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THE INFLUENCE OF CASE DISCUSSIONS ON PHYSICAL EDUCATION PRESERVICE TEACHERS' REFLECTION IN AN EDUCATIONAL GAMES CLASS

by

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APPROVAL PAGE

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The purpose of this study was to investigate and describe the influence of case discussions on physical education preservice teachers' reflection in an elementary educational games course. Reflection was defined as both skill and will. The skill of reflection included the ability to identify problems and generate solutions (flexibility) while drawing on relevant concepts or personal experiences (connectedness). The will of reflection included a desire to keep conclusions tentative for continued learning (viewing teaching as problematic) and a willingness to evaluate personal beliefs about teaching based on new information.

Participants were 12 preservice teachers enrolled in an elementary educational games course. Three narrative cases containing compelling stories about elementary physical education were discussed in the middle of the course by the course instructor/researcher and the preservice teachers. Multiple measures of preservice teachers' reflection skill and will were taken prior to and after the case discussions. Quantitative and qualitative data were used to describe the influence of the case discussions on preservice teachers' reflection. Data included a pre-and-post reflection orientation questionnaire, written reflections on physical education lesson episodes, and post-metacognitive interviews.

To assess their reflective skill, preservice teachers were divided into groups based on their initial orientations toward reflection (high-reflective, middle-reflective, low-reflective). Written reflections completed before and after the case discussions on the same lesson episodes were analyzed and

compared. All three groups improved in their reflective skill (flexibility, connectedness) on the post-written reflections. Supporting the numerical results, interview data revealed that students used course content (52%) and topics raised in case discussions (31%) to reflect on the post-lesson episodes. Students also found the cases to be interesting, relevant, and thought provoking.

Pre-and-post questionnaires and interview data were used to profile cases of students based on reflective will (viewing teaching as problematic, perceived meaningfulness). Four students were classified as oriented toward reflection at the end of the elementary educational games course. These students were contrasted with four who were classified as non-reflectively oriented at the end of the course. Connections between students' reflection orientations (will) and the case discussions are explored.

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CHAPTER I

INTRODUCTION

Considering the short amount of time that teacher educators have to affect the professional knowledge, skills, and attitudes of preservice teachers, it is not surprising that they are constantly seeking more effective and efficient uses for that time. It is well-documented that preservice teachers have compiled numerous hours in schools prior to their professional preparation (Lortie, 1975) and are heavily influenced by their initial beliefs (Doolittle, Dodds, & Placek, 1993; Hutchinson, 1993; Lawson, 1993). In an effort to substantially impact what preservice teachers know, how they think, and their attitudes about teaching, some noted teaching scholars have suggested the use of cases for teacher preparation (Doyle, 1990; Kagan, 1993; Kleinfeld, 1988; Merseth, 1996; Shulman, 1986, 1987, 1992; Sykes and Bird, 1992; Wassermann, 1993, 1994).

The idea of using cases for teacher preparation has been borrowed from the fields of law, medicine, and business. Today, all three professions use cases for various purposes. Law students are required to cite cases as precedents in the process of building persuasive arguments. This practice runs contrary, however, to the original use for law cases proposed by Christopher Columbus Langdell in the early 20th century. Langdell, in his role as president of Harvard Law School, viewed cases and case method teaching as means for helping students learn and understand theory that could be applied to various contexts (McAninch, 1991; Redlich, 1914).

The term "case" connotes something quite different to medical students and educators. Toward the end of their educational process, medical students become involved in clinical clerkships allowing them to work directly with patients, referred to as cases. Under supervision from their professors, medical students act as lead physicians for patients from the beginning of their stay until they walk out the door. The educational notion is that by studying a particular patient's history and symptoms in-depth, the would-be doctor is able to practice recognizing problems (diagnosis) and prescribing solutions (treatment) (Osler, 1969; McAninch, 1991).

Business educators have their own unique practices and purposes for cases. Business cases are generally descriptions of problems or dilemmas that have occurred in the business community. Students are asked to study and discuss information presented in the cases and propose solutions for the problem. Business educators consider the students' attempt to solve the problem as the most critical aspect of case use (Merseth, 1991).

The recent surge of interest in cases for teacher education began with Lee Shulman's presidential address to the 1985 annual meeting of the American Educational Research Association (Shulman, 1986). Shulman's advocacy of the use of cases for teacher preparation, coupled with the Report of The Carnegie Task Force on Teaching as a Profession (1986), prompted other teacher educators to give the idea serious consideration. Since then, numerous claims have been made purporting the pedagogical power of cases. It has been proposed, for example, that cases be used to facilitate the learning of pedagogical content knowledge (Barnett, 1991; Barnett & Cwirko-Godycki, 1988; Barnett & Tyson, 1993; Shulman, 1992; Wilson, 1992), multicultural

perspectives, (McNergney, 1994; Noordhof & Kleinfeld, 1991; Shulman & Mesa-Bains, 1990) decision making and problem solving skills (Greenwood & Parkay, 1989; Kleinfeld, 1992; Silverman, Welty , & Lyon, 1992; Stoiber, 1991; White, 1993), and teacher reflection (Harrington, 1991; Harrington & Hodson, 1993; Lundeberg & Fawver, 1994; Richert, 1991a, 1991b; Van Zoest, 1995).

Some of these advocates of case use for teacher education have differed regarding the nature of teacher knowledge; yet most believe that teaching is very complex. Although it may be that principles of good practice do exist, teaching is still highly contextualized or situated. The notion that teaching is not entirely predictable implies that teachers need an in-depth understanding of subject-matter, teaching, learning, and the context of schools (Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987, p. 6). They also need to be willing and able to identify problems in the context of the school and generate possible solutions to those problems. This complex process requires that teachers develop a flexible and connected knowledge base, have a desire to continue learning throughout their careers, and are willing to evaluate personal beliefs or assumptions about teaching based on new information (Kennedy, 1991; McDiarmid, 1989).

Dewey (1910, 1933) referred to this skill and attitude as reflective teaching. The reflective teacher can identify problems that arise in the workplace and draw on relevant information to help solve those problems. Dewey (1910, 1933) stressed that in order for people to attempt to solve problems genuinely, they need to be willing to confront their own beliefs about teaching and evaluate how those beliefs stand up to new information.

Schon (1983, 1987) expanded on Dewey's notion of reflection through his investigation into the thinking process of business professionals. He labeled as inadequate the practice of trying to apply theoretical principles rigidly to complex problems in variable professional situations. The reflective professional, noted Schon, must be willing to keep conclusions tentative as they actively frame and reframe problems within the context of the workplace (Schon, 1987).

Statement of the Problem

The purpose of this study was to investigate and describe the influence of case discussions on physical education preservice teachers' reflection. This descriptive study was embedded within a physical education elementary educational games class. Participants were 12 preservice teachers enrolled in the course. Three case discussions about elementary physical education took place in the middle of the course. Preservice teachers' reflection was assessed prior to and after their participation in the case discussions. Multiple data sources, both qualitative and quantitative, were used to describe the influence of case discussions on the changes in preservice teachers' reflection.

Reflection research reveals that preservice teachers enter programs with varying orientations toward reflection and differing abilities for engaging in it (Bolin, 1987; Calderhead, 1989; Gore & Zeichner, 1991; Korthagen, 1993; LaBoskey, 1994; Lanier & Little, 1986). A questionnaire was used to group students according to reflection orientation and ability at the beginning of the study. Preservice teachers were divided into three groups based on the results of this questionnaire: high-reflective group (HRG), middle-reflective group (MRG), and low-reflective group (LRG). Data were

divided by groups to describe the influence of case discussions on those with differing orientations toward reflection.

Reflection was divided into two parts including (1) reflection skill or ability, and (2) reflection will or attitude. Two research questions about reflection skill referred to thinking process and organization of knowledge:

1. What is the influence of case discussions on preservice teachers' flexibility (ability to identify problems and solutions in written reflections on lesson episodes)?
2. What is the influence of case discussions on preservice teachers' connectedness (ability to draw on relevant facts, theories (concepts) or personal experiences in written reflections on lesson episodes)?

Two research questions referred to preservice teachers' reflection will attitudes.

3. What is the influence of case discussions on preservice teachers' view of teaching as problematic (a desire to keep conclusions tentative and a recognition of a need for life-long learning)?
4. What is the influence of case discussions on preservice teachers' perceived meaningfulness (willingness to evaluate personal beliefs about teaching based on new information)?

Definition of Terms

The research questions that drove this study were derived from case literature and teacher reflection/knowledge literature. Case literature includes both a description of the use of cases in the professions of law, medicine, and business and theoretical possibilities for case use in teacher

education. Teacher reflection and teacher knowledge literature provide the backdrop for describing the influence of case discussions.

The variable of interest in this study is the discussion of three narrative cases specifically designed for the educational games course. The influence of these case discussions was assessed according to the reflective constructs of flexibility, connectedness, viewing teaching as problematic, and perceived meaningfulness. These terms are defined and explained below.

In her recent review of cases and case methods in teacher education, Merseth (1996) noted that cases are used for a variety of reasons and in a variety of ways in teacher education. Like case use in business, cases and case methods can take on many forms; therefore, only a broad definition is appropriate. For the purpose of this study, Levin's (1993) definition of cases, case method and case-based teaching provides a concise and comprehensive explanation of these terms:

> Cases are richly detailed, contextualized, narrative accounts of teaching and learning that are sufficiently substantive and complex to allow for multiple levels of analysis and interpretation. Good cases represent the problems, dilemmas, and complexity of teaching something to someone in context. Case method is the practice of using cases as a pedagogical tool in fields such as law, medicine, business, and education. Case-based teaching is a method of instruction that focuses on the use of cases as either a part or the central focus of the curriculum. (p. 2)

Cases can be written, video, oral, drama, or computer simulations; case methods can include writing cases, discussions, debates, role plays, and so on. Of utmost importance to teacher educators is the understanding that the choice of cases and case methods must match the intended educational

purpose. While some have considered them separately, Merseth (1996) warned that cases and case method should be considered a single unit. She argued that:

> the synergy of the two is much too powerful to ignore. To focus on discussion-based instruction or other methods without reference to the cases or material being discussed is analogous to considering teaching without reference to the learner or to the content being imparted. It matters both what is being discussed and how it is being discussed. (p. 16)

A complete explanation of the cases and case method used in this study is in Chapter III.

For this study, reflection is defined as both skill and will. The skill, or ability, of reflection includes the constructs of flexibility and connectedness (Kennedy, 1991). The will of reflection, also called orientation toward reflection or reflective attitude, includes the constructs of viewing teaching as problematic (LaBoskey, 1994; Zeichner & Liston, 1987) and perceived meaningfulness (Kennedy, 1991). These constructs are defined below; the origin and rationale of these constructs is in Chapter II.

1. Flexibility is the ability to identify problems and generate solutions (Kennedy, 1991). The number of problems and solutions that the preservice teachers identified in written reflections on physical education lesson episodes were counted separately. Flexibility scores on lesson episode written reflections completed before and after the case discussions were compared.

2. Connectedness is the ability to draw on facts, theories (concepts), or personal experiences (Kennedy, 1991). The number of concepts (facts or theories) and personal experiences that the preservice teachers identified in

written reflections on physical education lesson episodes were counted separately. Connectedness scores on lesson episode written reflections completed before and after the case discussions were compared.

3. Viewing teaching as problematic is a willingness to keep conclusions tentative, recognizing that teaching is complex, interesting, and evolving (LaBoskey, 1994; Zeichner & Liston, 1987). It is a desire to become better at what you do through constant learning "which stems, in part, from a commitment made in spite of ambiguity" (Harrington & Hodson, 1993, p. 3). Chapter V describes four preservice teachers who held this view at the end of the semester and four who did not. Connections between viewing teaching as problematic and the case discussions are reported.

4. Perceived meaningfulness is the willingness to confront and evaluate personal beliefs about teaching based on new information (Kennedy, 1991). Chapter V describes four preservice teachers who had this willingness at the end of the semester and four who did not. Connections between perceived meaningfulness and the case discussions are reported.

Assumptions

1. The adapted pre-and-post questionnaire (LaBoskey, 1994) is a valid and reliable indication of students' propensities toward reflection, especially the notion that teaching is problematic.

2. The individuals in this study were honest when completing the instruments and answering interview questions.

Limitations

1. This descriptive study includes a small sample of students that were not selected randomly, and no control group was used. Generalizablility from

this study is not possible. However, multiple data sources, both quantitative and qualitative, were used to provide a rich description of what occurred.

2. The researcher was also the teacher in the course and was biased toward wanting the case discussions to have a positive impact on preservice teachers' reflection. Multiple data sources and outside reviewers were used where appropriate.

3. Reflection skill was measured by scoring written reflections. Students who have writing difficulties may be more reflective than their writing indicates. However, writing style and clarity was not assessed when scoring written reflections

Significance of Study

The use of cases for professional preparation in teacher education is intriguing because of its potential to provide students with knowledge, skills, and attitudes that will help them effectively teach in the ever-changing public schools. Physical educators, in particular, are often faced with environmental conditions that require them to explore new solutions to problems. Physical education teachers need the ability to identify problems and draw information from a wide variety of sources to solve those problems. Teachers also need to be committed to keeping conclusions tentative for life-long learning and willing to confront and evaluate personal beliefs about teaching.

Cases, case methods, and case-based teaching have been touted as a means to significantly improve what and how preservice teachers think. However, as Merseth (1996) noted, "at this point, the collective voice of its proponents far outweighs the power of existing empirical work" (p. 1). Furthermore, although some studies have been conducted in teacher

education, there is no evidence from physical education that either supports of refutes the use of cases for teacher education. The same claims made by teacher educators concerning case use could be made for physical education teacher education. This study is designed to begin answering a few of the many questions regarding case use for physical education teacher preparation.

Finally, this research project is purposely being conducted within the context of a physical education teacher education class so that the created cases have potential use beyond this study, and the findings have the potential to immediately and directly affect physical education teacher education. Merseth (1996) recommended that case development and research on cases should be conducted concurrently. As a researcher and teacher educator, this notion of improving teacher education through study while developing teaching materials is appealing.

The first chapter of this dissertation identifies the research questions that guided this study. The questions were derived from teacher reflection, teacher knowledge, and case methods literature. Chapter II includes a survey of this literature as it relates to the research questions. The third chapter provides a detailed explanation of the methodology including a description of the context of the study and research paradigm. Chapter IV reports quantitative and qualitative results of the first two research questions concerning reflection skill (flexibility, connectedness). Results concerning reflection will (viewing teaching as problematic, perceived meaningfulness) are reported in Chapter V. Chapter VI contains a discussion of the results including recommendations for future case research and case use in physical education teacher education.

CHAPTER II

LITERATURE REVIEW

Introduction

In the never-ending task of educating future professionals, teacher educators have endeavored to find effective and appropriate methods for preparing beginning teachers. Cases, case methods, and case-based instruction have recently gained appeal in the eyes of teacher educators. The numerous claims regarding the pedagogical power of cases have teacher educators intrigued with the possibilities.

The primary thrust of this study was to determine whether participation in case discussions in an elementary educational games class influenced physical education preservice teachers' reflection. There are many different definitions for teacher reflection and theories of how to facilitate reflective thought in preservice teachers. Despite the differences, reflection has been called the new zeitgeist in teacher education (Zeichner & Tabachnick, 1991), and many teacher education programs have included the goal of developing reflective teachers into their mission statements. The research questions that guided this study were derived from two areas: (1) the history and theoretical foundations of case use, and (2) theory and research on teacher reflection and teacher knowledge.

The driving force behind each of the advocates of case use in teacher education is the vision of what makes a "good teacher." This seemingly simple concept, however, is complicated by differing opinions among those

who have a stake in the process of teacher education. The variable lenses from which teachers, teacher educators, students, and society view teaching substantially blurs the vision of what constitutes good teaching. Therefore, an investigation into the use of cases in teacher education is pointless unless one first looks ahead to the goals, or outcomes, that one is pursuing. This notion is analogous to a baseball pitcher learning to throw curveball. He must first consider the desired outcome of this new action. For the pitcher, studying the grip, angle of release, arm action, and velocity of a curveball are essential. But if that same curve ball results in a pitch that is easy to hit, the pitcher has gained nothing accept a new understanding of a useless concept.

The same is true for studying case use in teacher education. The desired result or goal must be considered prior to an investigation into the means used to obtain that result. This investigation of case use for physical education teacher education was analyzed against the backdrop of teacher reflection. Therefore, the first section of this chapter explains teacher reflection. This is followed by an explanation of teacher knowledge literature relevant to this study. The third section includes an explanation of what teacher educators can learn from the history of case use in other professions. Finally, current theory and research concerning case use in teacher education is discussed.

Teacher Reflection

For the purpose of this study, reflection denoted a cognitive, psychological (Korthagen, 1993) definition derived from the work of Dewey (1910, 1933) and Schon (1983, 1987) as opposed to the more sociological, ethical, or political conceptions of reflection (Ross, 1988; Van Manen, 1977;

Zeichner & Liston, 1987). This distinction is made more for clarification of purpose than for exclusion. It does not mean that sociological, ethical, or political elements are not a part of physical education, nor should they be ignored by teacher educators. In fact, two aspects of reflection used for this study could be considered as part of this category, namely viewing teaching as problematic and perceived meaningfulness. These constructs include assessments of teachers perceptions of their own changes in beliefs and their attitudes toward physical education teaching. However, the difference between this study and some that have focused more on sociological factors is that reflection was not tied to a specific moral standing or political belief, as has often been the case with those who have previously studied reflection.

