Josh failed to provide an appropriate visual demonstration of the running pace required to commit the defender during offensive overload tasks. Although his feedback was aligned with the intent of the tasks, without a visual representation the coach and participants did
not seem to be able share a common interpretation of the performance required. This lack of ‘shared language’ (McInerney & McInerney, 2002, p.45) led to a significant breach in the didactic contract of content learned.

Analysis of end of unit participant performance of the level II solution of using evading maneuvers (table 4.23) revealed a repeated pattern of problematic performance of the content during game play. As with the level I solution of running into space, Josh was the only participant who consistently adopted the strategy of utilizing evading maneuvers during game play. Analysis of a breach in the didactic contract during lesson 5 helps to explain this pattern. During the implementation of the Bulldog task, Josh failed to emphasize the task constraint that the defender was allowed to move. The result was that the participants were able to utilize the space between defenders without having to demonstrate the newly learned evading maneuvers of the sidestep and swerve. This task misalignment limited successful participant performance of the content within similar constraints during a 4v4 game and so many of the participants chose not to adopt the strategy content during game play.

4. Did the participants learn, as a result of the peer-assisted learning tasks, any additional content knowledge not intended by the teacher. What was the relevance of this content knowledge to participant performance?

Within the theoretical perspective of didactics there lies the assumption that a perfect matching between the teacher and the students’ perspectives is unrealistic. This mismatch serves to create implicit negotiations within the task, which continually changes the content taught (Amade-Escot, 2000a). Analysis of configurations in the data of the effect of peer-assisted learning tasks on participant learning of additional content
not intended by the teacher reveal two main patterns of ‘added’ participant content knowledge. These two patterns are categorized as modified technique and modified strategy.

Modified Technique

A search for patterns of participants modifying technique to provide additional content not intended by the teacher revealed that this was not a common theme of behavior. Results of end of unit participant performance of the content of passing and receiving the ball during game play (table 4.23) revealed that all of the participants learned the intended technique for accurate, lateral passing of the ball during game play. The one instance of participant modification of content technique occurred during the switch move task. During the switch move task one of the critical failure elements was the adapted technique of turning and providing a short pass to a support player arriving from a perpendicular direction. The participants attempted to adapt their passing technique to include a turning motion but the resultant modification was to turn in the wrong direction in an attempt to ‘hand the ball over’. The analysis shows that Josh was concerned with his participant’s performance of the technique of turning towards the support player and passing as on five separate occasions he provided them with error correction feedback regarding this content:

Make sure you have a good hold on that ball and pass to the side. Don’t hold the ball behind you turn towards the player who is coming behind you. (Josh, lesson observation, switch move, trial # 14)

Despite this coach intervention the ‘added content’ implemented by the participants contributed to a failure in the participants being able to execute the switch move.
Modified Strategy

Analysis of patterns of participant performance of strategic content during instructional tasks and game play again revealed a high level of alignment between intended and actual content learned. The strategies consistently adopted by participants during game play, although not inclusive of all intended content, were aligned with the lower level complexity content presented in the unit. An explanation of this lack of evidence for the manifestation of additional strategy content may lie in the progressive, directed nature of tasks utilized within the unit.

The peer assisted learning tasks implemented within the Sport Education unit were highly structured in terms of both organization and content. The tasks were generally designed to be progressive in terms of students being able to scaffold from experience of content within previous tasks to solve the more advanced tactical problems of subsequent tasks. The sequence of tasks across the unit allowed for repetition of problematic tasks (e.g. 2v1 Pass and Support, 2v1 switch Move, 3v2 Moving it Wide) and therefore provided multiple opportunities for the student coach to implement and reinforce the intended content elements. The coaching points provided to student coaches across many of the tasks (e.g. offensive overload tasks) were both consistent and explicit. This aligned planning strategy along with the high level of student coach “active supervision behavior” (Hastie & Siedentop, 1999) during tasks may have reduced the possibility for students to significantly modify the task to introduce additional content knowledge.

The exception to this pattern of behavior occurred during participant development of *defensive* content. The defensive content intended to be learned by participants in the
unit were the strategies of closing down the space in front of the ball carrier (11) and maintaining a lateral line in defense with distance between players (12). Results of end-of-unit participant performance on defensive content (table 4.23) revealed that, with the exception of the student coach, all of the participants failed to learn the intended defensive content. Analysis of participant performance in game play revealed a modified strategy of defense not intended by the teacher. During defensive scenarios Josh would be the only participant to consistently run forward quickly to close down the space in front of the offensive ball carrier. The remainder of the participants would adopt the strategy of remaining in a lateral line and only moving towards the ball carrier if the ball carrier evaded Josh’s attempts to steal the tag. The resultant team defensive formation was closer to a ‘vertical’ formation with each defender providing ‘cover’ for the player in front of them.

The emergence of this unanticipated participant defensive content knowledge may be explained by the failure of the student coach to explicitly teach the intended defensive content during the relevant tasks. The tasks designed to teach the intended defensive content elements were the 1v1 Head On and Team Defend tasks during lesson 7. These tasks provided a breach in the didactic contract of content learned as Josh misinterpreted the focus of the content in the tasks as offensive rather than defensive content knowledge. Resultant in-task coach behavior emphasized the relevance of the tasks for offensive strategy. The tasks in lesson 7 provided the only opportunity for the explicit elaboration of defensive content knowledge in the unit. The evolution of participant knowledge of defensive content was therefore a result of the 4v4 scrimmage games. The ‘vertical formation’ defensive strategy consistently demonstrated by participants during game play.
emerged and was reinforced by its success against the offensive running strategy presented by most opponents. This strategy was less effective when opponents utilized an offensive strategy that included passing and creating width in attack.

**Research Conclusions**

The purpose of this study was to examine the development of tag rugby content knowledge of a team of 6 students participating in peer-assisted learning tasks of a unit of Sport Education. Analysis of changes in knowledge and performance of content as a result of the peer assisted learning tasks revealed that participants developed knowledge and could consistently perform during game play many of the level I and II intended content solutions to offensive tag rugby problems. Specifically, the peer assisted learning tasks of the Sport Education unit were efficacious in developing participant tag rugby content knowledge of maintaining possession through accurate passing and a behind support position, creating space in attack through appropriate timing of the pass, and utilizing space in attack by running forward quickly into space when in possession of the ball. The peer assisted learning tasks were ineffective in developing participant content knowledge of the intended higher complexity (level II and IV) solutions to offensive tag rugby problems including creating space using width, the fake pass, loop or switch moves.

The didactic analysis of the evolution of content knowledge across tasks revealed a high level of participant engagement with the intended content of the peer assisted learning tasks. This regularity and pattern of participant engagement with the intended content of peer assisted learning tasks provided evidence that the participants formed a “community of practice” (Kirk & Macdonald, 1998, p.381). The participants consistently
interacted with each other to form a community (Wenger, 2003) and developed a shared a repertoire of formal and informal resources to develop content knowledge (i.e. practice). These resources or mediational tools included coach task cards, teacher interventions, coach feedback and stimulated reflection of performance. The multiple peer assisted learning tasks of the Sport Education unit provided the participants an opportunity to engage in an apprenticeship model of learning where full participation was defined in terms of a learning trajectory towards more effective game play within the season.