Origin of teacher reflection. How teachers think and what teachers think about has been an area of study for nearly a century. Reflection, or reflective teaching, has been defined in many different ways in the literature, making it impossible to narrow it into one definition. John Dewey (1910, 1933) was one of the first teaching scholars to use the term reflective teaching, defining it as "the active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (Dewey, 1910, p. 6). Reflection begins with defining a problem that engenders "a state of doubt, hesitation, perplexity, and mental difficulty in which thinking originates," followed by a weighing of possible solutions requiring "an act of searching, hunting, and inquiring to find material that will resolve the doubt, settle, and dispose of the perplexity" (Dewey, 1933, p. 12).

Dewey (1933) distinguished between routine action, which is driven by impulsiveness or tradition, and reflective action, which is a result of "turning a subject over in the mind and giving it serious and consecutive consideration" (p. 3). He made it clear, however, that reflective thinking is not merely following a set of procedures or performing a set of exercises that will make you a good thinker. Reflective thinking is also a result of attitudes that he labeled open-mindedness, whole-heartedness, and responsibility (Dewey, 1933). Open-mindedness does not mean that you accept all information regardless of previous experience; rather, that you are willing to listen to more sides than one and give credence to facts that contradict your own set of beliefs. Whole-heartedness simply means that you show a genuine concern for your own intellectual development. Finally, being responsible means that you will consider the consequences of a projected action. Dewey considered reflection as an active pursuit of knowledge and an essential aspect of good teaching.

Harrington and Hodson (1993) have interpreted Dewey's proposed attitudes of reflection and operationalized them for a qualitative study of case analyses by preservice teachers. The authors referred to open-mindedness as the ability to consider perspectives other than your own. Teacher responsibility includes the consideration of moral and ethical consequences of action. Whole-heartedness, which was explored in this study, is a commitment to keeping conclusions tentative and to constant learning as a teacher (viewing teaching as problematic). Furthermore, this growth can only occur if preservice teachers are willing to explore their personal assumptions about teaching and evaluate them against new information (perceived

meaningfulness). Only Dewey's (1933) description of whole-heartedness was assessed as an attitude of reflection in this study.

Harrington and Hodson's (1993) interpretations of open-mindedness and responsibility are built upon sociological factors of teaching such as perspective taking and weighing moral and ethical consequences of action. For this study with beginning preservice teachers, it was decided to focus more on the reflective ability of flexibility and connectedness, which are more cognitive aspects of reflection. The ability to identify and solve problems while developing an in-depth understanding of content was deemed to be a useful measure of the influence of case discussions for preservice teachers in the early stages of their teacher education. These cognitive aspects of reflection are further explained in the work of Donald Schon.

Recently, Schon (1983, 1987) investigated reflection among professionals in business circles such as engineering, architecture, and management. Schon (1983) used the phrase "listening as the situation talks back," called reflection-in-action, to explain the reflective professional (p. 79). Schon stressed that this can be done in the context of the job. He further claimed that after the workday, effective practitioners engage in reflection-on-action, which is the active contemplation of problems that occurred in the workplace. Reflection-on-action allows more time to frame and reframe problems and consider alternatives. Some teacher educators have expanded on Schon's work, drawing parallels between reflection-in-action and reflection-on-action from business to similar concepts for teaching.

Schon's cognitive definition of reflection is rooted in the naming and reframing of problems. The heart of reflective thinking is when one must

reframe a problem because it cannot be adequately addressed from the current perspective. He contrasted two paradigms of professional preparation; these were reflection, defined earlier, and technical rationality. Technical rationality, based in positivism, assumes that problem solving is merely a function of applying rigid, theoretical principals to existing dilemmas. Merseth (1996) stated that the friction between these two paradigms about the nature of teachers' knowledge has contributed to the recent boost of interest in case use for teacher education. She compared scholars who believe that teacher knowledge is a set of principles to be applied to specific situations (Brophy & Good, 1986) to those (Clark & Peterson, 1986; Lampert, 1985) who believe that "skillful teachers do not operate from a set of theories but rather build--through experience in contextualized situations--multiple strategies for practice" (Merseth, 1996, p. 6). Merseth concluded, and I concur that neither theory can stand alone; teacher knowledge is most likely a combination of both arguments.

Similarly, Schon (1983) argued the technical rationality model is incomplete because "it fails to account for practical competence in divergent situations..." (p. 49). Schon's (1983) emphasis on the credence of practical knowledge is evident, yet he contended that this practical knowledge cannot always be explained.

> When we go about the spontaneous, intuitive performance of the actions of everyday life, we show ourselves to be knowledgeable in a special way. Often we cannot say what it is that we know. When we try to describe it we find ourselves at a loss, or we produce descriptions that are obviously inappropriate. Our knowing is ordinarily tacit, implicit in our patterns of action and our feel for the stuff with which we are dealing. It seems right to say that our knowing is in our action. (p. 49)

It is when this knowing-in-action is challenged that the reflective practitioner is stimulated to critical thinking. When things don't go as planned, the reflective practitioner sees this as an opportunity to explore new ways to address the problem. In the case of a teacher, a reflective practitioner does not necessarily always appear to have the answers or be in control. The reflective teacher confronts complex problems not by attempting to apply rigid preset principles but by asking questions and generating solutions based on the unique essence of the problem. Schon (1987) stated that the critical function of reflection-in-action is the "questioning of the assumptional structure of knowing-in-action" (p. 28). He further noted that the difference between knowing-in-action and reflection may be subtle. Consider the baseball pitcher who is contemplating throwing his newly learned curveball. He has just set the batter up with two fastball strikes on the inside corner. Generally he follows this pattern with a slow curve ball that breaks over the outside corner. In the process of deciding what pitch to throw, however, the pitcher opts to break his pattern and throw another inside fastball, based on the fact that the hitter is struggling and his slow bat may be aided by an off-speed curveball out over the plate. The change in the pitcher's pattern was due to a brief reflection of the situation at hand. Unlike Dewey, Schon does not believe that reflection moves a person from a state of doubt to a feeling of certainty. He noted that addressing a problem may lead to continued confusion but will bring a new appreciation for the complexity of the problem and lead to new ways of attacking it. Those operating from the assumptions of technical rationality often feel uncomfortable with the notion of not knowing what to do at all times. As Schon (1983) stated:

> Many practitioners, locked into a view of themselves as technical experts, find nothing in the world of practice to occasion reflection. They have become too skillful at techniques of selective inattention, junk categories, and situational control, techniques which they use to serve the constancy of their knowledge-in-practice. For them, uncertainty is a threat; its admission is a sign of weakness. (p. 69)

The technically oriented teacher who is uncomfortable with uncertainty will tend to solve problems in a blanket or rigid fashion similar to what Dewey (1933) called routine action. We have all known teachers who fall into this category; they often appear in control but rarely ask themselves if what they are doing is working or even worthwhile. Clearly, most proponents of reflection do not see teaching as a simple transmission of information from teacher to student; instead, they see teaching as a process that requires a deft ability to draw upon variable information and adapt it to a particular context. Furthermore, the process of identifying and solving problems by drawing on relevant information is meaningful because reflective teachers are willing to confront their beliefs and keep conclusions tentative. It will later be argued that teachers' understanding of the subject-matter and context of the situation contributes to their ability to reflect on problems.

Current research in teacher reflection. The research questions for this study were derived primarily from specific claims and evidence regarding case use in teacher education, so a comprehensive analysis of teacher reflection would be inappropriate at this time. To understand the significance of the reflection assessments used in this study, however, it is important to examine the main thrusts of the reflection literature. A survey documenting

the variety of ways that scholars have classified reflection highlights that no one single definition of reflection is required for everyone. As LaBoskey, (1994) indicated, "those who use the term need to specify exactly what they mean" (p. 3). Reflection for this study involves constructs of skill and will, including how preservice teachers think, what they think about, and their attitudes about teaching physical education. The following section describes current teacher reflection research.

The bulk of scholars who study teacher reflection align it closely with social, ethical, and political goals (Bullough, 1989; Korthagen, 1992; Pultorak, 1993; Ross, 1989; Zeichner and Liston, 1987). Van Manen's (1977) categorization of three levels of reflection has guided this research. He identified three levels of reflection which, in his opinion, increase in importance from level one to three. This notion of increasing importance and depth of reflectivity has been picked up by many who have studied reflection. Van Manen's three levels are (a) technical rationality, (b) clarifying assumptions, and (c) moral, social, and political. Level one refers to details of teaching effectiveness, such as thinking about classroom management. Level two refers to reflecting on your actions based on your personal beliefs, such as wondering why you are spending so much time teaching volleyball skills when fitness is your first priority. The third level means that a teacher is reflecting on his or her actions according to a set of morals or political views.

Many teacher education program leaders have already decided to include the development of reflective teachers as a program goal; some even consider promoting reflection as the most important thing that a teacher education program can accomplish. The University of Wisconsin-Madison,

for example, promotes teacher reflection and has adopted Van Manen's hierarchy as their rubric for measuring the depth of reflection. To evaluate their program, the faculty has conducted series of eight preliminary studies. They found that reflection can be promoted in preservice teachers, especially at the technical level, and that preservice teachers began to see their teaching as problematic (Zeichner & Liston, 1987). The program attempts to bring the students to the political, social, moral level of reflection (Gore and Zeichner, 1991) but admits that all conceptual orientations (Feiman-Nemser, 1990) can benefit from promotion of teacher reflection (Tabachnick and Zeichner, 1991).

The University of Florida teacher education faculty uses the PROTEACH program to facilitate reflection (Ross, 1989). Their emphasis is on the effective teaching literature and on Van Manen's (1977) three levels. All three of Van Manen's levels are considered, yet the goal for this program is to get students to apply effective teaching principles to situated problems. The faculty tries to get the students to construct an understanding of reflective teaching in the school context. Some evidence suggests that they are successful at promoting reflection, yet much more research is needed (Kilgore and Ross, 1993).

As was mentioned, many scholars have adopted Van Manen's notion that the third level of reflection is the most important and shows the deepest level of thought. Bullough (1989) believes that teacher reflection must be couched within a moral vision and that teacher education programs should seek to promote more politically active students. Pultorak (1993) and Korthagen (1992) set out to see if a variety of strategies could be used to promote reflection at Van Manen's three levels. Evidence from both studies

suggest that teacher reflection can be promoted, but it is very difficult to get students to reflect at any level other than the technical level. The overwhelming number of documented written and oral reflections made by students in both of the programs could be categorized as technical. As beginning teachers, it is not surprising that the students are most concerned with the technical aspects of teaching. Korthagen (1992) suggested that students should be exposed to the refection process in a series of steps, each becoming more complex as the students learn the mental process of reflecting. For example, the students may just work on framing the problem at first, then later attempt to generate solutions based on existing literature or their own experience. The beginning preservice teachers in this study were asked to identify problems and solutions while drawing on relevant concepts and personal experiences. Their attitudes about teaching and their own learning were assessed, but not according to Van Manen's (1977) levels.

Reflection in physical education. Several scholars have called for the incorporation of reflection in the physical education teacher education process (Dodds, 1989; Tinning, 1987, 1991; Gore, 1990; Graham, 1991; Rovegno, 1992). Some early research has shown that reflection can be promoted in physical education teacher education. For example, Sebren's (1995) interpretive study of seven preservice teachers during a methods course found that the use of reflection groups prompted some students to change their thinking from notions of classroom control to ideas of students leaning.

Tsangaridou and O'Sullivan (1994) conducted a study which contrasted different kinds of reflective assignments. Six preservice teachers participated in the study and were assigned to one of two different treatment groups.

They found that specific questioning techniques as opposed to general questioning concerning observations could be used to promote significantly more instances of reflection even though most reflection occurred at the technical level. There is emerging evidence that teacher educators in physical education favor the idea of developing reflective practitioners and that there are ways to promote reflective thought in preservice teachers.

Rovegno's (1992) case study documented the perspective of knowing of one preservice teacher in an elementary methods course that emphasized reflection. Interpretive analysis of interview transcripts, field notes, and course documents revealed that this particular preservice teacher preferred receiving knowledge, or learning from others, rather than personal reflection. Rovegno noted that "one factor that may mediate learning to reflect is a teacher's perspective on knowing" (p. 492). She found that students who are used to receiving knowledge may have more difficulty reflecting than those who are able to construct knowledge.

Hellison and Templin (1991) have even compiled a textbook that emphasizes a reflective approach to teaching physical education. Their definition of reflection is simple and to the point:

> In essence, reflective teaching means to think about your teaching and to ask yourself two questions throughout your teaching career: What's worth doing? and is what I am doing working? These questions can take an almost endless variety of specific forms. (p. 3)

Hellison and his colleagues have created a methods course at the University of Illinois at Chicago that is specifically designed to develop reflective teachers. Students are presented with a variety of philosophical teaching

options and constantly challenged to critically reflect on them (Cuttforth & Hellison, 1992).

At this point it is important to note that all scholars do not believe that Van Manen's (1977) progressing reflection levels signify deeper thought. Two arguments have been made by physical education teacher educators suggesting that reflection at all levels is necessary and a hierarchy does not exist. Graham (1991) surveyed the classroom research on teacher reflection and concluded that the goals of the teacher education program and the context of the situation dictate the level of reflection. When students' understanding of and performance in the technical aspects of teaching are considered the desired result by the teacher educator, then of course the student is expected to reflect about the technical aspects of teaching. Another point was made by Tsangaridou and Siedentop (1995) in a recent review of reflection literature. They observed that many of the programs that advocate reflection at Van Manen's (1977) third level operate from a certain political standpoint.

> These scholars, however, seem to ignore the possibility that many teachers may reflect on the social, moral, and political aspects of their work but do not hold critical political views. For example, what if a teacher is a thoughtful political conservative? This teacher values the ethics of a political democracy, through a republican form of government with multiple checks and balances, and an economic meritocracy, which the teacher believes a regulated capitalism represents. Moreover, this teacher might be a devout Christian and is "moral" from that perspective. She or he clearly values the social, moral, and political aspects of her or his work. Is this teacher unreflective in the social reconstructionist scholars' sense? (p. 229)

For the purpose of this study, it is inappropriate to think of preservice teachers moving in a step-like fashion toward deeper levels of reflection. LaBoskey (1994) stated that all three levels of Van Manen's hierarchy are important, and she agreed with Noffke and Brennan (1991) who stated "every issue has its technical (how to), practical (what to) and critical (why) dimensions" (p. 192). Therefore, useful rubrics for measuring reflection developed from the work of Van Manen (1977) would not be appropriate for this study. Instead, reflection refers to the process of thinking, the organization of a knowledge base, and personal attitudes about the career of teaching.

Teacher Knowledge

The purpose of this study was to investigate and describe the influence of case discussions on preservice teachers' reflection in a physical education undergraduate educational games class. Reflection has been defined comprehensively, including aspects of how teachers think, their understanding of subject matter (skill), and attitudes about teaching (will). Teacher knowledge literature may not refer to this as reflection, but it does address many of the same issues. This literature contributed significantly to the development of the research questions for this study. The following section begins with an explanation of Cognitive Flexibility Theory (Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987, p. 6). The theory advocates using cases to represent knowledge when preparing professionals. Teacher knowledge literature that affected the measures of reflection used in this study, namely subject-matter knowledge and teacher attitudes, is also included.

Cognitive flexibility theory. An important contribution to the understanding of professional knowledge has been made by Spiro and his colleagues. His theory addresses a dilemma facing those who educate professionals; namely, how to facilitate practiced expertise in their students prior to massive experience. This advanced knowledge acquisition, or subject area learning beyond the introductory stage, is the subject of Spiro's Cognitive Flexibility Theory (CFT) (Spiro, Coulson, Feltovich, & Anderson, 1988). The goal, or outcome, of this theory is cognitive flexibility, defined as "selective use of knowledge to adaptively fit the needs of understanding and decision making in a particular situation; the potential for maximally adaptive knowledge assembly depends on having available as full a representation of complexity to draw upon as possible" (Spiro et. al., 1988, p. 5). Cognitive flexibility is necessary when working in an "ill-structured domain", where the professional must apply concepts in different ways in various contexts (Spiro, Vispoel, Schmitz, Samarapungavan, & Boerger, 1987, p. 6). Doctors and teachers are examples of professionals who work in such domains. With his theory, Spiro proposed that university departments that educate these professionals should restructure the way knowledge is represented.

Through his theory Spiro suggested, among other things, that multiple knowledge representations are critical to professional preparation. Multiple knowledge representations refer to the use of multiple analogies, themes, and points-of-view when teaching. The multiple representations are said to "produce understanding of multifaceted nature of complex knowledge" (Jacobson & Spiro, 1993, p.3). In addition, students are less likely to make broad generalizations based on single precedents.

Spiro emphasized the use of cases as the primary tool for knowledge organization. Cases can be narratives, computer hypertexts, dramatizations, or videos. In each situation, the key element is that knowledge is not separated from context. Cases present complex concepts in a particular situation. In an ill-structured domain, the choice and patterns of conceptual elements needed to apply to cases is variable. Cases foster in students an increased flexibility in responding to problems in new contexts (Spiro et. al., 1988).