Analysis of the evolution of the didactic contract and participant activity across task episodes showed that several contextual factors (pathways) significantly shaped the evolution of the alignment/misalignment of content actually learned. The utilization of explicit coach task cards that delineated the organization, progression and content embedded in tasks was an effective methodology for maintaining alignment during the didactic transposition of content from researcher to teacher to student coach. Problematic breaches in the didactic contract between intended and actual content tended to emerge during the coach’s elaboration of content to peer participants or the phase of didactic transposition during the auxiliary didactic system. Despite his aligned content knowledge and active supervision within tasks, the coach was unable to effectively communicate higher order content solutions to tactical problems. This ineffectiveness was due to lack of PCK in the form of minimal understanding of appropriate demonstrations, diagnosis of critical content, task constraints and relevance of feedback statements.

A primary source re-alignment of content learned and extension of the participants’ zone of proximal development occurred during direct teacher intervention within tasks. These interventions were effective in facilitating necessary breaches in the
auxiliary didactic contract with the teacher elaborating content to participants based on advanced pedagogical content knowledge strategies. The in-task teacher interventions served to extend the ZPD of the peer participants by providing a model of reference to the coach for the elaboration of the critical content within subsequent trials of the task. This finding highlights the critical nature of the teacher in the role as “facilitator” in the provision of effective content learning within peer assisted learning tasks.

Another potential source of coach and peer participant development of content knowledge may have been the utilization of the stimulated recall interview protocol. This data collection methodology presented the participants an opportunity to regularly reflect on both their task performance and the coaching behaviors. This stimulated reflection would not normally occur within a Sport Education curriculum unit and may have provided a powerful influence on the evolution of participants’ content knowledge development.

The evolving patterns of coach and participant behaviors across tasks as the unit progressed suggests that the practices (content learned) produced by the community of learners (team) were subject to the social contexts of the situation and these dynamics defined what was learned and how learning took place (Lave & Wegner, 1991). The dynamic, situated development of content learning demonstrated by participants within the contexts of peer assisted learning tasks emphasizes the progressive nature of content knowledge development that occurs in the contexts of Sport Education. As Penney (2003) suggested this evidence of evolution of knowledge has implications for the research community. Learning within Sport Education should be conceptualized as an
ongoing engaging process, not a fixed instantaneous event and therefore the research methodology adopted to study this phenomenon must reflect this epistemology.

The didactic methodology and analysis utilized within this study allowed for the micro-analysis of content development both within, during and across multiple tasks. The analysis protocol of categorizing participant performance and coach feedback statements within each trial of all the problematic tasks of the unit provided a greater insight into the contextual factors that shaped the emergence of the didactic contract both within and across tasks. This richness and depth of description not only allowed validation for assertions but also provides a “sharper lens” to understand the dynamic evolution of content that occurs within the situated contexts of communities of practice in physical education. These findings in themselves provide a rationale for the methodology.

Recommendations for Teachers/Teacher Educators

This study examined the dynamics of participant behavior that served to shape the evolution of content that occurred within the peer assisted learning tasks of a tag rugby Sport Education unit. Although Siedentop (1994) outlined the structural features and pedagogical strategies required to attain his intended goals and objectives for the curriculum he also voiced his concerns (Siedentop, 1998) at the void that currently exists, “in how to identify, teach, and provide practice for the leadership skills necessary for successful student coaching within the tasks of the curriculum” (p.22). The findings of this study present some empirical foundation for recommendations of how to facilitate aligned student content learning within the instructional approach of peer teaching instructional tasks.
The high degree of alignment exhibited between the researcher’s intended learning goals and the content intended to be taught by the student coaches validates the practices adopted within this intervention to transpose content to coaches. The use of coaching task cards that delineated the organization, sequence and specific solutions required to perform the task were an effective way to communicate content to student coaches.

The frequency of problematic breaches in the didactic contract that occurred during the student coach’s elaboration of content to peers highlights the need to educate coaches on content communication. The provision for a more thorough elaboration of the pedagogy required to deliver the content of tasks was required. This could have been achieved by implementing a “guided-practice phase” during the early peer assisted learning tasks of the unit. During this phase the teacher would provide a demonstration of the task to the whole group prior to the student coaches establishing the tasks within their own peer groups. The provision of an authentic demonstration of the expected performance outcome of the task within the lesson may have the potential to develop a greater coach awareness of the pedagogy of demonstration and also provide a visual model as a reference for the diagnosis of critical errors. This pedagogical strategy may be particularly suited to Sport Education units where the students have little previous experience of the curriculum or the activity to be taught (e.g. tag rugby).

The efficacy of teacher intervention within tasks in re-aligning participant (including coach) knowledge of content to be learned highlights the importance of the teacher in the role of facilitator. During the enactment of peer assisted learning tasks of the Sport Education unit, the teacher had more opportunity for observation and analysis.
of coach and participant performance than in teacher-directed tasks. This time must be
used effectively to diagnose critical breaches in the didactic contract and provide
effective interventions. The quality of an intervention in eliciting a necessary breach in
the didactic contract was dependent on the teacher’s pedagogical content knowledge. To
facilitate this process the teacher may need to choose instructional tasks and modified
games that they both understand and can communicate effectively.

The results of this study suggest that the choice of content to be learned may also
impact the alignment of content knowledge development. Both the coach and participants
found the higher order strategy content to be problematic. Teachers utilizing the Sport
Education curriculum must balance the need for content knowledge of both technique and
strategy. The implementation of strategic content knowledge must be progressive, with
students allowed the opportunity to repeat content in more constrained environments.
This recommendation has many similarities with Launder’s (2001) principle of play
practice. Within play practice a task is modified with a specific constraint placed to
emphasize a new piece of content knowledge. Based on the empirical evidence of the
evolution of content development within this study this approach may be an appropriate
solution.

Research Recommendations

This study represents the first known North American sport pedagogy research
project to utilize the didactic methodology to understand student content knowledge
development within physical education. The methodology and data analysis techniques
utilized suggest potential for greater insights into the teaching-learning process during
both the Sport Education curriculum and physical education teaching methods as a whole.

1. One of the limitations of this study was its focus on one small group of students and specifically a single student coach. The interactive behavior patterns exhibited by the participants during learning tasks may or may not be particular to the situated learning environment and the social interactions that occur within the specific community of practice. Future research needs to utilize the didactic methodology to provide a cross-case analysis of the evolution of content across groups within the same setting. This analysis would provide greater insight into the general patterns of the types of communities of practice that evolve within a Sport Education curriculum.

2. A feature of content knowledge development that emerged during the peer assisted learning tasks of this unit was the maintenance of a powerful program of action that sustained alignment between actual and intended content learning goals. Didactic research (Amade-Escot, 2000) conducted within regular teacher-directed instructional approaches has identified that students regularly modify the task and introduce additional content even when there is no dysfunction in the managerial task system. Peer assisted learning tasks may have the potential to facilitate more aligned content learning due to the more overt supervision that is present within the small group format. Future research is required to compare the instructional approaches on the evolution of content knowledge through the analysis of the didactic contract.
3. The didactic methodology allows for micro-level analysis of the teaching-learning process in the evolution of content. During the past decades there has been fervent debate within the sport pedagogy literature on the efficacy of the ‘tactical versus technical’ approaches to teaching content. Proponents of the tactical approach (e.g. Bunker & Thorpe, 1983; Griffin, Mitchell & Osln, 1998) have argued that a constructivist question and answer pedagogy within the framework of modified game tasks may be more facilitative of student strategy content knowledge and game play performance. Research to date, has not provided a sufficient description of the dynamics of the teaching-learning process that occurs within this approach to warrant assertions. The didactic methodology may provide the micro-level analysis required to validate the claims of the efficacy of the approach in facilitating student knowledge of content.
LIST OF REFERENCES


Gleyse (Eds.), Enseigner l’éducation physique et sportive (pp.61-73). Grenoble, France: AFRAPS.


APPENDIX A

STUDENT LETTER OF CONSENT
Dear Student,

My name is Tristan Wallhead and I am a graduate student at Ohio State University. In February, 2004 I am conducting a study to examine students' learning in a sport-based curriculum called Sport Education. I would like to invite you to participate in this research study. The Sport Education curriculum is designed for students to participate in more meaningful and motivating sport experiences within physical education lessons. The curriculum has many of the features of sport including seasons, formal competition and appropriate training regimes. Learning within the model is centered around the teacher helping students teach each other, with students taking responsibility for the roles associated with sport including coach, captain, referee and statistician. The study will monitor you leadership and communication skills within the roles associated with the curriculum and investigate the development of your knowledge of game play strategies and techniques as the season progresses.

If you agree to participate in this study, you will receive sixteen, 45-minute physical education lessons based on the Sport Education curriculum. Your performance during the student-led practices and regular small-sided games of the curriculum will be videotaped. You may also be subjected to short individual interviews prior to, during and after each lesson of the unit in order to determine your opinions of the practices and learning during the curriculum. In order to monitor your verbal interactions the student task leaders will also wear a small, corded microphone attached to a dictaphone enclosed in the zip pocket of a pinnie. You will be provided a pseudonym, which will be used to maintain confidentiality and only the researchers will view the videotapes. Your responses will be voluntary on all interviews. All videotapes and audiotapes will be destroyed once the study is completed.

Your participation in this study is voluntary and you can withdraw at any time without affecting your grades or participation in the physical education class. If you would like to participate in this study, would you please sign the attached consent form and return it to Miss Bittner as soon as possible. If you have any questions regarding the study, please feel free to ask your teacher or contact me, Tristan Wallhead by e-mail: wallhead.2@osu.edu or my advisor Sarah O’Sullivan (688-4701, osullivan.1@osu.edu)

Thank you for your time.

Sincerely,

Tristan L. Wallhead MSc

Mary O’Sullivan, PhD
Advisor to Mr. Wallhead
APPENDIX B

SPORT EDUCATION UNIT LESSON PLANS AND COACH TASK CARDS
Lesson 1 – Introduction

Learning Objectives: Students understand the basics of what Sport Education is and also the basic rules of tag rugby

Introductory speech
What is Sport Education?
Unit of Phys Ed where you learn not only to participate in sport as a performer but also act as a coach, referee and run a unit of PE like it is run in out-of-school sport.

How is it different to normal PE?

- It is longer – this unit will be 16 lessons long and will go up to spring Break.
- We will run it as a sport season: We will be doing tag rugby and we will start with me teaching you the basics of the game including the rules and basic skills such as passing. For the whole season you will be in teams of five with each member of the team taking a sport role in the team. The roles we will be using are coach, captain, referee and scorer. As we get into the season you will take over the responsibility for teaching and training your team and helping your team play better in the season games. We will have a preseason phase then a formal competition phase towards the end of the unit. The season will finish with you being involved in a culminating event, like the Olympic ceremony, with awards being presented to people who have worked hard, played fair and helped each other with the jobs of running a season.
- This unit will be a lot of fun if you act responsibly. I will help coaches and captains plan their training sessions, however, the season will only work well if you provide responsible leadership, which means listening to each other and helping each other improve. This is what will make the most successful team.

We need to start by going over some of the rules of tag rugby and the best ways to learn this is by having a go at the game
Use of Tags
Like flags in Flag football

Demonstrate putting on a tag
(Tags down your sides)

SCARECROW TAG
1. 4 teams in four designated areas (teams of about 6)
2. Demonstrate with one team
3. Designated tagger
4. Trying to take tag from other players. If take tag player goes into scarecrow position, TAG MUST BE HANDED BACK to scarecrow player before can continue to tag other players
5. No fending off
6. To free scarecrow any free player must go under the arm
7. Count the number of tags you take in 30 seconds
8. Change tagger
9. Make 2 taggers
10. Stretch

GAME TO UNDERSTAND RULES OF TAG RUGBY

Organization: 4 teams again but only 4 players on the field at any one time

Initial rules;
1. Demonstrate on one field
2. Like playing football the aim of the game is to carry the ball over the endline (tryline)
3. If you get tagged in possession of the ball you must stopped within a stride and pass the ball to one of your teammates
4. No tackles only take the tag
5. Tagger must hand the tag back
6. If the ball hits the ground the opposition gets a free pass to one of their players
7. Whoever is the last to touch the ball loses possession
8. If the ball goes out or the person with the ball steps out of bounds the opposition get a free pass
9. The game starts with a free pass with the opposition behind their tryline
10. For now you can pass it in any direction

PLAY

1. Rotate players in
2. New rule: You can only pass sideways or backwards – not forwards

PLAY

1. New rule: Offside
2. After a tag all the opposition must get in front of the ball carrier (by about 6 strides) (Demonstration)
3. You cannot stay standing next to the opposition players

PLAY

FINISH – Summary

*I have introduced the game of tag rugby and you should have some idea of the basic rules even though you are not quite sure after a couple if classes you will understand the game better it is new. Next class you will start in your teams and I will go through the different roles of coach, captain and you will select in your teams who is going to fill each role. I would like 5 volunteers to be my Sports Board. You will meet with me on Monday lunch recess and we will rate the players in the class and then those five (with my help) will select fair teams for the season. This will be done for next Monday as we carry on with the season and get into our teams.*
Lesson 2 – Roles and Responsibilities and team building

Learning Objectives:
1) Students begin to develop team co-operation and communication skills using cooperative games.
2) From their interaction they are to decide who is going to be responsible for each role during the season.
3) Students review 4v4 tag rugby game with overview of rules.