Instructors must be able to help students link abstract concepts to different case examples. For example, small portions of a text or video may be used to illustrate particular themes. In this way the student can better see similarities and differences across cases. This practice can "demonstrate to the learner the nuances of conceptual variability associated with ill-structured domains" (Jacobson and Spiro, 1993, p. 3). The result is an understanding of complex concepts across different contextual settings.

The way knowledge is structured in instructional settings must be amplified by the teacher's overt emphasis on the interrelationship and web-like nature of knowledge. Spiro noted that teachers must acknowledge the inherent complexity of the concepts they are teaching. The appropriate compartmentalization of concepts in one situation may be completely inappropriate in another. Often knowledge that is broken down for clarity is not usable in that form in the real world. When teachers stress the interconnectedness of knowledge, students develop a "rich and flexible understanding of a complex content area" (Spiro et. al., 1987, p. 4).

CFT encourages students to actively assemble their own knowledge as opposed to rigidly absorbing precompiled knowledge. In ill-structured domains, one cannot have a prepackaged schema for every situation that comes along. Professionals must be able to adapt knowledge to the situation at hand. This process of drawing concepts from various parts of long-term memory to solve novel problems is what sets good professionals apart from those who seem to be mentally paralyzed by workplace problems. For any particular problem, various aspects of precompiled knowledge must be used and adapted. Active knowledge assembly develops a person's ability to mobilize and adapt knowledge (Spiro et. al., 1988).

The traditional technique of teaching is to simplify knowledge. CFT maintains that knowledge broken down contributes to a student's tendency to oversimplify and overgeneralize knowledge. This does not mean that absolutely everything there is to know about a topic or concept is thrust upon the student at one time; rather CFT recommends "the early introduction of complexity in a cognitively manageable manner that still reflects some of the multifaceted interactions of various conceptual elements" (Spiro & Jehng, 1990, p. 170). Thus, the learner gains an understanding of knowledge complexity.

Knowledge and action are intimately tied in CFT. In other words, concepts learned in an instructional setting are always tied to how they are used in real world settings. "If a concept's meaning in use cannot be determined universally across cases (as in ill-structured domains), then one must pay much more attention to the details of how the concept is used - knowledge in practice rather than knowledge in the abstract" (Spiro et. al.,

1988, p. 7). This means that teachers must describe the context of conceptual use in order for the learner to understand how it may be used in other settings.

Contemporary knowledge representation approaches such as schema, frame, and script theories have spurred the birth of CFT. Spiro and his colleagues identified specific shortcomings in these theories addressed by CFT; namely, knowledge structures tend to be rigid, isolated, compartmentalized, and made artificially neat. There is also the implicit assumption that the arena in which this knowledge is to be used is consistent or regular. CFT proposes that knowledge represented in this manner actually inhibits its use in real world settings. Cognitive Flexibility Theory originated from the issue of transfer: "How should knowledge be acquired and organized to facilitate a wide range of future applications" (Spiro et. al., 1987, p. 2)? Also, Spiro acknowledges a debt to the theoretical orientation of criss-crossed landscapes proposed by Wiggenstein (1953) and a long list of information processing researchers. Spiro has only begun to test his theory. Preliminary data shows students taught with the instructional principles described in CFT are more prepared to apply knowledge they gained in some new way better than those in a control group taught by traditional methods (Jacobson & Spiro, 1993; Spiro et. al., 1987).

CFT contributed to the development of this study. Multiple representations of issues related to physical education teaching were found across the cases. Students were encouraged to place themselves in the situations of the case characters and decide what they would do. The real-world narratives were constantly evaluated against theoretical knowledge

and facts found in the course content. The complexity and contextual nature of teaching was stressed as each case was discussed.

Subject matter knowledge. The question of what knowledge is most important and how to get that knowledge across to preservice teachers is an on-going question for teacher educators. When writing about the subject-matter knowledge that teachers need, Kennedy (1990) stated:

> People who are fluent in a subject are distinguished in at least three respects: (1) they know a great deal of specific content, that is facts and ideas, (2) they have formed a variety of complex relationships among these pieces of content; and (3) they understand how to approach new problems or dilemmas and how to produce new ideas within the subject. (p. 7)

Kennedy (1990) refers not only to an amount of knowledge, but also a depth of knowledge that is necessary for teachers to be successful. Also included is a referral to the process of teachers using their complex understanding of subject-matter to solve problems and generate new ideas. This is a tall order for teachers and teacher educators.

McDiarmid, Ball, and Anderson (1989) noted that it is critical to promote in students "a flexible understanding of the subject-matter" from which they can draw relationships within the subject and make connections to the outside world (p. 2). The goal is for students to be able to begin to develop a web of knowledge that is connected to real-world problems rather than seeing knowledge as isolated principles. Several factors are working against this sort of in-depth understanding of subject-matter. Kennedy (1990) observed that "teachers tend to concentrate on trivial content and on routine tasks; and teachers are often not able to explain important substantive

concepts to students" (p. 6). Kennedy pointed to a shallow understanding of content and a preoccupation with classroom management as contributors to this inability.

The question for teacher educators is how to portray knowledge in a way that will help preservice teachers develop this kind of understanding of subject-matter. Among other things, Kennedy (1991) suggested portraying subject-matter concepts in the situations in which they occur. Cases were used in this study as a means for doing just that. The cases were based on real-world experiences and included issues and theories critical to elementary physical education teaching.

Kennedy (1991) identified three qualities of subject-matter understanding that promote transfer into teaching situations. Two of these three qualities, flexibility and connectedness, were measured with regard to reflection skill in this study. Flexibility is the ability to identify problems in context and generate solutions to those problems. Connectedness is the ability to draw on concepts or personal experiences that help to solve problems or evaluate solutions.

Teacher attitudes. The third quality of subject-matter understanding identified by Kennedy (1991), perceived meaningfulness, was measured with regard to reflection will, or orientation toward reflection. Perceived meaningfulness is the willingness to confront personal beliefs and evaluate them based on new information. McDiarmid and his colleagues (1989) pointed to evidence from cognitive psychology showing prior knowledge and beliefs as a powerful force in a person's construction of new ideas. Helping students acquire a better understanding of the subject-matter "involves

challenging their fundamental conceptions of teaching" (p. 21). Due to the fact that students enter teacher education with variable notions of what teaching is, it is critical for teacher educators to address these initial conceptions, or they may be inadvertently supporting the status quo.

Teachers spend a great deal of time in school prior to entering teacher college (Lortie, 1975), thereby developing a strong and fixed notion of what it means to practice teaching (Carter, 1990; Feiman-Nemser, 1990; Gore & Zeichner, 1991). Kennedy (1991) noted that "teachers, like other learners, interpret new content through existing understandings and modify and interpret new ideas on the basis of what they already know and believe" (p. 3).

The National Center for Research on Teacher Education has been collecting data on preservice and inservice teachers for three years and have uncovered some disconcerting evidence for teacher educators. They found that many teacher education programs are unable to substantially alter the beliefs of students. Many students leave their professional education believing that subject-matter is fixed and learning entails absorption of material, beliefs that ran contrary to the efforts of the teacher education programs (Kennedy 1991).

Cases are said to give students an opportunity to analyze problems in a situated fashion and discuss how those problems relate to their own lives. The influence of case discussions on preservice teachers' willingness to confront personal beliefs based on new information and desire to keep conclusions tentative for continued learning was described in this study.

Summary. The development of reflective teachers has become a priority for many teacher education faculties. The phrase "teacher reflection"

is very recognizable among teacher educators, yet many definitions still exist. The definitions include elements of how teachers think, what they think about, and their attitudes about teaching. Dewey (1910, 1933) primarily emphasized the attitudes required for being reflective while Schon (1983, 1987) concentrated on the ability to identify problems in context. Teacher knowledge research about the subject-matter understanding and attitudes teachers need to be effective has contributed to the definition of reflection for this study. Based on what is known about teaching, cases have been purported as a means for preparing preservice teachers. This study was designed to describe the influence of case discussions on physical education preservice teachers' reflection in an elementary educational games class. Reflection was defined as a skill (ability to identify problems and solutions drawing on concepts or personal experiences) and will (desire to keep conclusions tentative for continued learning and willingness to confront personal beliefs about teaching based on new information). Research concerning the ability to enhance preservice teachers' reflection is beginning to grow, yet there are still far more questions than answers. The following section describes the history of case use in other professions and the theory of case use for teacher education.

Cases in Law, Medicine, and Business

Cases in law. Using cases to educate professionals is not new. Cases have been used for teaching in law, medicine, and business for several years. This rich history of case use has contributed to the excitement about using cases for teacher preparation and to the development of this study. It is appropriate to begin with the field of law because it has used cases and case

methods more than any other profession (Carter & Unklesbay, 1989). Law professors have at their disposal the richest and most comprehensive case resources. Also, the instructional method used with cases is widely accepted and used in law schools today (Carter & Unklesbay, 1989).

Redlich (1914) documented the origin of case use in his description of the Harvard Law School. President Charles Eliot hired Christopher Columbus Langdell as head of the Harvard Law School in 1870, who went on to become known as the father of the case method. At that time, the field of law was struggling to be considered an academic discipline worthy of scientific study. Langdell sought out new pedagogical techniques that would legitimize law as a scientific discipline. Furthermore, there was an ever-growing amount of literature in the field, and Langdell believed that the study of cases would serve as a useful tool for conveying important literature. He believed that considering cases as the raw data for scientific inquiry would give the field of law enhanced credibility (McAninch, 1991).

Langdell compiled a battery of cases with the intention of using them to teach students theory behind the cases. The Socratic teaching method was used to disseminate information to the students. This meant that students took an active role in the class, but the professor was still very much in control of the discussion. Langdell's vision was for students to be able to induce legal principals from the cases through an analytic process rather than dogmatic lectures. Questions concerning the cases were asked to the students whose answers were then commented on by the professor. During the case analysis, students were asked to review the actions taken by the lawyers in the cases and decide what they might do in a similar situation (Redlich, 1914).

After Langdell's death, the case method at Harvard began to move in a different direction. Engendering theoretical understanding through cases became much less of a concern in favor of the decision-making and logical reasoning that was taught during the process. Students were encouraged to "think like a lawyer" when analyzing the cases (McAninch, 1991), signaling a shift in emphasis which has persisted to case use in law schools today. Cases and case methods are now used for developing the students' ability to make logical and persuasive arguments. The cases themselves have become precedents for debate rather than tools for learning theory. Critics of this shift in emphasis contend that the content of the cases and the theory behind their interpretation is passed over in favor of winning at all costs. Instead of trying to understand the law, students are encouraged to develop arguments free from values (Stevens 1983).

Another criticism is that the case method takes too much time, and too little information is covered (Stevens, 1983). Despite these arguments, cases are still used extensively in law schools. Teich (1986) noted that these practices continue even though there is little evidence that cases and case methods live up to the educational claims that accompany them. Instead, advocates often point to anecdotal success of graduates from Harvard and Yale, universities that extensively use cases and case methods.

Cases in medicine. Medical schools use cases in much different ways than law schools, yet there are similarities. Medical schools began using cases for the same reason as law schools in that the field leaders were trying to legitimize medicine as worthy of scientific study. Perhaps the most famous instance of case use came from Professor William Osler at Johns Hopkins

University. In a effort to give the medical students more opportunities for personal contact with patients, the case method was explored. Generally, students only participated in case work toward the end of the medical school process (McAninch, 1991).

Case work in medicine differed from law regarding the materials, purpose, and methods. The clinical clerkship characterized the medical school case paradigm. Medical students were assigned approximately five patients for whom they would perform examinations, make diagnoses, and implement necessary treatments. The students worked with each patient throughout his or her stay at the hospital, always under supervision of the medical professor (Osler, 1969). During the ward round, students were provided with an opportunity to discuss cases with their professors and fellow students. A typical ward round procedure required students to stand around a patient while the primary clerk explained the history of the patient and made a tentative diagnosis. The professor and the students would ask questions and critique the clerk's diagnosis. Through this process, students were taught to listen carefully and ask appropriate questions of the patient. A typical day for the would-be doctors included moving as a group from room to room, fine-tuning their diagnostic abilities (McAninch, 1991).

Flexner, an educator and evaluator, praised the Johns Hopkins method of preparing doctors in his 1910 report to the Carnegie Commission. In Flexner's now famous report, Johns Hopkins stood out as the example for all other medical schools to follow (Thorne, 1973). The case method significantly contributed to the high ranking achieved by Johns Hopkins Medical School (McAninch, 1991).

Critics of the case method in medicine point to the fact that the cases are not closely linked with theory, and occur haphazardly (Rothstein, 1987). There is no way of knowing which patients will show up on certain day, making it very difficult to teach a particular theory or piece of content. The medical professor must organize his or her teaching around ailments of the patients that enter the hospital on a given day. Rothstein (1987) further noted the cases medical students work on in teaching situations are not like those that they will face in private practice; therefore, students do not get-real world experience through clinical clerkships. Atwater (1980) explained the case method in medicine is changing because of increased specialization in medicine. Many students specialize in one particular area, making it less useful for them to work on general cases. However, the clerkship and ward round concepts continue to be used in medical education.

Cases in business. There is no one single case or case method that characterizes its use in business education. In fact, it is the variability of case use by business educators that makes it so appealing to teacher educators (Christensen & Hanson, 1987; Greenwood & Parkay, 1989; Merseth, 1991). The history of case use in business can also be traced back to Harvard. In 1908, the newly established Graduate School of Administration at Harvard adopted the case method approach because of its success in the law school. Few case materials were available, and instructors were unfamiliar with the process so the use of the case method started slowly. But the appointment of Wallace B. Donham as Dean of the school in 1919 served as a catalyst for the case method approach. Donham recognized that more quality cases and faculty support were needed before the case method would yield benefits. He established the

Bureau for Business Research to add to the case literature and organized various support networks for faculty members. By the early 1920s, case method instruction had become a significant part of business education at Harvard (Merseth, 1991).

Advocates of the case method complained of the inadequacy of passive forms of instruction. Cases were seen as a way of drawing the students into the conversation and having them learn to solve problems. Donham's effort to improve the case method in business included a shift away from teaching cases as precedents to using them to make students better decision-makers (Donham, 1920-1921). Smith (1987) pointed out that from the beginning and through today, cases and case methods have been used for the purpose of building problem solving skills in future business managers.

Business cases and the case methods differ from those of law and medicine. Cases in business come in a wide range of styles. Some cases are extremely long, tracking a company's movements over an extended period of time; other cases consist of only a few pages and present a dilemma for the students to analyze. Sometimes business educators use A and B cases, the A case being a story that demonstrates the problem and the B case being the explanation of how the problem was handled in real life. Students have an opportunity to discuss the problem and analyze possible courses of action between the two cases and after the B case. The discussion format emphasizes student interaction and decision making. The professor is seen more as moderator than interrogator, facilitating discussion among the students rather than singling them out to answer specific questions (McAninch, 1991).

Forrester and Oldham (1981) found that cases are rarely used as the sole instructional strategy for business courses; rather, cases are used in combination with lectures and assignments so that the case discussions remain fresh and interesting. Cases and case methods continue to be used in various forms by business educators despite the lack of empirical evidence supporting their pedagogical power (Smith, 1987). Clearly, there is an intuitive appeal to this technique that contributes to its widespread use.

Learning from history. Interestingly, Merseth (1991) noted that while case use was being adopted in business education, it was being rejected in teacher education. She pointed to three reasons for this occurrence. First, business schools had begun to gather a set of cases to be used in business classes, whereas few were available in education. Second, the university recognized the writing of cases in business as a research pursuit, so professors could allocate their time to developing cases. Finally, business educators knew from the beginning that cases were to be used to promote decision making while teacher educators did not have a defined purpose.

What can we learn from the use of cases and case methods in other professions? One clear conclusion is that cases and case methods must be chosen based on the purpose for which they are intended. There are many possible uses for cases and case methods, and teacher educators must design courses, cases, and case methods based on desirable outcomes. Case use typically involves classroom discussion and requires active participation from the students; this study was no exception. The discussion of issues found in the cases was a critical part of the learning experience. Discussion by itself, however, was not the only goal; the content of the discussion was also a

critical part of learning through cases. It is important for teacher educators to consider both what is being discussed in case analysis and how it is being discussed.

Two aspects of case use in law are most appropriate for teacher education. First, cases can be constructed to link theory to practice. In this study cases were designed to raise theoretical and practical issues involved in elementary physical education games teaching. Also, the reflection concept of connectedness refers to the students' ability to draw on relevant facts, theories and personal experiences in their written reflections.

The second pertinent aspect of case use in law is the idea of "thinking like a lawyer." Teacher educators should encourage students to "think like a teacher," even though they do not have teaching experience. The ultimate goal of teacher education programs is to develop teachers who are as close to experts as possible in the absence of extended experience. Dewey's (1933) identification of prerequisite attitudes for reflection, specifically whole-heartedness, begins this process of thinking like a teacher. Viewing teaching as a profession requiring life-long learning, keeping conclusions tentative, and being willing to evaluate personal assumptions based on new information are important teacher qualities described in this study. Furthermore, Schon's (1983) notion of listening to the situation or dilemma explains how expert teachers seem to achieve success amid extremely variable circumstances. Clearly, both the content of thought and the process of thinking like a teacher are inseparable. The goal of teacher educators should be neither generic thinking nor generic solutions but an investigation into what information is most useful for the student at that time.