Task 1: Posting of Teams
1. Students are to get into the teams posted on scoreboard
2. Explanation of how teams were selected

Task 2: Co-operative Games in teams

Today we are going to see how you work and cooperate in the teams as your success in the Sport Education will be dependent on your ability to work well with each other and make good choices for the roles you are going to do. We are going to start with some problem solving practices and cooperation games before you decide who will best suited to the different roles

Game 1: Team Juggle

The object of the game is to see how many objects the team can juggle at once

Organization:

1. Have each group of five participants form a circle.
2. Have the group choose an object they want to start juggling with (e.g. bean bag, tennis ball, rugby ball)
3. The juggling starts with one member tossing the object to a teammate and then they toss to another teammate, etc.
4. Tell the group that it is very important that each group remember the order in which the object was tossed.
5. Once a pattern has been set with one object, try the same pattern using two objects, then three, up to five objects.
Game 2: Titanic
Objective: Each member of the team is to escape from Titanic across the freezing sea to the rescue boat using the life-rafts

Organization:

![Diagram of Titanic setup](image)

**Rules:**

1. The gym floor is the freezing water so not allowed on the floor without being stood in a liferaft (hula hoop)
2. Only one person is allowed in a liferaft at any one time
3. Can move the liferafts but once stood in a liferaft you cannot move
4. Anyone left on the gym floor without a hula hoop (freezing water) is sent back to the titanic
5. Only 3 hula hoops allowed

*Progression:* 2 hula-hoops allowed

*Solution:* Students travel in a rotating manner, with an empty liferaft placed in front

Task 3: Review of point of cooperative games

*What is important when we are trying to solve group problems? Leadership, listening to others ideas, etc.*
**Task 4: Selection of team roles and responsibilities**

From those games you may have some idea who are good leaders, who listens to others and who may best fit the roles of each of the Sport Education season

Hand out roles and responsibilities contract and review the duties of each role.

Each team must have a captain, coach, referee and 2 scorers. Looking at the roles what type of person would be best suited to coach, captain, scorer, referee? What skills does each role require? (Discussion)

Now in your groups you are to decide who in your team is going to carry out which role. The chosen captain is then to fill in the team sheet and all participants are to sign the contracts that I will keep.

**Task 5: (If time) review of tag rules in a 4v4 game in teams**

1. Review of tag positions
2. When a defender takes a tag must shout “TAG”
3. No spinning to avoid being tagged
4. No blocking of defenders by other attacking players (as in football)
5. Must stop within 2 strides
6. Must pass it as soon as opposition are “onside”
<table>
<thead>
<tr>
<th>Time</th>
<th>Learning Objectives</th>
<th>Learning Tasks</th>
<th>Organization</th>
<th>Teaching Cues</th>
</tr>
</thead>
</table>
| 5–10 mins| ♦ Develop ball handling skills  
♦ Develop technique of passing and receiving ball  
♦ Increase student’s quick ball handling skills in the game | Warm-up activity 4v1 (3v2) keep ball game within group  
➢ 4 (3) attackers play against 1 (2) defenders  
➢ Attempt to try and make 10 consecutive passes  
➢ Review of rules for tagging from previous lesson including handing back of tags, shouting tag, | • 15x15 yd grid  
• When offensive team makes 10 passes or defender steals tag of ball carrier change defender  
• Make sure players are adhering to rules of tags  
• No overhead passes | ♦ Run into space  
♦ Offense support players get into a passing lane  
♦ Pass quickly, be ready to receive |
|          |                                                                                      | Stretch – Captain-led                                                           |                                                                              |                                                    |
|          |                                                                                      | Auckland Grids                                                                 |                                                                              |                                                    |
|          |                                                                                      | ➢ Players run across diagonal of the grid and perform several ball handling tricks while running with the | • X X  
• Groups of 10–15 (3–4) | ♦ Do the ball handling tricks without looking at the ball  
♦ Make sure the body is moving forward as do the skill  
♦ Be aware of other players running |
<table>
<thead>
<tr>
<th>Grids Extension task</th>
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<tbody>
<tr>
<td>Ball per cone)</td>
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<tr>
<td>• Through legs</td>
<td></td>
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<tr>
<td>• Round body</td>
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<tr>
<td>• Faking to pass left and running forward</td>
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<tr>
<td>Run to the middle and pass to the cone to your left</td>
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<td>Run to the middle and pass to your right</td>
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<tr>
<td>Start with only 2 balls per grid with a ball at two of the corners of the grid</td>
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<tr>
<td>Player passes to player at cone to left and runs forward to join back of line at opposite cone</td>
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<tr>
<td>15x 15 yd grid</td>
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<tr>
<td>Run across diagonal</td>
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<tr>
<td>Ball on each cone</td>
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<tr>
<td>Once completed run pass ball to player at front of line at opposite cone</td>
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<tr>
<td>15x 15 yd grid</td>
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<tr>
<td>Run to the middle and pass to your right</td>
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<tr>
<td>30x 30 yd grid</td>
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<tr>
<td>• Start with only 2 balls per grid with a ball at two of the corners of the grid</td>
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<tr>
<td>• Player passes to player at cone to left and runs forward to join back of line at opposite cone</td>
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<tr>
<td>• Repeat but this time pass to right (more difficult)</td>
<td></td>
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<tr>
<td>• Look where you are passing</td>
<td></td>
</tr>
<tr>
<td>• Don’t pass to a receiver who is not ready</td>
<td></td>
</tr>
<tr>
<td>• Receiver’s making a target with hands</td>
<td></td>
</tr>
<tr>
<td>• When passing bring ball across front of body</td>
<td></td>
</tr>
<tr>
<td>• Pass to a target</td>
<td></td>
</tr>
<tr>
<td>• Pass quickly and level</td>
<td></td>
</tr>
<tr>
<td>4v4 Game</td>
<td>Referee</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>➢ Small sided game with all tag rugby rules</td>
<td>➢ Emphasis on passing and receiving of ball</td>
</tr>
</tbody>
</table>

**Equipment and Resources Needed**
- 20 tags
- 16 balls
- 2 whistles

Cone
Lesson 4 – Development of passing technique and support position
(Teacher-directed)

Learning Objectives:
1) Students begin to develop technique of passing accurately
2) Students learn appropriate first support position for ball carrier
3) Students time release of pass when being tagged.
4) Students review 4v4 tag rugby game with overview of rules.

Task 1: Posting of Teams
1) Students are to get into home base area and the team on task
   first receives bonus points
2) Explanation of bonus points
3) Consent forms??
4) Positioning of tags on players

Task 2: Captain-led “Auckland Grids” warm-up (combined groups)

Task 3: Teacher-led “Pass and support” practice (See attached sheet)

Teacher demonstrates with one group while other students sat around square.