Teacher educators can also learn from using case work for "diagnosis", which is a hallmark of medical education. Richert (1991b) noted that cases help students to focus, or "zero in" on the most critical problem or problems in a given situation (p. 123) Discussing all factors that contribute to a problem and making prescriptions based on those factors is the kind of reflective thinking that teachers need. In this study, problem identification and solution generation was captured by the concept of flexibility; however, the medical example is not followed entirely. Given the limited time that teacher educators have with students, it would not be wise to let cases arise haphazardly as they do in medical education. Cases must be carefully chosen or constructed for a particular purpose.

The business case method serves as the closest possible model for teacher educators. Students are given a dilemma of a real or fictional situation and asked to dissect it and solve the problem. In business there is not one solution that "answers" the case. Multiple solutions are discussed and evaluated according to their worth. There are worse answers and better answers, but usually no one best answer. In the study of teaching, keeping conclusions tentative in a quest for new learning was labeled as a problematic view of teaching (Zeichner & Liston, 1987). LaBoskey (1994), a strong proponent of facilitating reflection in teacher education, suggests getting students to consider conclusions to problems as tentative rather than absolute as the most critical role for teacher education programs.

In business education, students learn to develop and defend positions based on previous experience and knowledge. Students get an opportunity to consider what they believe about certain professional issues, something they

may not have consciously done in the past. It is critical that students understand the context in which the knowledge gained in school relates to their lives in the real world (Dewey, 1902). The willingness to confront personal beliefs about teaching based on new information is essential to this process. The reflection concept of perceived meaningfulness defines this attitude for this study.

The anecdotal success of case use in other professions served as a catalyst for this study. The four constructs of reflection, namely connectedness, flexibility (skill), viewing teaching as problematic, and perceived meaningfulness (attitude) provided measurable variables for assessing the value of case use for teacher preparation.

Cases in Teacher Education

Current interest in cases and case methods. Remote case use in teacher education can be traced back as far as 1864, when New Jersey's Montclair State Teachers College was mentioned by Sperle (1933) in his description of case use (Doyle, 1990). Cases and case methods for teacher preparation as it is thought of today began following Lee Shulman's 1985 presidential address at the American Educational Research Association (Shulman, L., 1986). Shulman identified what he called the "missing paradigm" in teacher education (p. 7). He pointed out that teachers were formerly evaluated according to their understanding of content. Today, Shulman argued, the pendulum has completely shifted so that teachers are evaluated solely on an understanding and performance of generic pedagogy. Shulman identified three types of teacher knowledge: propositional knowledge (research-based derivations, wisdom of practice, values), case knowledge (specific, well-documented

events), and strategic knowledge (metacognition, reflection). Shulman (1986) advocated "using the power of a case literature to illuminate both the practical and the theoretical," thereby mixing elements of content and pedagogy, theory and practice, all within the context of the teaching situation (p. 11).

On the heels of Shulman's address, a report on the Task Force on Teaching as a profession issued by the Carnegie Forum on Education and the Economy (1986) called for an inclusion of the case method in post-graduate teacher education. Organizations such as the American Association for Higher Education and the Far West Laboratory for Educational Research and Development began to express marked interest in cases and case methods (Shulman & Colbert, 1987, 1988). Evidence of further interest in cases and case methods is the growth of recently published case books and books advocating case use in teacher education (Kleinfeld, 1988; Kowalski, Weaver & Henson, 1990; Silverman, Welty, & Lyon, 1992, 1994; Shulman, J., 1992; Wassermann, 1993).

Theory of case use in teacher education. Several scholars have reviewed and classified the use of cases and the theoretical arguments that support the use of cases in teacher education (Doyle, 1990; Kagan, 1993; Shulman, 1992; Sykes & Bird, 1992). Classifications are distinguished by purposes or reasons for case use in teacher education. For instance, Shulman (1992) expanded on his original speech by stating that cases could be used in five different forms. They include (a) prototypes that describe a principle, (b) precedents of practice which describe how a particular problem was solved, (c) parables that contain a moral or ethical insight, (d) strategies for analyzing

problems and facilitating reflection, and (e) visions of what could be in education. Shulman stated that "to call something a case is to make a theoretical claim" and that cases usually involve a certain dilemma or contrasting arguments about a certain topic (p. 17).

Kagan (1993) also classified cases into categories by the modes in which they could be used. She theorized, for instance, that cases could be used as raw data to study teacher cognition, as catalysts for stimulating reflection, or as tools for helping novice teachers link theory to practice in a particular context. Doyle's (1990) representation of case use is similar to Kagan's. Doyle first noted that cases can be used as precepts or practice. In this instance, the case represents a chunk of knowledge to be distributed to preservice teachers. Similarly, Broudy (1990) called for a "consensus of the learned" in teacher education (p. 451). He noticed that students in other professions, such as medicine, law, and engineering, are likely to use the same classifications and terminology for discussion of problems regardless of the university they attend. The same is not true for teacher education. Broudy (1990) suggested that the field of teacher education identify "a set of problems that legitimately can claim to be so generic and so important that all who teach will be familiar with them" (p. 453). The cases, then, would be a set of problems organized around principles and theories that most teachers will encounter. Yet while Doyle (1990) sees some merit in this approach, he also believes it presents teaching as a largely unproblematic process. He further proposed that the second use for cases, to stimulate generic problem solving skills, also limits the power of cases because it does not account for content or context. Instead, Doyle advocates using cases for knowledge and understanding, which he

described as the presentation of theory within a problematic context to develop situated teacher knowledge.

Finally, Sykes and Bird (1992) reviewed the case literature and classified case use into similar categories, namely (a) instances of theory, (b) opportunities for problem solving, (c) narrative knowing, and (d) causistry. The first two uses are very similar to the conceptions of other scholars who have theorized about declarative and procedural gains from using a case-based approach. Narrative knowing and causistry represent a progressive shift in emphasis by limiting the power of sub-discipline theory within teacher education while focusing the attention on context and practical experience.

Each scholar has highlighted multiple uses for cases in teacher education. Nearly all have advocated using the power of cases to integrate theory, practice, content, and context into the learning experience for both preservice and inservice teachers. While the investigation into these claims has barely begun, enthusiasm regarding the possible benefits of using cases for teacher education continues to grow. Both cases and case methods used for teaching provide an appealing vision for teacher educators. One reason for this enthusiasm is the learning environment generated during case discussions. When describing the atmosphere of case method, Wassermann (1994) noted that students are unable to sit passively during the analysis of a case; instead they must learn to actively develop and defend a position. The rationale for case use was summed up simply by Hutchings (1993) when she noted:

> cases have the ability to situate the conversation about teaching on this middle ground between process and content (technique and substance) where a particular teacher, with particular goals, teaches a particular piece of literature (in this instance) to a particular student. (p. 10)

Current case use. Several scholars have already begun to use cases despite the lack of empirical support (Merseth, 1996). However, as more and more scholars have begun to implement teacher education programs that use cases, some early research has provided valuable insights regarding its potential. Kleinfeld (1988) has compiled a book of cases, using them at the University of Alaska-Fairbanks to teach problem solving and promote multicultural thinking. A qualitative study conducted at Alaska-Fairbanks using pre-and-post student teaching videotapes and written case analyses revealed that students improved in their reflective ability over time. The researchers also documented a shift in preservice teachers' conceptions of teaching and ability to recognize issues of cultural diversity (Noordhof and Kleinfeld, 1991).

The University of Virginia also has several scholars heavily involved with cases and the case method. Recently, McNergney, Herbert, and Ford (1994) reported using case competitions to promote reflective thinking; teams of students would analyze and write reflections based on narrative cases. Reflections were then scored by a panel of expert judges. Like Kleinfeld and her colleagues, McNergney closely associates reflection with the development of multicultural awareness. In another project, McNergney (1994b) and some colleagues traveled to several foreign countries to study their educational cultures and videotape their classrooms. The information was then used to

create computer simulation and videocases. These cases are currently being used to frame reflective discussions around issues of multiculturalism.

Judy Shulman (1992) advocates case writing as a tool for preparing and educating preservice and inservice teachers. She focuses on encouraging students to actively construct knowledge from personal experiences rather than gaining information from the experiences of others. The process involves getting teachers to report dilemmas that arise from their teaching and form them into cases. During this procedure, the case may change from what actually happened to make it more compelling and worthy of future reading. Comments by experts are added to give the reader another perspective to consider (Shulman, 1991). Some believe that the case commentaries actually inhibit rather than promote discussion (Merseth, 1991; Wassermann, 1993). No empirical evidence substantiates either claim.

The context of case use. Evidence that cases and case methods are useful for teacher preparation is beginning to emerge. In an effort to understand the learning environment created through case use, some scholars have focused on the discussion aspect of the case method and have found it to be a vital part of case use (Corrigan & Morine-Dershimer, 1995; Levin, 1995; Richardson, 1993; Van Zoest, 1995). Richardson (1993) studied how cases can be used to teach preservice teachers about motivation. She analyzed eight cases and discussions to determine whether they affected student learning. One important conclusion from this study is that simply reading cases may not be beneficial because students tend to make rigid, incorrect conclusions and broad generalizations. In addition to emphasizing

the need for discussions following the reading of a case, Richardson (1993) also called for active participation in the discussion by the teacher educator.

Levin (1995) used treatment and control groups to study whether students were better able to solve problems if they were allowed to discuss a case as opposed to merely writing about it. She investigated differences in the content, quality, and form of thinking between eight preservice, eight beginning, and eight experienced teachers. Results showed that experienced teachers scored higher than the other two groups in post-test case analyses. She further found groups that discussed cases were better able to construct knowledge than the group that read and wrote about the case without discussing it. Levin identified social factors of case discussions as critical to the learning process.

Similar findings regarding the importance of the discussion were found by Van Zoest (1995) who studied the value of case discussions in the preparation of preservice math teachers. Twelve students were assigned to one of three treatment groups. All of the groups observed videotaped math cases of real classrooms and two groups discussed the observations while the third group did not. Van Zoest (1995) found students who discussed a case after viewing it wrote significantly higher amounts of observations and reflections about the case. Evidence from these two studies seems to reiterate Merseth's (1996) point about not separating cases from case methods and highlights the role of the discussion in case method teaching.

An interesting addition to studies of case environment are studies attempting to control the classroom atmosphere to determine if the same cases illicit similar discussions. Corrigan and Morine-Dershimer (1995)

revealed the complexity and variability of case discussions by showing differences between the way two classes discussed the same case under controlled conditions. Two groups of preservice teachers were analyzed based on discussion of the same narrative case. Differences were noted concerning the issues that were raised and depth of discussion between the two groups. However, these results may be attributed to the fact that each group was led by different case facilitators, one male and one female. The authors' findings contrast with results of Barnett (1991a) who found that consistent issues were raised in multiple discussions of the same case. Differences between these two studies, explained in a later section about cases as content, reveals that the two studies do not necessarily contradict. Regardless, the case discussion is a vital part of the case approach for teacher education. This study included the discussion of three narrative cases. Further explanation of the discussion method is in Chapter III.

Purposes of Case Use in Teacher Education

A review of the theoretical and empirical work on the use of cases in teacher education purports to produce at least three possible outcomes: (a) decision-making or problem solving skills, (b) content and pedagogical content knowledge, and (c) reflective thinking. Many other claims have been made about the value of cases but have not yet been tested. The following section describes the theoretical foundations and emerging empirical evidence for case use in teacher education.

Cases for thinking skills - problem solving and decision making.

The potential of using cases to promote problem solving and decision-making has prompted many scholars to focus less on what teachers think

about in favor of investigating how teachers think (Greenwood & Parkay, 1989; Harrington, 1995; Kleinfeld, 1992b; Silverman, Welty , & Lyon, 1992, 1994; Stoiber, 1991; White, 1993). Several case books have recently been published containing cases with dilemmas aimed at stimulating students' problem solving ability (Silverman, Welty, & Lyon, 1992, 1994; Greenwood & Parkay, 1989). Kleinfeld (1991) studied 54 students comparing problem solving ability between students taught through cases and those taught through other discussion methods. Data included midterm exams, an attitude survey, classroom observations, and the standard university evaluation process. She concluded that "students taught by the case method approach showed significantly greater ability to analyze an educational problem" (Kleinfeld, 1991, p. 10).

Harrington (1995) recently examined preservice teachers' written case analyses to determine how the students reasoned when exposed to a case dilemma. Four case analyses written by 26 participants were investigated in an early teacher preparation course. Changes from the beginning to the end of the course occurred in some students abilities to make arguments that are more inclusive, grounded, and critical than they were at the beginning of the course. At the beginning, approximately one third of the students gave no support for arguments, one third gave some support, and the final third were able to draw from multiple sources when making an argument. Near the end of the course, approximately one half of the students were able to draw from multiple sources, one third were able to give some support for their arguments, and only two students continued to state arguments with no support (Harrington, 1995). An interesting observation from this study is that

the students demonstrated these gains very early in the teacher education program. Most of the students were sophomores who were taking their first course in teacher education after beginning the program, which is similar to the participants who were involved in this study.

Through the use of pre-and-post interviews, White (1993) studied two separate elementary education classes that used videocases to stimulate problem-solving discussions. She initially planned on collapsing the data from both classes into one group, but differences on the pre-test prompted White to analyze the data for each group separately. Pre-and-post interview data following the viewing of a videocase were coded according to a problem-solving rubric and submitted to statistical analyses. White reported that one group made significant gains in problem solving ability while the other did not. The group that showed a significant gain was able to shift emphasis on the types of problems they identified but were unable to alter the knowledge they used to inform their decisions (White, 1993). Possible explanations for the difference in problem solving scores is the discrepancy of the number of participants in each group (22 and 10) and the fact that one class was made up of elementary education majors and the other class contained a mixture of elementary education majors and special education majors. The same cases were used for both classes, and it has been documented that cases must be carefully chosen for specific purposes.

Stoiber (1991) studied how the use of cases for teaching classroom management to preservice teachers compared to a technical teaching style. Over a 10-week period, the treatment group analyzed cases emphasizing decision making strategies while the control group was taught technical

management skills. Researchers found that the case group was able to apply more decision making strategies and provided more reasons for the decisions they made than the control group. Furthermore, the case group also had better perceptions of themselves as decision makers.

The emphasis on thinking process by these researchers contributed to the conception of this study. This study included, however, other aspects such as teacher knowledge and attitudes. Clearly, these scholars feel that there is more to teaching than knowing your content. How a teacher thinks about his or teaching situation needs to be addressed by teacher educators. Teacher education evidence that substantiates the theoretical claims made by advocates of case use is beginning to grow.

Cases as content. Some researchers have investigated the power of cases to teach content in a situated fashion. Much information stems from the work of cognitive psychologist Rand Spiro and his Cognitive Flexibility Theory. Drawing from Spiro's work in medical education, some scholars in teacher education have focused on using cases to transmit content knowledge and pedagogical content knowledge (Barnett, 1991ab; Barnett & Cwirko-Godycki, 1988; Barnett & Tyson, 1993; Shulman, 1992; Wilson, 1992). Wilson (1992) stressed that new methods for teaching subject matter knowledge, such as case-based teaching, need to be explored. From her work she concluded that it is not only important to understand what students are learning from cases but also when they will learn. She stated that students will learn at their own pace according to their own experiences (Wilson, 1992).

Barnett and Cwirko-Godycki (1988) compared case analyses between experienced and novice teachers. Through content analysis of case

discussions, they found that novices reacted differently to cases than experts. The novices emphasized pedagogy more than content and vise-versa for the experienced teachers. However, the researchers did point to some pedagogical content knowledge learning for both experts and novices.

Barnett (1991a) set out to sequence a group of math cases based on the themes that emerged from the cases. Groups of experts and novices each discussed the same cases, and consistent issues were discussed across several groups. She used this information to order math course content for preparation of elementary teachers. However, as was previously mentioned, findings by Corrigan and Morine-Dershimer contradict the notion that cases can be created to highlight specific issues. Further comparison between these studies reveals that Barnett (1991a) used short vignette cases created specifically for math content, whereas the case used in the study by Corrigan and Morine-Dershimer (1995) contained several complex social issues. The differences in the types of cases and the methods of discussion used make it impossible to draw conclusions from these two studies. More research is needed in this area.

Additional concerns for Barnett and her colleagues at the Far West Regional Laboratory are teachers' abilities to frame problems, analyze situations, and debate the pros and cons of various alternatives (Barnett, 1991a, 1991b). They link this process, often referred to as reflection, to the development of pedagogical content knowledge in preservice and inservice teachers. The success in developing pedagogical content knowledge in teachers through cases prompted Barnett and her colleagues to recently

compile a comprehensive set of cases written by teachers containing many aspects of teaching math to elementary students (Barnett, 1994a, 1994b).

Kleinfeld (1992a) investigated the pedagogical power of case use as it relates to pedagogical content knowledge in the teaching of literature. She developed a case based on the teaching of Shakespeare's Hamlet to a diverse set of students. The study included a quantitative analysis of questions asked both before and after the case discussion. Data analysis included counting the number of problems recognized and possible solutions identified in the case responses. Kleinfeld (1992) noted that the cases contributed to the students' understanding of the reasons for selecting literature to teach and of the fundamental purposes for teaching literature. Students' abilities to anticipate problems, perspectives, and to generate possible methods for teaching the content also improved.

One comparison study did not show favorable results for students taught through cases versus students taught through direct instruction. In an experimental treatment and control group design, James (1991) found no differences in the quality of content learned between preservice teachers taught through the case method and direct instruction during a nine-week classroom management course. However, the researcher did note that students liked the use of cases better than direct instruction.

This line of research has impacted the development of the cases for this study. The "content" aspect of case use considers what the students discuss and learn. Teachers need an in-depth understanding of content to effectively draw on information needed to solve problems. The cases for this study were developed specifically to enhance students' understanding of elementary

educational games teaching. Further explanation of how the cases were developed for this study is in Chapter III.

Cases for reflection. Richert (1991ab) noted that given the restraints of the workplace, teachers need structured opportunities to practice reflection. "Teachers learn to be reflective as they learn to think critically about their work and learn to see their work as problematic rather than given" (Richert, 1991b, p. 122) Richert argued that the complexity and variability of teaching requires the ability to focus on problems that are encountered in the workplace. "Working with cases help teachers to focus. They learn what to attend to in any given situation" (p. 123). In largely descriptive studies, Richert (1991b, 1992) reported that teacher education students found the process of using cases for reflection stimulating and rewarding.

Recently, researchers at the Far West Laboratory have focused on using cases to encourage feelings of personal efficacy in preservice teachers. Barnett and Tyson (1993b), focusing on the attitude of reflection, found that following case analysis students considered themselves to have a greater impact as "change agents" in the schools. Another extensive, longitudinal study, following 20 students for two years, revealed that students developed increasingly astute skills for critically analyzing cases, their own teaching, and comments of their peers (Barnett & Tyson, 1993a).

Harrington (1991) noted that learning to teach is developmental and teacher educators should be concerned with the thought processes of their students. Building on the work of Dewey (1933), Harrington and Hodson (1993) qualitatively investigated written case analyses of 26 preservice teachers to describe students' reflective attitudes. Multiple passes through case

analyses revealed themes regarding Dewey's three attitudes of reflection: (1) open-mindedness, (2) responsibility, and (3) whole-heartedness. They defined open-mindedness as the ability to view teaching situations from multiple perspectives. Analysis revealed that most of the students adopted a child-focused perspective when analyzing the case. A few students adopted the teacher's perspective or were able to integrate the two perspectives. Responsibility was measured according to the students' moral and ethical considerations of consequences; the researchers found most of the responses considered only a short term view. Whole-heartedness involves a commitment to keeping conclusions tentative for continued learning, and a willingness to confront one's beliefs based on new information. Of particular interest to the development of this study, the authors found it difficult to measure whole-heartedness based solely on written case analyses. For this reason, a questionnaire measuring reflective orientation (reflective attitude) and interviews were used to discuss the influence of case discussions on preservice teachers' reflective attitudes.

In a teacher education descriptive study similar to this one, Lundeberg and Fawver (1994) investigated whether an entire course built around case-based teaching affected reflective cognitive growth in preservice teachers. Pre-and-post written analysis of cases, metacognitive reflective papers, and self-reported changes in beliefs made up the data for this study. The researchers found that the preservice teachers exhibited cognitive growth in areas of flexibility (ability to identify problems and solutions), connectedness (ability to draw on theories and connect them to situated problems), perspective taking (ability to view cases from several perspectives), and perceived

meaningfulness (willingness to evaluate theoretical principals against personal beliefs). They also found that non-traditional students and women showed significantly greater gains in cognitive growth than traditional students and men, respectively (Lundeberg & Fawver, 1994).

Parts of the framework for assessing the influence of case discussions used by Lundeberg and Fawver (1993) were borrowed and adapted for this study. Flexibility, connectedness, and perceived meaningfulness were included in the definition of reflection for this study.

Cases use in physical education. Before discussing the research questions, it is appropriate to review the previous use of cases in physical education teacher education. To date, no studies have been conducted regarding case use in physical education teacher education. However, some narrative cases have recently been published (Boyce, 1992, 1993, 1995; Rog, 1986; Veal, 1995). Boyce has been the leading proponent for case use in physical education teacher preparation. At the University of Virginia, B. A. Boyce has used cases as culminating experiences in elementary and secondary methods courses (personal communication, February, 1995). She uses the case study approach primarily to promote problem solving.

> By capitalizing on the complex realities of the teaching/learning environment, this teaching approach requires preservice students to sort through many levels of information and to arrive at solutions that are based not only on current theory and feasibility but also on the ramifications that different courses of action produce. (p. 44)

In a recent publication, Boyce (1995) outlined some helpful suggestions for developing cases and using case methods in physical education teacher education. For example, she suggested that case writers use interesting titles

and openings to draw readers into the story and to include flashbacks for filling in useful information. When teaching the case, Boyce warned that for students to actively participate they must be assured that their responses will be considered with sensitivity and respect. Boyce's (1995) suggestions have been considered and inserted within this study where appropriate.

Summary. Cases have been used by the fields of law, medicine, and business for many years. Each profession has distinct methods and purposes for case use. The practice continues today despite the lack of empirical evidence to support it. It is clear that cases and case methods must be carefully chosen for a particular purpose; teacher educators have drawn on information from other fields to define their desired purpose of cases for teacher education. Teacher educators have primarily focused on using cases to enhance generic teacher thinking, content and pedagogical content knowledge, and teacher reflection. Some evidence suggests that cases are useful for these purposes, although much more research is needed. Remote case use in physical education teacher education has occurred; however, no studies of documenting the influence of cases or case discussions exists. This descriptive study was the first to assess the influence of case discussions on physical education preservice teachers' reflection. The research questions (specified in Chapter I) concerning reflection skill and will were derived from the history of case use in other fields, current literature on case use in teacher education, and teacher reflection/knowledge literature. The following chapter describes the context and specific methodology of the this study.

CHAPTER III

METHOD

Overview of Study

The purpose of this study was to investigate and describe the influence of case discussions on physical education preservice teachers' reflection in an elementary educational games class. Measures of preservice teachers' reflection were taken before and after three case discussions which were positioned in the middle of the course. Reflection was divided into two parts, skill and will. Part one included two research questions: (1) What is the influence of case discussions on preservice teachers flexibility (ability to identify problems and solutions in written reflections on lesson episodes)? and (2) What is the influence of case discussions on preservice teachers connectedness (ability to draw on relevant facts, theories (concepts) or personal experiences in written reflections on lesson episodes)? Prior to the case discussions, students participated in three lesson episodes and wrote reflections about them. After the case discussions the students wrote reflections on the same three lesson episodes via videotape. The reflections were scored for identification of problems and solutions (flexibility) and the ability to draw on relevant concepts or personal experiences (connectedness). Changes in preservice teachers' reflective ability were described for students classified as high-reflective (HRG), middle-reflective (MRG), and low-

reflective (LRG); group classifications were based on a questionnaire administered at the beginning of the study that assessed orientations toward reflection. Post-metacognitive interviews allowed the students to review their pre-and-post reflections and identify discrepancies between them. Students also expressed their perceptions of how they were influenced by the case discussions. Interviews were transcribed and analyzed regarding reflective ability. The results of these data are described in Chapter IV.

The second part of reflection included the will to reflect or having an attitude oriented toward reflection. This aspect involved two research questions: (1) What is the influence of case discussions on preservice teachers' view of teaching as problematic (a desire to keep conclusions tentative and a recognition of a need for life-long learning)? and (2) What is the influence of case discussions on preservice teachers' perceived meaningfulness (willingness to evaluate personal beliefs about teaching based on new information)? Based on data from the questionnaires and post-interviews, four preservice teachers were identified as oriented toward reflection and four were identified as non-reflectively oriented. Cases of these groups are described in Chapter V. Following is a more complete explanation of the research method.

Context of the Study

The study took place during the 1995 fall semester at a state university in the southeast and was conducted within a physical education teacher

education elementary content class entitled Children's Physical Education II: Educational Games. The class met twice per week for 75 minutes per class. The one-credit course is part of the teacher preparation program at the university. Two physical education tracks are available at the university; one is a general exercise and sport science degree, and the other is teacher education. The educational games course is required for preservice teachers and is generally taken during the junior year.

The understanding and study of human movement is a hallmark of this teacher education program. The educational games course was designed with the assumption that movement is the content of physical education. The educational games content in the course text (Barrett, in prep.) describes a movement content structure specifically used for teaching elementary educational games. The structure was derived from the movement framework of Laban as adapted by Logsden and Barrett (1984), the movement sciences of biomechanics and motor development, existing literature on sports and games, and the author's personal knowledge. In addition, the pedagogical emphasis is child-centered, recognizing the individuality of children and advocating the development of creativity and problem-solving with skillful movement.

Developmentally appropriate teaching, as defined by Barrett, Williams, and Whitall (1992), was emphasized throughout the course. They summarized, "Teaching from a developmental perspective implies that (1) as a teacher you believe that teaching is both age and experience related, (2) change is specific to the individual, (c) change occurs in an orderly and

sequential fashion, and (4) the context in which the movement performance takes place has a direct influence on its outcome" (p. 117).

The course content is organized around a set of interrelated big ideas outlined in the course text (Barrett, in prep.). Big ideas were single skills, combination skills, strategies and tactics, game forms, and criteria for assessing the educational value of a game. Two game forms, conventional and original, were explored. Conventional games are those that already exist, they can be found in physical education texts and in the minds of experienced professionals. Original games can be created by the teacher, the students, or a combination of both. The creation of original games was stressed in the course because of the need to adapt to individual students and to match learning activities with stated learning objectives.

Game-related movement skills were classified as manipulative (catching-collecting, striking-throwing, carrying-propelling), locomotor (running, jumping, sliding, side-stepping, rolling for recovery), and non-locomotor (bending, twisting, extending). Manipulative and locomotor skills were explored as single skills (e.g., throwing, striking, running, sliding) and combination skills (running and throwing, jumping and catching). Single and combination skills were made more challenging and game-like through specialized use of time, force, and space, and further developed by modifying objects, implements, and equipment.

Game strategies and tactics were organized around three game classifications, wall/net, field/striking, and invasion. The emphasis on teaching strategies and the contextual nature of skills is similar to the Games

for Understanding or Tactical Perspective found in current games literature. (Werner, Thorpe, & Bunker, 1996).

A final area of study in the course involved preservice teachers developing an understanding of how to evaluate the educational value of a game. Both original and conventional games needed to be judged according to their educational utility, and the course text included a set of criteria phrased in question format that could be used for this purpose. The six criteria are: (1) Are the children actively involved?, (2) Are the children being successful/being challenged?, (3) Are the children exhibiting positive social behaviors?, (4) Does the game flow?, (5) Are the children safe?, and (6) Are the children learning (Barrett, in prep.)?

The course included lectures, class assignments, various learning experiences, two quizzes, and a final project. The semester consisted of 15 weeks of course meetings followed by a final exam date. Appendix A is the course syllabus and course outline describing the topical progression used in the course. In addition, it was explained to the students at the beginning of the course that the bulk of the course content is connected, or interrelated. Therefore, all of the big ideas were introduced at the beginning of the course so that the students could begin to conceptualize the whole picture. The rest of the course consisted of a more in-depth study of each big idea through movement and further study. This meant that students were familiar with all of the course content by the third day of class, albeit at an introductory level.

Due to the inclusion of three case discussions and six lesson episode reflections (each taking one-half day of class), six total class days were altered

from the original elementary educational games course. In previous years, those class days were used to teach the skills and strategies of a novel sport (game) to the students while modeling the preferred instructional style. This aspect of the course was replaced by the case discussions and lesson episode reflections.

Role of Researcher/Teacher

I acted as both as the researcher and the course instructor during the project. In preparation for teaching the course, I attended the class the previous fall, participated in all student activities, and met frequently with the regular professor of the course. Regarding the preparation of this research project, it was imperative that my goals as the teacher of the course and the researcher for this study did not conflict. The development of reflective teachers is a priority of the physical education teacher education faculty at the university. Using cases to try to improve preservice teachers' reflection was consistent with the philosophy of the faculty. The course objectives were not altered to accommodate the research project; rather, the research project provided a means for assessing the usefulness of cases and case methods for fulfilling the course objectives.

Participants

The 12 physical education preservice teachers enrolled in the class were asked to participate in study. Students were told that the case discussions and lesson reflections were a part of the course as well as the research project. Extra work included their participation in a brief interview at the end of the semester and completing pre-and-post questionnaires. A small class party at the end of the project was offered to those who participated in the project. It

was made clear to the students that choosing not to participate in the study would not affect their course grades or cause them to miss any part of the course. Fortunately, all enrolled students volunteered to participate. Consent from the students and the university's human subjects panel was acquired prior to beginning the study.

Nine males and three females with a mean age of 23.6 were included in the study. Seven members were in their junior year of teacher preparation meaning that they were scheduled to student teach one year from the following spring. Three other students were on the same schedule for student teaching but were classified as A-Licensure, meaning they were obtaining a teaching license in physical education but had already completed a bachelors' degree in another area. Two members were sophomores who decided to take the course early based on personal scheduling. A profile of each student involved in the study is located in Figure 2 in Chapter IV.

Paradigm

This study was a first attempt at assessing the influence of case discussions in physical education teacher education. Few physical education cases were available, so it was necessary to develop cases while studying their influence, as recommended by Merseth (1996) in her recent review of case use in teacher education. Cases should be created or carefully selected for a particular purpose, so three cases were developed specifically for this study and the elementary educational games class.

The research questions regarding the influence of case discussions on physical education preservice teachers' reflection and the constraints of conducting applied research made it difficult to conduct entirely experimental

or entirely qualitative research. The low number of students enrolled in the course (12) and desire to offer equitable education made it impossible to allow for a control group in this study. The low number of subjects also means that statistical analysis would add little, if any, useful information. In addition, as both the researcher and teacher of the course, I was embedded in the process of both assessing the value of the case discussions and educating preservice teachers. My bias is obvious, I wanted the case discussions to positively impact reflection. The challenge was to create a research design that would allow me to work hard to make the case discussions successful without compromising the credibility of the results.

The desire to investigate the influence the case discussions on preservice teachers' reflection called for an intervention design, with pre-and-post measures. It was decided to place the case discussions in the middle of the course and collect multiple measures before and after them in an attempt to triangulate the findings. Reflection was divided into skill and will; multiple measures were gathered for both aspects of reflection. To answer the research questions, both quantitative and qualitative data were analyzed. The goal was to use the data to provide a description of changes in preservice teachers' reflection, if any, that occurred following their participation in three case discussions.

The reader is encouraged to remember that the researcher was the teacher in the course and wanted the case discussions to have an impact on preservice teachers' reflection. All data were analyzed by the researcher, and outside reviewers were used where appropriate. All procedures and controls are explained in this chapter.

Overall Design

This study compared students' reflective ability (skill) and attitudes (will) prior to and after participating in three case discussions. The study was conducted in an applied setting; multiple measures were used in an attempt to triangulate the results. The dependent variable, reflection, was divided into two parts, skill and will. The influence of case discussions on reflective skill, or ability, was described through an analysis of pre-and-post written reflections and post-metacognitive interviews. Reflective ability was defined as flexibility (the ability to identify problems and solutions when reflecting on lesson episodes) and connectedness (the ability to draw on concepts and personal experiences when reflecting on lesson episodes). The will, or reflectively oriented attitude, was described through an analysis of pre-and-post questionnaires and post-interviews. Descriptions documenting the influence of case discussions on students who were reflectively oriented and students who were non-reflectively oriented at the end of the study are provided in Chapter V. The reflective orientation included a recognition of the need for continued learning and keeping conclusions tentative. It also meant the preservice teacher was willing to evaluate his or her own beliefs about teaching based on new information.

Procedures

Two reflection pre-assessments were chosen to divide the participants into three groups based on their initial orientations toward reflection. Unfortunately, the IEO-test (Korthagen, 1988) did not reveal much variability among the participants, so it was not used to divide the students into groups. However, the reflection orientation pre-questionnaire adapted from LaBoskey

(1994) was useful for this purpose. Based on the numerical scores from the pre-questionnaire, the preservice teachers were divided into three groups: (a) high reflective (HRG), (b) middle reflective (MRG), and low reflective (LRG).

Following the pre-assessment, the preservice teachers were given three opportunities to reflect on lesson episodes. Lesson episodes were brief elementary physical education lessons taught by the course instructor in which the students participated as pupils in the class. The case discussions followed the first three reflections. Three more rounds of lesson episode reflections using videotapes of the first three lesson episodes followed the case discussions. The post-questionnaire and metacognitive interview were conducted near the end of the semester. Figure 1 shows the chronological order by week of the data collection and case discussions.