Task 5: “4v4 game”

Review rules:
1. Pass from center
2. Must hand back tag
3. When tagged must pass ball within 2 strides and 3 seconds
4. Player not allowed in game unless has 2 tags attached
5. NO SPINNING
6. Defenders must get back in front of ball from a free pass.
**Practice: Auckland Grids**

**Skill:** Controlled passing and receiving  
**Tactic:** Awareness of other moving players, appropriate timing of pass

![Diagram of Auckland Grids]

**Organization:**
- Groups of ten players
- Grids 10yd x 10yd
- All players wear tags
- Two balls (one on each of opposite corners to start)

**Directions:**
1. Players run across diagonal of the grid then pass ball to waiting player  
2. Perform several ball handling tricks while running with the ball (Through legs, Round body, round waist)  
3. Run forward, pass to the left, and run forward  
4. Run forward, pass to the right, and run forward

**Coaching Points:**
- “Mind the traffic – Run without collisions”  
- “Two hands on the ball at all times”  
- “Hands up ready to receive the ball”  
- “Don’t pass to a receiver who is not ready”  
- “Point the ball at the receiver”
**Practice: Pass and Support**

Skill: Accurate passing, receive the ball moving
Tactic: Appropriate support position at side of ball carrier. Run forwards when have ball.

---

**Organization:**
Groups of five players  
Grids 10yd x 10yd  
All players wear tags  
One ball per group

**Directions:**
1. Player 1 runs five strides and passes the ball to the right  
2. Player 2 supports the ball carrier, catches the ball level with the ball carrier and runs another five strides and passes the ball to the right  
3. This carries on until all players have passed and received the ball  
4. Repeat the drill but passing to the left

**Coaching Points:**  
“Two hands on the ball at all times”

“Run forward when you have the ball”

“Support players make sure you stay slightly behind the ball carrier”

“When you have passed the ball slow down so you stay behind the next ball carrier”
Lesson 5 – Development of running and dodging skills
(Coach-directed)

Learning Objectives:
1) Students begin to develop skills of swerving and sidestep to avoid being tagged
2) Students learn to run at spaces not faces

Task 1: In Team area
Students are to get into home base area and the coach is to lead session

Task 2: Coach-led “sidestep” practice (See attached sheet)

Task 3: Coach-led “swerve” practice (See attached sheet)

Task 4: Coach-led “Bulldog” practice (See attached sheet)

Task 5: “4v4 game”

Review rules:
  i. Pass from center
  ii. Must hand back tag
  iii. When tagged must pass ball within 2 strides and 3 seconds
  iv. Player not allowed in game unless has 2 tags attached
  v. NO SPINNING
  vi. Defenders must get back in front of ball from a free pass.
Practice: Sidestep

Skill: Be able to perform a sidestep while moving with the ball

Organization:
- Groups of five players
- Grids 10yd x 10yd
- All players wear tags
- One ball per runner

Directions:
1. The lead player runs into the grid and performs a sidestep around the middle cone by stepping off the right foot
2. They then turn at the far side and run back this time sidestepping around the middle cone by stepping off the left foot.
3. Ball is then handed to the second player who takes his/her turn.
4. Once completed around a cone put in a stationary defender.

Coaching Points:
- “Two hands on the ball at all times”
- “Plant the outside foot, then take ball and head over the planted foot”
- “Push off the planted foot in a different direction”
- “Speed away”
**Practice: Swerve**

Skill: Be able to perform a swerve move while running with the ball

- O Attacker with ball
- X Defender
- △ Marker cone
- ← Path of Defender
- → Path of attacker
- ---- Path of ball

**Organization:**
- Groups of five players
- Grids 10yd x 10yd
- All players wear tags
- One ball per runner

**Directions:**
1. The player runs at the cones and shapes to run right, then swerves to the left and around the cones as shown.
2. They then turns and repeats the exercise back to the start line.
3. Change the cone for a stationary defender

**Coaching Points:**
- “Two hands on the ball at all times”
- “Smooth continuous running style”
- “Draw the defender off balance and run a curve around them”
**Practice: Bulldog**

**Skill:** Be able to perform a swerve and sidestep (dodging) moves to avoid being tagged  
**Tactic:** Choosing to run into spaces and not faces

O Attacker with ball  
X Defender  
△ Marker cone  
← Path of Defender  
→ Path of attacker  
----- Path of ball

**Organization:**  
Groups of five players  
Grids 10yd x 10yd  
All players wear tags  
One ball per runner

**Directions:**  
1. On the coach’s call all attackers try to run past the defender to reach the other side of the grid.  
2. The defender attempts to tag the attackers as they pass.  
3. The players who are tagged stay where they were tagged and become a STATIONARY tagger along with the original moving tagger.  
4. The game continues until there are no free attackers.

**Coaching Points:**  
“Attackers look for space to run into”  
“Use the swerve and sidestep to avoid being tagged”  
“Defenders focus on the tag and hand back the flag after tagging”
**Lesson 6 – (Pre-season) Development of decision making during overload situations (Coach-directed)**

Learning Objectives:
1) Students develop better passing technique over 5 yd distance under pressure
2) Students learn to develop decision making of timing off pass in an overload situation (2v1)

**Task 1: Coach-led warm-up – “Bulldog”**

with another group with 2 taggers and running from one end of the gym to the other

**Task 2: Coach-led “2v1” practice (See attached sheet)**

**Task 3: “4v4 game” with duty team**

Review rules:
1. Pass from center
2. Must hand back tag
3. Referee makes decisions on free pass
4. NO SPINNING
5. Must get back ONSIDE before free pass is taken
Lesson 7 – (Pre-season) Defending as a team (Coach-directed)

Learning Objectives:
1) Students understand the principles of man-to-man defense.
2) Students can adopt a good position to defend their opponent and
   defend as a unit with each person working to stay opposite an
   opposing player.

- As soon as get team into home base area captain is to organize a game
  of scarecrow tag (no ball).
- Then introduce an adaptation of scarecrow tag where 2 taggers (1 ball)
  have to tag the players by touching them with the ball.
- The taggers can run with and pass the ball to their partner. They are
  NOT however allowed to throw the ball at players.

Task 1: Coach-led warm-up – “Team defend” (see attached sheet)

Task 2: Coach-led “1v1 head on” (See attached sheet)

Task 3: “4v4 game” with duty team

Focus is to develop refereeing skills

Review rules:
1. Pass from center
2. No forward passes
3. Referee makes decisions on free pass
4. Referee to get opposing players back on-side quickly
5. Blow whistle when there is a violation (e.g. forward pass,
   knock to the ground

Captains to be in charge of team tactics during game

Focus: Support players stay behind the ball carrier
       When you have the ball DO NOT run backwards
**Practice: Team Defend**

Skill: Be able to defend as a group such that each defender is marking an opposing player

Tactic: Defenders should keep an equal distance between themselves

![Diagram of practice setup]

**Organization:**
- Groups of five players
- Grids 10yd x 10yd
- All players wear tags
- No ball required

**Directions:**
1. The coach stands out in front of the group.
2. When he/she points to the team’s left the whole group must shout LEFT and move as a group to the left.
3. If the coach points to the right the team moves as a group to the right.
4. If the coach shouts up the whole team moves up and the Todde if they shout BACK.