Figure 1

Chronological Order of Reflection Measures and Case Discussions in the Elementary Educational Games Class

Week 2:	Pre-questionnaire and IEO-Test administered
Week 3:	Lesson Episode Reflection # 1 (live modified kickball)
Week 4:	Lesson Episode Reflection # 2 (live modified deck tennis)
Week 5:	Lesson Episode Reflection # 3 (live modified lacrosse)
Week 6:	Case Discussion # 1 "Where Have You Gone, Joe DiMaggio"
Week 7:	Case Discussion # 2 "The Outlook Wasn't Brilliant"
Week 8:	Case Discussion # 3 "The Note"
Week 9:	Lesson Episode Reflection # 4 (video modified kickball)
Week 10:	Lesson Episode Reflection # 5 (video modified deck tennis)
Week 11:	Lesson Episode Reflection # 6 (video modified lacrosse)
Week 12:	Post-Metacognitive Interviews
Week 13:	Post-Metacognitive Interviews
Week 14:	Post-questionnaire

Anonymity and Confidentiality of Data Analysis

Because of my dual role as researcher and teacher, the study was subject to researcher bias. To reduce these effects in data analysis, steps were taken to eliminate my knowledge of which students fell into specific reflection orientation groups (HRG, MRG, LRG). A master sheet containing an alias numbering system was distributed on the first day; students used this number in place of a name on each instrument and lesson episode reflection. The purpose of this was to ensure that the researcher/teacher was unaware of reflective grouping during data analysis. Completion of lesson episode reflections and participation in case discussions was required, but the quality

of responses were not a part of the course grades. Pseudonyms were used to report results to maintain confidentiality.

Instrumentation

Data were collected from six sources: (1) a student information form, (2) an orientation toward reflection inventory, (3) pre-and-post reflection orientation questionnaires, (4) three pre-and-post written lesson episode reflections, (5) post-metacognitive interviews, and (6) transcriptions of case discussions.

Student information form. Some researchers have reported differences in written reflections following case discussions based on age and gender while others have not. Lundeberg and Fawver (1994) reported differences in reflection measures between traditional and non-traditional students and between men and women. However, other researchers found no differences (Kleinfeld, 1991; Richardson & Kile, 1992). To add to data interpretation, a student information form was used to create a profile of each of the preservice teachers. The information was collected at the end of the semester. Data included students' (a) grade point average, (b) age, (c) gender, and (d) program or year in school.

IEO-test. The internal/external orientation test (IEO-test) was created by Korthagen and his colleagues for the purpose of evaluating the Department of Mathematics at the Stichting Opleiding Leraren, a teacher's college in The Netherlands (Korthagen, 1988, 1993). Korthagen and his colleagues developed this instrument because they suspected that preservice teachers differed in their inclinations toward reflection. The mathematics department designed their teaching program around the notion of reflection, and they

needed a way to measure its effectiveness. The test includes three domains: (1) the prospective teacher her(him)self, (2) the relationship with fellow students, and (3) the subject-matter (Korthagen, 1993). The instrument was designed to measure the degree to which students' learning relied on reflective (internal) factors or on advice, guidance, or support from outside (external) sources (Korthagen, 1988).

The Dutch version of the IEO-tests was administered to 138 first and second year students in the Netherlands, yielding Cronbach Alphas ranging from .77 to .87 (Korthagen, 1988). An English version of the test was used to separate students into groups for an experimental study of the effect of viewing and discussions of math classroom observations. Although there were only 12 subjects in this study, the Cronbach Alphas ranged from .74 to .95 (Van Zoest, 1995). Instrument tests performed by Korthagen (1993) allowed him to conclude that "the IEO-test is a reliable instrument" (p. 228).

Korthagen used the IEO-test to measure reflective trends among classes of students, and he cautions using this instrument to make individual interpretations of reflection. However, Van Zoest (1995) did use the instrument to assess individual preservice math teachers and randomized them into treatment and control groups. Other pretest data collected in that study did not show significant differences between the groups, thereby giving the instrument credibility for individual use.

Korthagen's (1988) subject-matter domain in the IEO-test was created for math teachers. The items on the instrument in the subject-matter domain were altered by the researcher to include questions about physical

education generally and teaching games specifically (Appendix B). Students completed survey before participating in the lesson reflections.

Unfortunately, several concerns prompted the removal of the IEO-test data source as a means for differentiating between initial reflection orientations. The adapted IEO-test revealed very little variation between the twelve preservice teachers involved in the study. The average scores for each participant on the internal questions (reflection) is listed in Table 1 in Chapter IV. Since the scores were so closely packed together, it was inappropriate to use this instrument for creating groups.

The substitution of learning physical skills and game strategies for solving math problems may have contributed to the problem. It may be that the change in domain from cognitive learning to psychomotor learning invalidated the use of this instrument for assessing reflection orientation in preservice physical education teachers.

Korthagen (1993) stated that this instrument should only be used for measuring trends for large numbers of students and should not be used on individual students. However, the choice was made to administer an adaptation of the instrument due to its previous use by Van Zoest (1995) who used the instrument and several other variables to create equitable groups for her study on case discussions. However, this study seems to indicate that the successful use of this instrument lies in its original purpose, namely, to assess trends in orientations toward reflection in large groups over time. The low number of participants in this study (12) perhaps contributed to the low variability in scores.

Pre-and-post reflection orientation questionnaires. The reflection orientation questionnaire was distributed at the beginning and end of the course (Appendix C). It was adapted from LaBoskey's (1994) questionnaire for measuring what she called "spontaneous reflection," which occurs when "an individual displays reflective thinking in response to an indirect question or circumstance" (p. 27). LaBoskey (1994) described what she believed to be the basis for teacher reflection.

> For me, then, the fundamental goal of teacher education is to teach novices to temper their judgments, to replace unsubstantiated opinion with what Dewey (1910) calls "grounded belief" -- grounded belief that is constantly in a state of flux and open to revision. (p. 9)

The questionnaire was used to distinguish between what she called "alert novices" and "commonsense thinkers" (LaBoskey, 1994 p. 27). The alert novices were considered reflective if they displayed the following characteristics: (a) student orientation, (b) long-term view, (c) differentiation of teacher and learner roles, (d) openness to learning, (e) growth orientation, (e) reasoning grounded in knowledge of self, learner, and subject-matter, (f) strategic and imaginative thinking, and (g) acknowledgment of the need for conclusions to be tentative. Commonsense thinkers' attitudes included: (a) self orientation, (b) short-term view, (c) trial and error mentality, (d) lack of awareness of need to learn, (e) a feeling of already knowing much from having been in classrooms before, (f) broad generalizations, and (g) existing structures taken as given (LaBoskey, 1994).

After several months of careful modifications of the questionnaire and scoring rubric, LaBoskey concluded that the questionnaire was useful for

measuring propensity toward reflection and reflection ability. Another major data source in LaBoskey's study was a series of write-ups of case investigations that were used to determine reflectivity. These data were given a score of reflective, unreflective, or indeterminable. Her results on these data closely parallel the grouping scores found in her pre-questionnaire. The "alert novices" received mostly reflective scores and the "commonsense thinkers" received mostly unreflective scores. Therefore, the pre-questionnaire instrument was corroborated with other data. For this study, the pre-questionnaire scores were used to place students into reflection groups (high-reflective, middle-reflective, low-reflective). One question was removed from the original instrument developed by LaBoskey because it could not be used on the post-questionnaire. Group data was used to describe changes in preservice teachers' reflective ability found in Chapter IV. The pre-and-post questionnaire scores were also used as data for the cases describing students' reflective attitudes found in Chapter V.

Pre-and-post lesson reflections. At three data points prior to case discussions, students were asked to participate in lesson episodes and write reflections based on what they experienced. The class met twice per week, but there was only one lesson episode reflection per week. The lesson episodes were approximately 10 minutes long and included important aspects of the course. They were designed and taught by the teacher/researcher. Each was videotaped, and the teacher/researcher wore a wireless microphone. Following the case discussions, the preservice teachers viewed the same lesson episodes via videotape and wrote written reflections on what they saw.

These pre-and-post reflections were analyzed and compared for changes in preservice teachers' flexibility and connectedness.

Researchers who have previously studied case use in teacher education have collected data primarily from reactions to cases (Levin, 1995; Lundeberg & Fawver, 1994; Van Zoest, 1995) and case discussions (Barnett, 1991a, Barnett & Cwirko-Godycki, 1988). Reflections on live or videotape lesson episodes were chosen because the students were early in their teacher preparation and had limited or no experience as teachers of physical education. It was decided that watching an unknown teacher on a videotape and writing about that episode may be too far removed from their frame of reference to mean anything to them at their early stage in development. The students in this course had rich backgrounds as participants in activity and appeared comfortable during the lesson episodes.

Students participated in the lessons, playing the role of students in a typical gymnasium setting. They were instructed not to ask questions from the perspective of a preservice teacher, but they were allowed to interact with the teacher in their roles as lesson participants. Descriptions of the lesson episodes are in Appendix D.

Following each 10-minute lesson, students were given the following instructions: "Please spend the next 15 minutes writing about what you observed in the previous lesson. Include as much information as possible. Identify issues or problems that you noticed and suggest solutions if appropriate. Be sure to add facts, theories, and/or your own personal experiences that are relevant." Students were given 15 minutes to write their responses. In both the before and after reflections time was not a factor.

Every student finished writing before time ran out. There was no discussion of the lesson episodes during the class or in any other part of the course.

The "active" nature of the lesson episode format used before the case discussions made them impossible to replicate for the post-measures. However, a slight variation between pre-and-post prompts for reflections was desirable so students would not be tempted to try to replicate their answers or become bored with the method. Instead of participating in three new lessons, the students viewed videotapes taken during the pre-treatment lesson episodes. The same format and instructions for writing reflections used before the case discussions were used after the case discussions.

Post-metacognitive interviews. Each preservice teacher participated in a metacognitive interview conducted by the researcher. The term metacognitive interview was chosen because the participants were asked to review their own reflection data and consider their own cognitive growth. During the interview, students were asked to review all six of their lesson reflections and compare the first round to the second round. Next, they were asked to list and comment on the discrepancies between the parallel lesson episode reflections. For example, reflection two and reflection five were both based on the same lesson; if differences in the number of issues, proposed solutions, theories, facts, or personal experiences occurred, the students were asked to explain the changes. Students were encouraged to give voice to their own perceived cognitive growth. The purpose of this was to determine the content of the discrepancies and whether the students made connections between the changes in their reflections and the case discussions.

During the interview, the researcher asked the students to recall the case discussions and to list any changes in beliefs that occurred as a result of the case discussions. The preservice teachers identified specific issues raised in each case that confirmed or conflicted with their previous beliefs. They also talked about whether the cases were helpful to them and why. The interview protocol is located in Appendix E.

Case discussion transcriptions. The three case discussions were videotaped and audiotaped, and the audiotapes were transcribed. The transcriptions were used to determine the topics of discussion brought out in each case. They were also used to assess the level of verbal participation by each student and the amount of teacher talk.

Intervention

The intervention, which included the reading and discussion of three cases, lasted three weeks and began in week six of the semester. The case discussions took place on the Tuesday meeting of the educational games class for weeks six, seven, and eight (see Figure 1). The cases and the case method are explained in the following section.

Cases. Three cases were specifically developed by the researcher/teacher for the educational games class. Each case was approximately seven double-spaced pages long (Appendices F, G, & H). The theoretical rationale that guided the case development was the same rationale that guided this study. Each case describes a dilemma associated with teaching games in public schools (Greenwood & Parkay, 1989; Kleinfeld, 1992; Silverman, Welty , & Lyon, 1992). According to Levin's (1993) definition, cases must be "sufficiently substantive and complex to allow for multiple

levels of analysis and interpretation. Good cases represent the problems, dilemmas, and complexity of teaching something to someone in context" (p. 2). The ultimate goal was to create cases that were both sufficiently compelling and relevant to elicit thoughtful discussion from the preservice teachers in the class.

Facilitating discussion about the content of the class was also a primary concern in the case development. The cases were fictional, yet were derived from real-world incidents that have occurred in various gymnasia. Each case was based on a specific issue collaboratively identified by the researcher and the regular professor as critical to the philosophy espoused at the university regarding games teaching. The cases were designed to elicit discussion of a major issue in games teaching. "Where have you gone, Joe DiMaggio?" focuses attention on issues of competition in physical education gymnasiums. "The Note" was based on the judgment of the educational quality of curricular choices made by physical education teachers. Specifically, the case examines differences between an activity approach and a movement-based approach. The third case, "The Outlook Wasn't Brilliant," explores different perspectives on teaching skills and games.

Although the cases are centered around major issues of considerable importance to preservice physical education teachers, they also contain several other issues that overlap from case to case. Spiro's Cognitive Flexibility Theory (Spiro, et al., 1987) suggests that professionals need multiple representations of content, and that cases can be used in conjunction with more traditional methods of teaching to facilitate knowledge acquisition in students. McDiarmid et al. (1989) explained that the melding of different

domains of knowledge, including beliefs and knowledge about pupils, content, and learning, is "at the heart of teaching" (p. 3). They expanded on Shulman's (1986) notion of pedagogical content knowledge by focusing on the representations that teachers construct to convey knowledge to learners. The authors argued that "the instructional representations that students encounter define their formal opportunities for learning about the subject matter--the possible, not the inevitable" (McDiarmid et al., 1989, p. 4). The cases in this study were constructed to stimulate preservice teachers to begin constructing representations about games content and teaching of elementary school physical education. The representations presented in the cases were designed to be used by the preservice teachers to construct meaning based on their own beliefs and new knowledge acquired throughout the class. McDiarmid and his colleagues put it this way:

> Teachers' instructional representations derive from two primary sources, one outside themselves and the other within. Because of the central role that representations play in enabling students to understand subject matter, teacher educators must help beginning teachers develop good representations and judge the appropriateness of existing ones. (McDiarmid et al., 1989, p. 8)

The cases developed for this study were reviewed and revised by teacher educators, teachers, graduate and undergraduate students in physical education teacher education prior to their use in the study. After the cases were written by the researcher, they were read by three teacher educators. Based on their recommendations, the cases were revised. Cases were pilot-tested with a group of students that included three undergraduates in physical

education, one pedagogy graduate student, and a first year teacher. Based on their recommendations the cases were again revised.

Organization of case discussions. Prior to case discussions, the participants read and reviewed a document containing the purposes and guidelines of cases discussions adapted from Levin (1993) (Appendix I). One class day before the case was discussed, copies of the case were distributed to the students with these instructions: "Please read the case carefully and write notes on a separate sheet of paper identifying important aspects to remember when we are discussing the case." The notes were checked prior to the case discussions to assure that the students read the case.

The facilitator and all 12 students participated in the case discussions together. Morine-Dershimer (1993) recommended that with large classes the students should be broken up into small groups. However, Richardson (1993) noted that the involvement of the teacher educator in the discussion is critical to the process. For this study, the whole class participated in each case discussion. Each case was discussed during a 75 minute class. The class was generally conducted in a gymnasium; but on case days, it met in a classroom. Chairs were set in a semi-circle facing a large posterboard set on an easel. The facilitator stood near the easel during most of the discussion.

One student was not able to participate in the third case discussion. The student read the case, took notes, and discussed it with the researcher on the following class day. For this reason his data were included in the analysis.

Case method. A pilot-test of the case method and my role as the case facilitator was conducted prior to the study. The pilot was videotaped and reviewed by two teacher educators experienced in case method. They

suggested that important information (case facts, inferences, issues) be written on posterboard during the case discussions. It was also suggested that the facilitator try to get the students to talk to each other rather than the facilitator. The method, described below, was revised based on their recommendations.

The case discussion format was developed based on guidelines from experienced teacher educators who have used cases extensively and the pilot-test. Levin (1993) noted that it is important that students begin by stating what they know from the case. Students were asked to state the facts from the case and describe what was known about the central characters. The facilitator wrote important factual information on the posterboard to help the participants follow along and stay focused. Following the gathering of the facts, the students were asked to make inferences based on the facts in the case. Critical information again was written on the posterboard. Students discussed the elements of the case based on issues that were raised. The direction that the discussion followed was based on the interests of the students and sometime subtle, sometimes not so subtle influence by the facilitator. Throughout the discussion, the participants were continually encouraged to identify problems in context and suggest solutions for those problems. Solutions were then evaluated by the rest of the group. Students also were encouraged make informed statements and draw from material they have learned in class and from previous experience. This general format was used for all three case discussions. Specific questions were prepared to stimulate discussion but were rarely used.

The facilitator moderated the discussion and tried to get verbal participation from all of the students in the class. Sometimes students would have difficulty gaining a chance to be heard, so the facilitator would call on them if they raised their hands. It was also necessary to prompt students to only have one person talking at a time. During heated discussion, several people tried to jump in at once. During these times the facilitator controlled the format of the discussion to a greater extent than if the discussion was cordial. The facilitator often rephrased statements made by the students to clarify what was said. At critical times the facilitator would probe a particular student to expand on a statement or ask a question. The goal was to get students to talk to each other and not to the facilitator. Analysis of the case transcriptions showed that the number of times the facilitator talked during the case discussions decreased from case one to three.

Data Analysis

Students reflected on three different lesson episodes before the case discussions and reflected on the same lesson episodes via videotape after the case discussions. Due to the differing lesson episodes, the purpose was not to establish a stable baseline measure. The comparison of pre-and-post reflections were used to provide an indication of the students' reflective ability with regard to flexibility and connectedness. Multiple data points were chosen to give the students several opportunities to reflect and to provide evidence of the influence of the case discussions. Post-metacognitive interviews were also used to assess the influence of case discussion on students' reflective ability. A control group and randomization was not possible nor necessary for this type of descriptive study. Several data sources

were used to give the reader an account of the learning that occurred. The visual display of the data was used to see if there was an appreciable difference between groups and before and after case discussions. The multiple data points and interview data provided a clearer picture of reflective ability regarding flexibility and connectedness than the single pre-test post-test design that dominates the literature in case investigations. Following is an explanation of data analysis used for each research question

Data analysis on the influence of case discussions on preservice teachers' reflective skill. Research questions one (Do preservice teachers improve their ability to identify problems and possible solutions to problems in written reflections after participation in case discussions) and two (Are preserve teachers better able to draw on theories, facts (concepts), or personal experiences in written reflections after participation in case discussions?) were answered using the pre-and-post lesson episode reflections and post-metacognitive interview data. Students were separated into reflective groups (HRG, MRG, LRG) based on their initial orientations toward reflection determined from the pre-questionnaire (explanation of the scoring of this questionnaire is found in the next section). Changes in flexibility and connectedness after case discussions were assessed for each group.

Reflections were collected and typed by the researcher. A coding system was designed to score the reflections. The researcher coded all of the reflections as they were completed by the students, and the coding system was periodically revised based on new information. When all reflections were coded, an outside person was trained to use the rubric and she coded a random sample of 10 reflections. Through discussion between the outside

person and the researcher, the coding rubric was again revised. Using the new rubric, the researcher again coded all 72 lesson episode reflections. The outside reviewer and researcher then discussed the coding results of five reflections and achieved consensus on coding.

Four aspects of flexibility (problems, solutions) and connectedness (concepts, personal experiences) were identified in the reflections. Each occurrence was given a score of one. For example, if a preservice teacher identified a problem in the lesson episode it was coded as one problem. For this study, the quality of the problem was not evaluated. Any problem identified by the preservice teacher was counted.

Every phrase in the lesson reflection was coded, but only problems, solutions, concepts, and personal experiences were counted as evidence of reflective ability. Each coding category and examples of coded phrases can be found in Appendix J.

The post-metacognitive interviews were transcribed and analyzed by the researcher. Of particular interest in the interviews was evidence of the influence of the case discussions on students' reflective ability. A content analysis (Bogden & Biklin, 1992) of two sections of the interview data including the students' reporting of discrepancies in their pre-and-post reflections and their assessment of the value of the case discussions was conducted. Multiple passes through the discrepancy data revealed themes regarding the influence of the case discussions. It was decided to organize the reported discrepancies by the content of each entry. Each discrepancy was coded and tallied according to the identified themes. Examples of how each

theme shows a connection between preservice teachers' improved reflective ability and the case discussions are reported in Chapter IV.

Themes regarding students' perceptions of the connection between their reflections and the case discussions, and their general perceptions of how, if at all, the case discussions affected them also emerged. Data were coded and tallied within these themes. Students' perceptions of the influence of case discussions are also reported in Chapter IV.

Data analysis on the influence of case discussions on preservice teachers' reflective will. Research questions three and four were answered using data from the pre-and-post questionnaires and post-interviews. These questions were: (3) What is the influence of case discussions on preservice teachers' view of teaching as problematic (a desire to keep conclusions tentative and a recognition of a need for life-long learning)? and (4) What is the influence of case discussions on preservice teachers' perceived meaningfulness (willingness to evaluate personal beliefs about teaching based on new information)? Viewing teaching as problematic was defined as the recognition of the need for continued learning and the desire to keep conclusions tentative. Perceived meaningfulness was defined as the willingness to confront and evaluate personal beliefs about teaching based on new information. These two constructs make up the will of reflection defined in this study. Two cases, each including four preservice teachers, were developed based on data from the pre-and-post questionnaires and the post interviews. Each case includes four students. One group was classified as reflectively oriented at the end of the course and the other group as non-reflectively oriented at the end of the course.

The questionnaires were scored based on LaBoskey's (1994) rubric. The researcher trained an outside person experienced with using rubrics to score the questionnaires. The researcher and the other person independently scored the questionnaires, then discussed discrepancies. Differences were resolved through discussion and further interpretation of the rubric. Discussion continued until an agreement was reached on all items. Pre-questionnaire scores were used to place students into reflection groups (high-reflective, middle-reflective, low-reflective). The post-questionnaires were scored using the same rubric that was used previously. The post-questionnaire responses were compared to the pre-questionnaire responses to assess whether they had changed enough to warrant a different score. The post-questionnaires were again scored by the outside person and differences were resolved. The numeric results from the pre-and-post scores were visually displayed and compared.

Interviews were transcribed and submitted to a content analysis (Bogden & Biklin, 1992). Multiple readings revealed themes regarding the reflective attitudes of the students. Data were coded according to these themes and were cut and pasted to theme headings. Based on these data and the results of the questionnaire, four students were identified as oriented toward reflection and four as not oriented toward reflection. Four students could not be coded in either category. The cases reporting these data are found in Chapter V.

CHAPTER IV
RESULTS ON REFLECTION SKILL

Introduction

Teachers who have been effective for several years distinguish themselves by the ability to identify problems in context and generate solutions, artfully drawing on relevant facts, theories and personal experiences. Cases and case discussions have been purported as a means for developing this ability, labeled reflection, in preservice teachers. The theory states that analyzing stories about real teaching situations fosters in preservice teachers the ability to see problems in the context in which they occur. Most likely the preservice teachers have only a shallow understanding of the knowledge base needed to effectively solve these problems, but the complexity of the problem allows them to develop a more in-depth understanding of subject matter as they wrestle with the real-world application of content. Solutions are proposed and evaluated against facts, theories, and personal experiences that are relevant. It was this process that was stressed during the case discussions conducted during the educational games class.

This chapter reports results concerning the first two research questions regarding the influence of case discussions on preservice teachers' reflective skill. The chapter begins with an explanation of how students were divided into reflective groups (HRG, MRG, LRG) based on their pre-questionnaire scores; a profile of students in each group is provided. Numerical scores for

flexibility and connectedness follow this section. Scores for flexibility and connectedness obtained prior to the case discussions are compared with those obtained after the case discussions. Finally, interview transcriptions were analyzed to determine links between changes in the students' reflective ability and the case discussions.

Grouping According to Initial Orientations Toward Reflection

This section describes the preservice teachers' orientations toward reflection based on data gathered at the beginning of the study. A profile of preservice teachers that made up the high, middle, and low reflective groups is included. It was necessary to analyze these data first because analysis of data for the questions regarding flexibility and connectedness needed to be grouped for comparison. Two measures were to be used to separate the preservice teachers according to orientations toward reflection, the adapted internal/external orientation (IEO) test (Korthagen, 1988,1193) and the adapted orientation toward reflection questionnaire (LaBoskey, 1994). However, following the data analysis of these two instruments it was decided to use only the questionnaire.

The IEO-test revealed very little variation between the twelve preservice teachers involved in the study. The average scores for each participant on the internal questions (reflection) are listed in Table 1.

Table 1

IEO-Test Average Scores for Preservice Teachers

1	2	3	4	5	6	7	8	9	10	11	12
2.84	3.48	3.55	3.61	3.35	3.52	3.10	3.87	3.42	3.12	3.35	3.71

Mean: 3.41
S.D. .29

The scores were clumped very closely together making it difficult and inappropriate to use this instrument for creating groups. As explained in Chapter III, various concerns prompted the removal of the IEO-test data source as a means for differentiating between initial reflection orientations.

The reflection orientation questionnaire adapted from LaBoskey (1994) was useful for separating students into a high-reflective group (HRG), middle-reflective group (MRG), and low-reflective group (LRG). The range of possible scores on the questionnaire was -30 to +30. Eight preservice teachers scored -20 or lower and were put in the low-reflective group. Three preservice teachers scored between -5 and + 10 and were put in the middle-reflective group. Only one student was placed in the high-reflective group based on his score of + 20. LaBoskey (1994) used similar numbers for grouping in her study except the range of possible scores was increased from -35 to - 35; adjustments were made to accommodate this difference. Similar to the pre-questionnaire results of this study, LaBoskey (1994) also had a low percentage of students who pre-tested into the high reflective group (14%). However, most of the students in her study could not be classified as either high or low (72%), while most of the students in this study were classified as

low-reflective (67%). The results of the questionnaire are displayed in Figure 2.

An information questionnaire was distributed to the preservice teachers at the end of the course to create a student profile. The LRG included six males and two females with an average age of 22.6 and an average G.P.A of 2.8. The MRG included two males and one female with an average age of 26.6 and an average G.P.A. of 3.0. Only one male preservice teacher was placed in the HRG, he was 22 years old and carried a 4.0 G.P.A. Table 2 contains the individual profiles of the participants.

Figure 2

Preservice Teachers' Reflection Score on Pre-Questionnaire

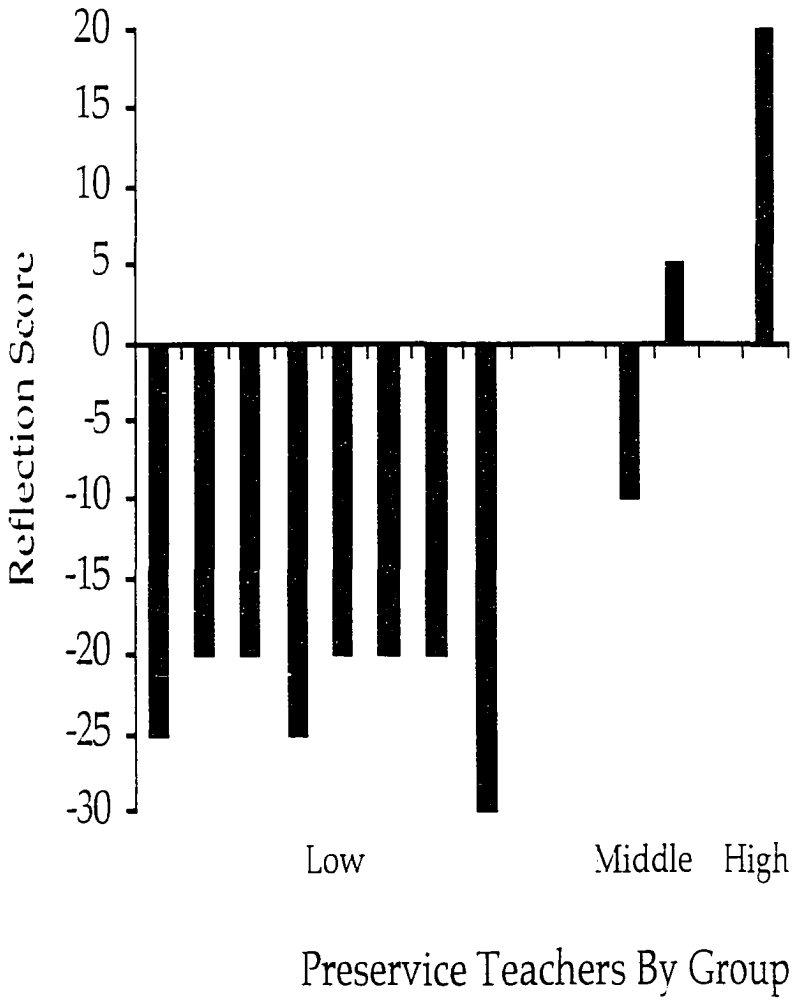


Table 2

Profile of Preservice Teachers in Low, Middle, and High Reflective Groups

GROUP	NAME	SEX	AGE	G.P.A.	STATUS
Low	Don	Male	21	2.8	Soph.
Low	Joe	Male	31	4.0	A-Lic.
Low	Steve	Male	21	2.3	Soph.
Low	Lisa	Female	21	2.9	Junior
Low	Paul	Male	20	2.7	Junior
Low	Nate	Male	23	3.0	A-Lic.
Low	Tara	Female	21	2.9	Junior
Low	Mark	Male	23	2.0	Junior
Middle	Carl	Male	31	3.3	Junior
Middle	Beth	Female	23	2.5	A-Lic.
Middle	John	Male	26	3.1	Junior
High	Dave	Male	22	4.0	Junior

Key

Group: Designated group based on reflection questionnaire scores
Name: Pseudonym chosen by researcher
Age: Reported at end of data collection
G.P.A. Grade Point Average at end of data collection
Status: Year in school or program description
(A-Lic.: Students with previous degree returning for teacher Licensure)

Format for Displaying Flexibility and Connectedness Data

The lesson episode reflections completed before and after the case discussions (3 before, 3 after) were analyzed for flexibility and connectedness numbers. Two different graphic representations (see Figures 3-8) are used to display the differences between groups and the differences for all groups before and after the case discussions. Both graph types display the same numbers, but each graph illustrates different things. The frequency polygons shown in Figures 3, 5, and 7 show flexibility and connectedness results in chronological order. Preservice teachers' opportunities to reflect on lesson episodes one, two, and three (weeks 3, 4, & 5 during semester) occurred prior to the three case discussions (weeks 6, 7, & 8), while reflections of episodes four, five, and six (weeks 9,10, & 11) occurred after the case discussions (see Figure 1).

The second graphic display, bar graphs, compare differences between pre-and-post reflections on the same lesson episodes. These are the same data used for the frequency polygons, but are shown for easier comparison. Reflections on episodes one, two, and three do not show a consistent baseline measure which was expected because the reflections were based on different episodes. Episode one was a kickball game emphasizing fun and teacher encouragement, lesson two was a deck tennis game emphasizing the teaching of net game strategy, and episode three was a lacrosse exercise and game emphasizing skill acquisition. Each episode included both good and bad teaching practices, but they were not the same. Following three weeks which included the case discussions, the students viewed the same episodes in the same order via videotaped recordings. For this reason, bar graphs displaying

the grouped numerical scores for flexibility and connectedness are displayed in Figures 4, 6, and 8.

Preservice Teachers' Flexibility

Flexibility was defined as the ability to identify problems and generate possible solutions to problems. Prior to case discussions, the preservice teachers were given three opportunities to participate in live lesson episodes and to write about what they experienced. After the case discussions, they were given another opportunity to write about the same episodes only this time they viewed the episode via videotape. The written responses were scored according to the procedure outlined in Chapter III and Appendix J. Problems and solutions were coded separately and graphed according to the three reflection groups (HRG, MRG, LRG). Actual problem and solution averages for each group are listed in Appendix K.

The flexibility frequency polygons shown in Figures 3 (problems) and 5 (solutions) reveal a marked distinction in scores between the person in the HRG and the other two groups. The MRG and LRG groups identified similar numbers of problems and solutions, with the MRG showing a minimal numerical advantage. This distinction supports the grouping of the students according to the adapted pre-questionnaire (LaBoskey, 1994).

The bar graphs show the same data but highlights the comparison between the before and after measures. The HRG showed a numerical increase for identification of problems after participation in case discussions for reflections on the first and third episodes. There was no gain in the second episode. The MRG showed a decrease for identification of problems in first episode, but marked increases in episodes two and three. The LRG

improved their problem identification scores after case discussions in all three episodes (see Figure 4).

A similar pattern was found for the preservice teachers' generation of solutions. The HRG again showed an increase for two out of three episodes and no gain in one episode. However, no gain was shown in the first episode as compared to no gain shown in the second episode for problem identification. The MRG again showed an increase in two out of three episodes and a decrease in one episode. Again, the episode showing a decrease (episode 2) was not consistent with the problem identification data. The LRG again showed improvement after case discussions in all three reflection episodes (see Figure 6).