**Coaching Points:**
- “Everyone must work together”
- “Keep as a straight line and keep the same distance between you”
- “Move quickly into position imagining that a free pass has been given”
**Practice: 1 v 1 Head On**

Skill: Defender moves to cut down the space the attacker has to work in  
Tactic: Get opposite the defender early and force them to do a sidestep

![Diagram showing O, X, Marker cone, Path of Defender, Path of attacker, Path of ball]

**Organization:**  
Groups of five players  
Grids 10yd x 10yd  
All players wear tags  
Each attacker (O) has a ball

**Directions:**  
1. Line of attackers and defenders in pairs.  
2. The attacker has the ball and each pair has a number.  
3. When the coach shouts the number the pair run around the cone and then the attacker tries to beat the defender and score a try.  
4. Go to 2 attackers and one defender.  
5. Go to 2 attackers and 2 defenders (make sure the coach joins in)

**Coaching Points:**  
“Defenders be quick to cut down the space the attacker has to run into”  
“Get opposite them quickly and try and to anticipate what the attacker is going to do”  
“In the 2v1 the defender should not over commit to the ball too quickly and try and fool the attacker as to where they are going”  
“In the 2v2 the defender mark man-to-man and move as a team”
Lesson 8 – (Pre-season) Decision-making when attacking in an overload situation

Learning Objectives:

1) Students are able to perform an effective ‘fake pass’ move on offense.
2) Students develop more efficient decision-making skills when in an offensive overload situation.

Task 1: Auckland grids
➢ As soon as get team into home base area captains organize the grids game with the team next to them.
➢ Progress:
   i. Running quickly with the ball
   ii. Running and performing a sidestep around oncoming player
   iii. Run forward, pass to the left, run forward
   iv. Run forward, fake pass to the left, run forward

Task 2: Coach-led practice – “2v1 to the try line” (see attached sheet)

Task 3: “4v4 game” with duty team

Focus is to develop refereeing skills

Review rules:
1. Defender must shout TAG when they steal a tag
2. Defense to QUICKLY get back onside for a free pass
3. Must take free pass from where ball hit floor or where tag stolen
4. MAXIMUM OF FIVE TAGS BEFORE POSSESSION CHANGES

Captains to be in charge of team tactics during game

Focus: Support players stay behind the ball carrier
When you have the ball run forwards
When about to be tagged release the ball to free support player
**Practice: 2 v 1 Pass and Support**

Skill: Utilize pass and support, sidestep and dummy pass to beat the defender.
Tactic: Attackers learn options for executing a 2v1 overload situation

![Diagram of practice setup]

**Organization:**
- Groups of five players
- All players wear tags
- Attackers in pairs
- One defender defending try line AB (middle of grid)
- One ball per pair of attackers

**Directions:**
1. Pair of attackers try and score passed the single defender to try line
2. Start with pass and support move. As defender comes to the ball carrier attacker makes a pass to support player who runs onto try line.
3. Go to attacker dodging around defender. This is done if defender does not decide to go to first attacker with ball and stays with support player as anticipates pass.
4. Go to fake pass. This is where ball carrier fakes pass to support player and runs on to try line.

**Coaching Points:**

**PASS AND SUPPORT:**
- “Don’t pass too early wait for the defender to commit to you”
- “Support player keep distance and don’t get in front of ball carrier”
- “Ball carrier look where you are passing”

**SIDESTEP:**
- “If defender tries to fool you and go to support player don’t pass the ball but run on quickly”

**FAKE PASS:**
- “Try and make it look like you are going to pass and then sprint off in the other direction”
Lesson 9 – (Pre-season) Decision-making when on offense

Learning Objectives:
1) Students are able to perform an effective pass and support move when faced with more offensive players than defenders
2) Students are able to execute a “switch” move when faced with more offensive players than defenders.

Task 1: warm-up 2-player ball tag
- As soon as get team into home base area assign two players to be taggers, the rest are free players. Two taggers must tag the players with a single ball (no throwing) to freeze them in the scarecrow position.
- Progression: 2 taggers can pass the ball to each other but cannot move when they have hold of the ball.

Task 2: Coach-led practice – “2v1 to the try line (2)” (see attached sheet)

Task 3: Coach-led practice - “switch move” (see attached sheet)

Focus is to develop refereeing skills

Review rules:
1. Defender must shout TAG when they steal a tag
2. As soon as tag taken must pass the ball within 3 seconds so DEFENSE MUST QUICKLY GET ONSIDE
3. Must take free pass from where ball hit floor or where tag stolen
4. Blow whistle for a FREE PASS, when ball hits floor or there is a blocking, spinning or jumping from the ball carrier.
5. MAXIMUM OF FIVE TAGS BEFORE POSSESSION CHANGES

Captains to be in charge of team tactics during game

Focus: Support players stay behind the ball carrier
When you have the ball run forwards
When about to be tagged release the ball to free support player
**Practice: 2 v 1 Pass and Support (2)**

**Skill:** Utilize pass and support and fake pass to beat the defender.

**Tactic:** Attackers learn options for executing a 2v1 offensive situation

---

**Organization:**
Groups of five players  
All players wear tags  
Attackers in pairs  
One defender defending try line AB (middle of grid)  
One ball per pair of attackers

**Directions:**
1. Pair of attackers try and score passed the single defender to try line  
2. Start with pass and support move.  
3. **Defender can only move sideways to tag the ball carrier, they cannot move forwards or backwards**  
4. Ball carrier draws the defender to them first then passes quickly to support player (Walk through if needed)  
5. Go to fake pass. This is where ball carrier fakes pass to support player and runs on to try line.

**Coaching Points:**

**PASS AND SUPPORT:**  
“Don’t pass too early wait for the defender to commit to you”  
“Support player keep distance and don’t get in front of ball carrier”  
“Ball carrier look where you are passing”

**FAKE PASS:**  
“Try and make it look like you are going to pass and then sprint off in the other direction”
Practice: Switch move

Skill: Use “switch” move to beat a single defender
Tactic: Attackers learn different running options in a 2v1 offensive situation

![Diagram](image)

Organization: Groups of five players
All players wear tags
Attackers in pairs
One defender defending try line AB (middle of grid)
One ball per pair of attackers

Directions:
1. Pair of attackers try and score passed the single defender to try line
2. Walk through the switch move
3. **Defender must stand still when practicing walk through of move.**
4. Ball carrier runs at a diagonal across the defender.
5. Support player runs at opposite angle to ball carrier
6. As ball carrier gets to defender ball carrier turns away from defender to pass to support player who is arriving in opposite direction.

Coaching Points:

**SWITCH:**
- “Keep your eyes on the defender and don’t pass too early”
- “Turn in the direction you want to pass”
- “Hide ball from defender”
- “Support player is slightly behind the ball carrier”
- “LOOK WHERE YOU ARE PASSING”
Lesson 10 – (Pre-season) Passing and decision-making when on offense

Learning Objectives:

1) Students are able to perform a well timed pass,
   (when about to be tagged so have drawn the
defender to them and away from support players)
2) Students are able to perform different running
   angles to beat the defender, including the switch
   move.

Task 1: warm-up “4v1 or 3v2 keep ball” (see attached sheet)

Task 2: Coach-led practice – “switch and fake switch move” (see attached
   sheet)

Task 3: 4v4 game with refereeing and scoring

Need one referee and two scorers for each game

Review rules:

1. Defender must shout TAG when they steal a tag
2. As soon as tag taken must pass the ball within 3 seconds so DEFENSE
   MUST QUICKLY GET ONSIDE
3. Must take free pass from where ball hit floor or where tag stolen
4. Blow whistle for a FREE PASS, when ball hits floor or there is a blocking,
   spinning or jumping from the ball carrier.
5. MAXIMUM OF FIVE TAGS BEFORE POSSESSION CHANGES

Scorer to practice team performance evaluation and scoring (see attached
   sheet)
**Practice: Keep Ball**

Skill: Controlled passing  
Tactic: Run into open space, release ball when about to be tagged

![Diagram](image)

- ○ Attacker with ball
- O Attackers without ball
- X Defender
- ▲ Marker cone
- → Path of Defender
- → Path of attacker
- ----- Path of ball

**Organization:**

Groups of five players  
Grids 10yd x 10yd  
All players wear tags  
One ball per group

1. Four of the five players work as a team with the target of completing ten successive passes.  
2. Defender tries to tag player who is holding the ball  
3. Rotate the defender every time ball is dropped or player with ball is tagged.  
4. Change to 3v2 trying to make 10 passes  
5. No overhead passes  
6. Return tags immediately after removal

**Coaching Points:**

**Attacking Players**
- “Keep your head up while moving”
- “Look for space”
- “Hands up ready to receive pass”

**Defending player**
- “No interceptions of passes”
- “Focus on tag of ball carrier”
**Practice: Switch move + Fake switch move**

**Skill:** Use “switch” move to beat a single defender  
**Tactic:** Attackers learn different running options in a 2v1 offensive situation

![Diagram of the practice setup](image)

**Organization:**  
Groups of five players  
All players wear tags  
Attackers in pairs  
One defender defending try line AB (middle of grid)  
One ball per pair of attackers

**Directions:**  
1. Pair of attackers try and score passed the single defender to try line  
2. **Defender must only move sideways.**  
3. Ball carrier runs at a diagonal across the defender.  
4. Support player runs at opposite angle to ball carrier  
5. As ball carrier gets to defender ball carrier turns away from defender to pass to support player who is arriving in opposite direction.  
6. If defender does not go to ball carrier the carrier does a “**FAKE SWITCH MOVE**”- fake to pass ball and run on

**Coaching Points:**  
**SWITCH:**  
“Keep your eyes on the defender and don’t pass too early”  
“Turn in the direction you want to pass”  
“Hide ball from defender”  
“Support player is slightly behind the ball carrier”  
“**LOOK WHERE YOU ARE PASSING**”
Lesson 11 – (Pre-season) Passing and decision-making when on offense

Learning Objectives:
1) Students are able to make better decisions when on offense in the timing of passes and choice of runs

Task 1: Coach-led practice – “Moving it wide” (see attached sheet)

Task 2: 4v4 game with refereeing and scoring

Need one referee and two scorers for each game

Review rules:
1. Defender must shout TAG when they steal a tag
2. As soon as tag taken must pass the ball within 3 seconds so DEFENSE MUST QUICKLY GET ONSIDE
3. Must take free pass from where ball hit floor or where tag stolen
4. Blow whistle for a FREE PASS, when ball hits floor or there is a blocking, spinning or jumping from the ball carrier.
5. MAXIMUM OF FIVE TAGS BEFORE POSSESSION CHANGES

Scorer to practice team performance evaluation and scoring
(see attached sheet)
**Practice: “3v2 Moving it Wide”**

**Skill:** Run to spaces and make well timed pass in relation to oncoming defender

**Tactic:** Attackers learn different running options in a 3v2 offensive situation

![Diagram](image)

**Organization:**
- Groups of five players
- All players wear tags
- Three Attackers, 2 defenders
- Two defenders defending try line AB
- One ball per three attackers

**Directions:**
1. When the coach shouts go the attackers run around the cone and try to score on line A-B
2. The defenders run around their cone and try to prevent the attackers from scoring by tagging the ball carrier.

**Coaching Points:**
- “Don’t run across your own players, run forwards”
- “Draw the defender to you and then pass quickly”
- “Support players don’t lag behind stay close to the ball carrier”
- “Support players run to the outside”
- “Support players should be in a line”
- “LOOK WHERE YOU ARE PASSING”
Sport Education Tag Rugby Season

TEAM PERFORMANCE ANALYSIS

Team 1: ___________________ v Team 2: ___________________ Date: ______

<table>
<thead>
<tr>
<th>Team 1 Name:</th>
<th>Tries Scored</th>
<th>Passes Made</th>
<th>Tag steals</th>
<th>Total plays</th>
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<tbody>
<tr>
<td>Player 1:</td>
<td></td>
<td></td>
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<tr>
<td>Player 2:</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Team 2 Name:</th>
<th>Tries Scored</th>
<th>Passes Made</th>
<th>Tag Steals</th>
<th>Total Plays</th>
</tr>
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<tbody>
<tr>
<td>Player 1:</td>
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<tr>
<td>Player 5:</td>
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</tbody>
</table>

**Final Score:** Team 1: _____________ tries  Team 2: _____________ tries

Fair play points: Teams can pick up a maximum of FIVE fair play points for each game, one for ALL members of the team doing the following:
1 = Include all team members in game
1 = Verbally support own team members
1 = Verbally support other team members
1 = Listen to the referee
1 = Play within rules of game
Result points: 5 points for a win, 3 for a tie and 1 for a loss.

**TOTAL POINTS:** TEAM 1: ______________ TEAM 2: ______________
Lesson 12 – (Season) Passing and decision-making when on offense

Learning Objectives:
1) Students are able to perform a well-timed “loop” move when on offense.
2) Students are able to run around the back of the offensive line of players to create an extra player in attack.

Task 1: warm-up “coaches choice”

Task 2: Coach-led practice – “pass and loop” (see attached sheet)

Task 3: 4v4 game with refereeing and scoring

Field 1: GI Unit v Asian Shawtays
Field 2: Chili Peppers v Pie
Duty: Pink Panthers

Need one referee and two scorers for each game

Review rules:
1. Defender must shout TAG when they steal a tag.
2. Only blow whistle for a free pass, i.e. Forward pass, dropped ball
3. DEFENSE MUST QUICKLY GET ONSIDE after tag
4. MAXIMUM OF FIVE TAGS BEFORE POSSESSION CHANGES
**Practice: 2v1 Pass and loop**

**Skill:** Utilize pass and support then run around back of support player.

**Tactic:** Draw defender and then loop behind support player to create an extra player

---

**Organization:**
- Groups of five players
- All players wear tags
- Attackers in pairs
- One defender defending try line AB (middle of grid)
- One ball per pair of attackers

**Directions:**
1. Ball carrier runs toward defender and draws the defender to them
2. Passes to support player (not too early).
3. Ball carrier then “loops behind” support player to create an extra player on offense.
4. Support player draws defender and passes to loop player who is coming around shoulder.
5. EXTEND TO A 3v2 PRACTICE with the ball carrier looping around the third attacker

**Coaching Points:**
- “Don’t pass too early wait for the defender to commit to you”
- “Ball carrier don’t start running towards support player before passing as this will tell defender what you are doing”
- “Support player run forward with ball before passing to loop player”
- “Loop player move quickly”
Season Competition

Lesson 13

Field 1: Chili Peppers v GI Unit

Field 2: Pink Panthers v Asian Shawtays

Duty: Pie

Lesson 14

Field 1: Pink Panthers v Chili Peppers

Field 2: Pie v GI Unit

Duty: Asian Shawtays

Lesson 15

Field 1: Asian Shawtays v Pie  Pie v Pink Panthers

Field 2: GI Unit v Pink Panthers  Asian Shawtays v Chili Peppers

Duty: Chili Peppers  GI unit
APPENDIX C

SPORT EDUCATION UNIT STUDENT ROLE RESPONSIBILITY CONTRACTS
Coach Contract

I AGREE TO:

- Attend all lunch recess coaching briefings.
- Lead the team in all practice sessions.
- Be enthusiastic and organized conducting practices.
- Provide help and advice to players during practices.
- Listen to player’s opinions and ideas for practices and games.
- Make sure ALL players are given equal opportunities to practice and participate.
- When your team is on duty you are to be the referee for one of the games.

Name:_________________ Signature:_____________
Referee/Equipment Officer Contract

I AGREE TO:

➢ When my team is on duty, being responsible for being a referee of one of the games.

➢ Organize teams into their areas for games and decide the time of start of games.

➢ Report to coach/teacher any inappropriate conduct by players during games.

➢ Decide with the scorer the fair play awards during games and make sure they are reported on the score sheets.

➢ Organize the equipment for my team’s use at the beginning and end of each lesson.

Name: _____________  Signature:____________
Scorer/Statistician Contract

I AGREE TO:

➤ When my team is on duty, keep score of one the games.

➤ Report to the team’s coach and teacher any inappropriate conduct by players during games.

➤ Decide on fair play awards during games and make sure they are reported on the score sheets.

➤ Keep record of player statistics during games and give them to the coaches of the participating team.

➤ Start and finish timed games on the scoreboard.

Name:________________ Signature:_____________
APPENDIX D:

PRE-LESSON COACH INTERVIEW QUESTIONS
This preliminary pre-lesson semi-structured interview with the coach served to clarify their didactic intent for:

- Design and aim of the tasks
- Anticipation of individualized or adapted instruction to fit the different needs of the students.
- Expectations of how the students will perform in the tasks.

Questions asked:

1) What skill of tag rugby do you want your teammates to improve upon today?
2) What practices do you plan to do today?
3) What are the main objectives of each of those practices?
4) How do you think your teammates are going to do in the practices?
5) What are the important coaching points that you need to give the attackers in the side-step, bulldog practice?
6) Do you foresee any problems with any individuals in your group attempting to do these practices?
7) How do you think you may change the practice to adapt to these difficulties?
APPENDIX E

POST-LESSON PARTICIPANT STIMULATED RECALL INTERVIEW QUESTIONS
This stimulated recall interview gives the participants an opportunity to express her/his critical thinking about what happened during the lesson regarding the content taught and the students’ activities.

Questions asked:

1) Watching this practice you are participating in, what is the aim of the practice and what should you be doing?

2) What would be your comments regarding your performance in the practice? Were you happy with their performance? Why?

3) What should you have done to be successful at the practice?

4) What were the main difficulties you had in the practices? Why did you find that part difficult?
APPENDIX F

POST-LESSON COACH STIMULATED RECALL INTERVIEW QUESTIONS
This stimulated recall interview gave the student coach an opportunity to express his critical thinking about what happened during the lesson regarding the content taught and the students’ activities.

Questions asked:

1) Watching this practice that you set up, could you describe the aim of this practice and what your teammates should be doing?

2) What would be your comments regarding what your teammates did in the practices? Were you happy with their performance? Why?

3) Did your teammates do what you wanted them to do in the practices? What was their response to the tasks and to you?

4) What were the main difficulties the students had in the practices? Can you tell me about any examples of your teammates who succeeded in the practices? You said to …. and they did …. can you tell me why you think why they reacted like that?

5) If you were to do this practice again, how would you make it different, what would you change and why?
APPENDIX G

EXEMPLAR MATRIX DISPLAY OF PARTICIPANT BEHAVIOR DURING LESSONS (8)
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minute/second</td>
<td>What did the student leader do? (Non verbal interaction)</td>
<td>What did the student leader say?</td>
<td>To which student/s was the behavior directed? (Verbal interaction)</td>
<td>What did the students do? (Description of activity in task related to the content) Categorization of task from prior interview</td>
</tr>
<tr>
<td>You’ve got enough people out here get them started [Claire]</td>
<td>We’re doing this together right</td>
<td>[Josh]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes your doing it together</td>
<td>Yes your doing it together</td>
<td>[Claire]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We’re doing the thing where we go back and fourth with passes</td>
<td>We’re doing the thing where we go back and fourth with passes</td>
<td>[Josh]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We’re the coaches Todd [Chas]</td>
<td>We’re the coaches Todd [Chas]</td>
<td>[Chaz]</td>
<td></td>
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</tr>
<tr>
<td>Josh we’re doing the one thing in the beginning where you run and pass it to your left and right</td>
<td>Josh we’re doing the one thing in the beginning where you run and pass it to your left and right</td>
<td>[All]</td>
<td></td>
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<tr>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>No where you guys run across to this cone</td>
<td>No where you guys run across to this cone</td>
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<tr>
<td>So what are we doing captain? [Todd]</td>
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<td>The thing we did on the first day? [Sarah]</td>
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<tr>
<td>Where we were in a circle? [Carla]</td>
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</tbody>
</table>