Figure 3

Flexibility: Average Number of Identified Problems

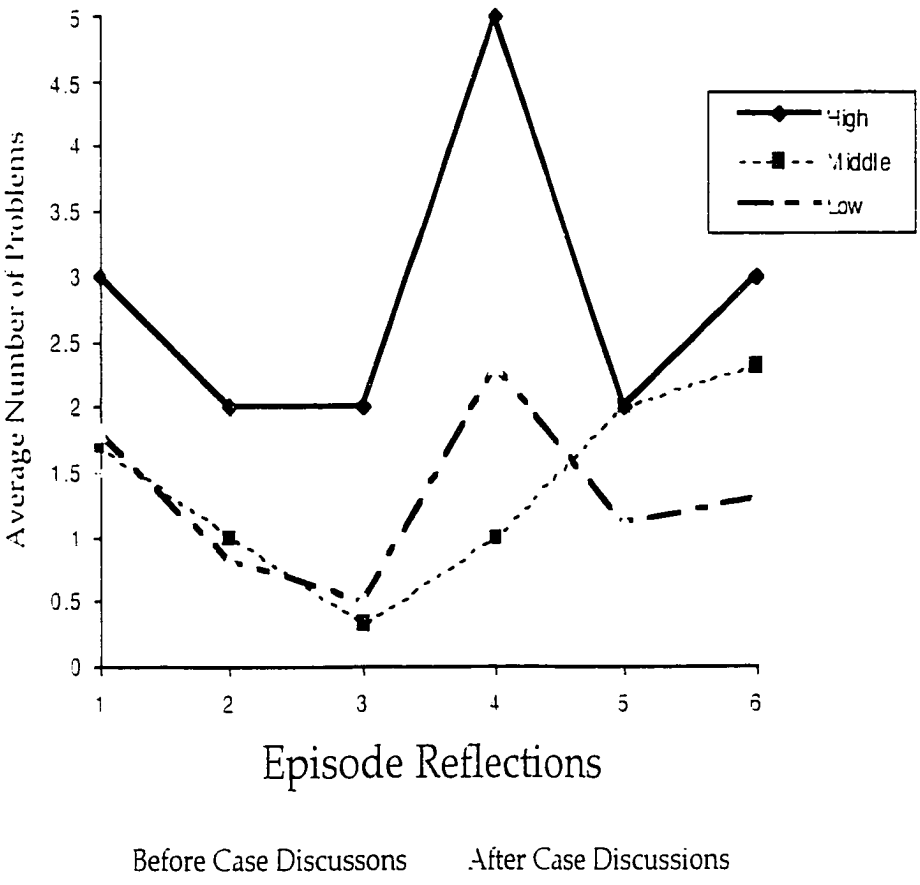


Figure 4

Flexibility: Average Number of Identified Problems Before and After Case Discussions: By Group (HRG, MRG, LRG)

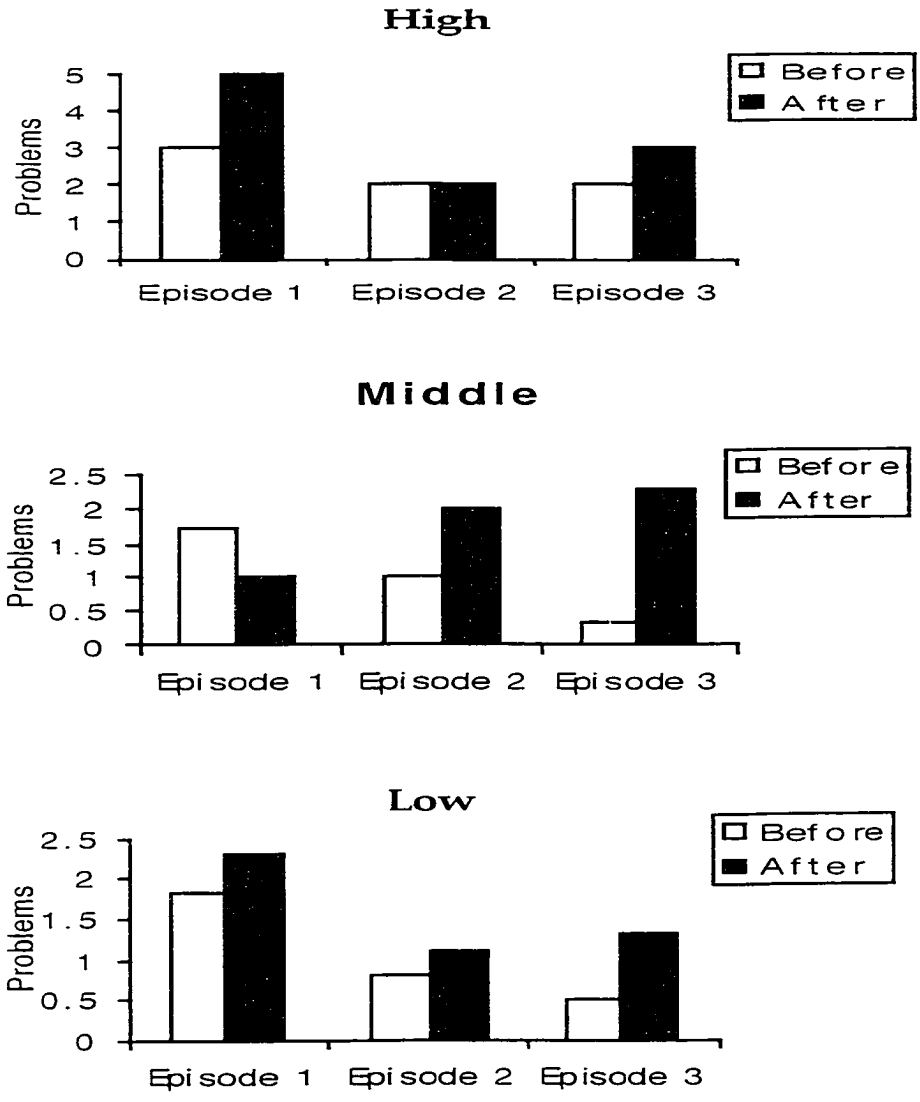


Figure 5

Flexibility: Average Number of Identified Solutions

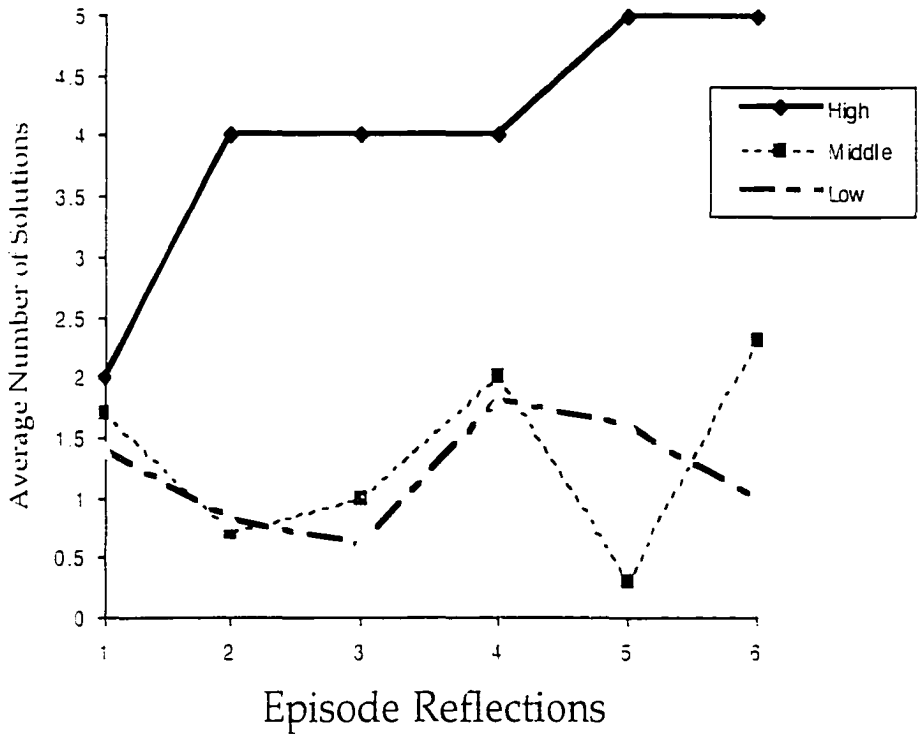
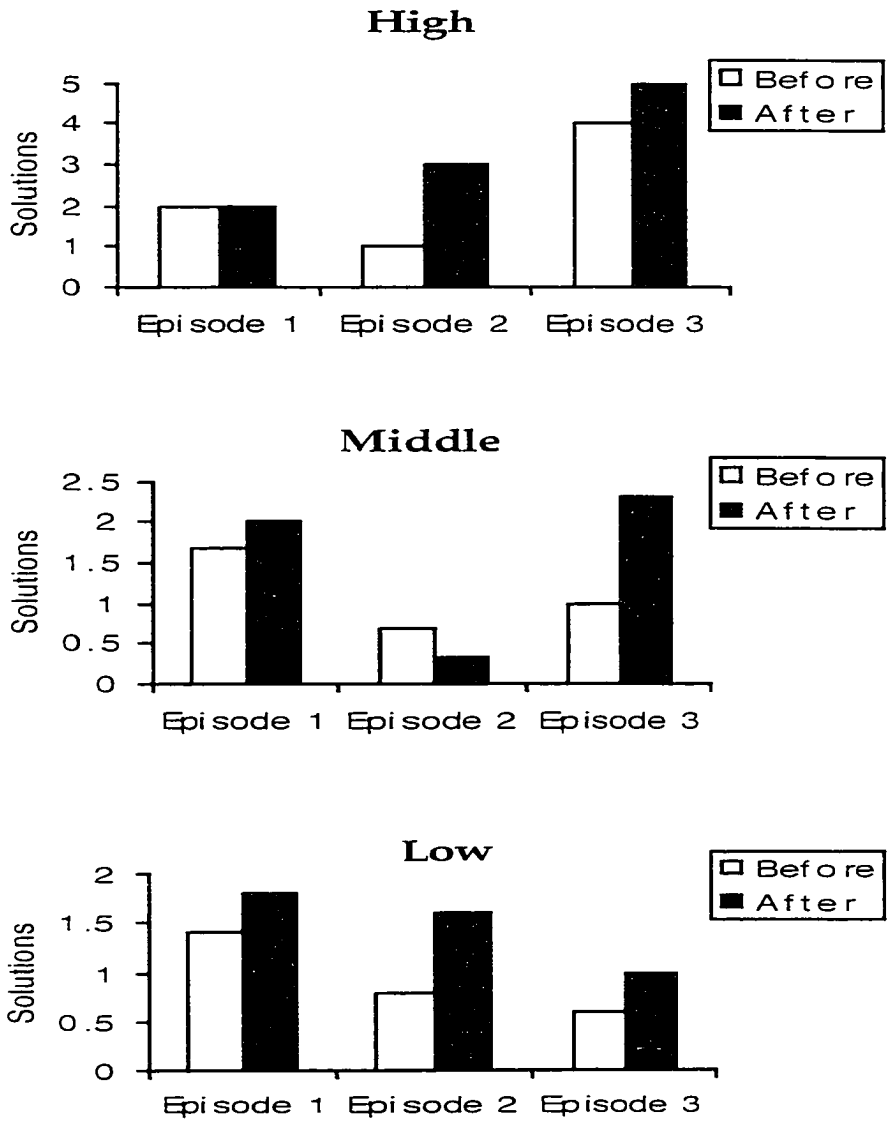


Figure 5

Flexibility: Average Number of Identified Solutions: Before and After Case Discussions: By Group (HRG, MRG, LRG)



Preservice Teachers' Connectedness

Connectedness was defined as the ability to cite concepts (facts or theories) or personal experiences in episode reflections. Concepts and personal experiences were scored separately according the procedures outlined in Chapter III. Actual numbers are in Appendix K. Numerical results for concepts are graphed in the same fashion as problems and solutions. Graphs are not provided for personal experiences because so few were actually found in the reflection episodes.

The frequency polygon (Figure 7) shows little distinction between the three groups regarding the number of concepts cited in the reflection papers. However, there was a slight total advantage for the HRG over the MRG and LRG, which is similar to the flexibility results. Specific before and after reflection episodes compared in Figure 8 reveal a trend of higher scores after the case discussions. The HRG scored higher on all three episodes after the case discussions. The MRG also showed improvement on two of the three episode reflections, with the third showing no gain. Finally, the LRG again showed improvement in all three episode reflections that followed the case discussions.

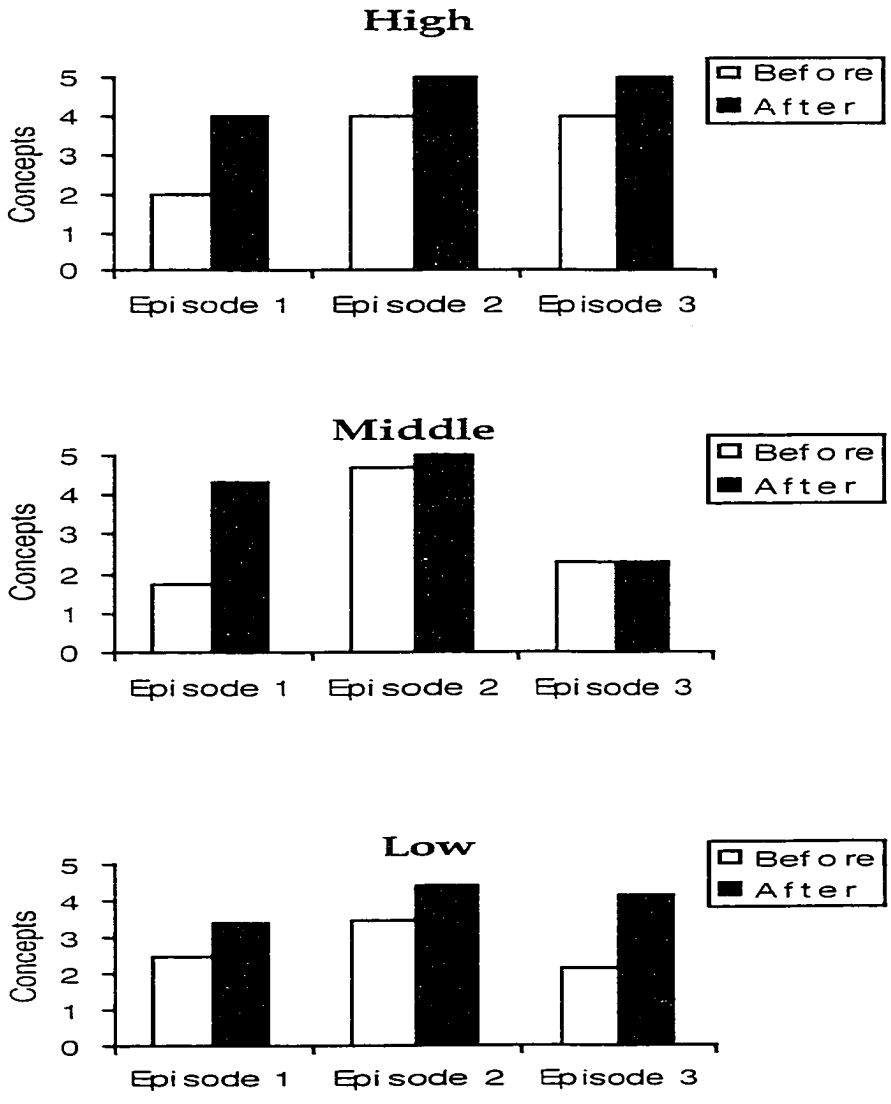
Personal experiences were rarely cited by the preservice teachers during the episode reflections. Out of a total of 72 reflection papers, only 24 personal experiences were cited. None were cited by the HRG. The 3 students in the MRG cited 14 personal experiences, and the 8 students in the LRG cited only a total of 10 personal experiences.

Figure 7

Connectedness: Average Number of Identified Concepts

Figure 8

Connectedness: Average Number of Identified Concepts: Before and After Case Discussions: By Group (HRG, MRG, LRG)



Preservice Teachers' Changes in Reflective Ability Connected to Case Discussions

Metacognitive interviews were conducted at the end of the semester and qualitatively analyzed to explore connections between preservice teachers' changes in reflection skill and the case discussions. The interviews were used for three main purposes: (a) to determine whether the preservice teachers would attribute discrepancies in before and after lesson episode reflections to participation in the case discussions; (b) to identify students' perceptions of how the cases affected them; and (c) to examine the content of discrepancies between the before and after lesson episode reflections.

Preservice teachers' perceptions about the connection between the case discussions and their reflections. At the beginning of each interview, students were asked to review their six lesson episode reflections. They were then asked to list and comment on the similarities and differences between their before and after reflections. This was done so that the students could talk about what they learned. To find out whether students would make connections to the case discussions, the students were asked why they thought the changes occurred. This question was asked carefully, with no mention of the case discussions, so as not to lead the students. Only one of the preservice teachers directly attributed changes to what he learned during the case discussions.

> I see how I included more stuff about skill that I may have gotten from "The Note" because he stressed skill and she was a throw out the ball type teacher and just got everybody out and had fun. And from "Where have you gone, Joe DiMaggio?" with the competition and stuff, I noticed that you didn't watch the defense as closely or the kids could have been getting more upset with each other. And that could

> have caused a problem with the competition. Especially in the way teams were chosen and the losers were treated. We have the one game where the losers were made to pick up the base and were made to feel kind of dejected. I notice that more because of what happened to the little boy in that story [Case 1]. Different parts of each one made me look at different things. (Paul, LRG)

Other students spoke generally about the changes in the before and after reflections, but did not refer directly to the case discussions.

> For the first ones [before], the main difference I see is clarity, and how descriptive I was. In the first one I was not very descriptive. In the second ones [after] I was very distinct and precise about what I said, some of it was the same and some of it was not. Maybe in the second one I included more solutions and theories... ...I had general stuff the first time and I expanded on it the second time. (Carl, MRG)

> I think the first time I just stated something, the second time I thought about it more. (Beth, MRG)

> Having watched it again the importance of it sunk in more, expounding on things that you did fundamental-wise. (Joe, LRG

Preservice teachers' perceptions of how they were affected by the case discussions. Although few connections between reflection discrepancies and the case discussions were made, the students still reported that the cases were very useful. After giving the students a chance to make connections on their own, they were asked to comment about their perceptions regarding the usefulness of the cases in the context of the elementary educational games course. Most responses were positive. Only one student mentioned that she could not get much out of the third case because she had little desire to teach physical education in elementary school. All students reported that they found at least some of the cases interesting, thought provoking, and relevant.

They reported that the case discussions helped them to think about elementary physical education. This supports the numerical data which shows a general improvement in reflective ability following the case discussions. The following comments are examples of how the students spoke about the case discussions in general.

> I think they were very helpful, and they were things that you are going to have to think about when you teach games. I felt comfortable speaking and everybody had a fair chance. They were all issues that involved every one of us, and I am sure that most everyone has an opinion. (Paul, LRG)
>
> They were all interesting. So I definitely learned something from them. (Joe, LRG)
>
> They were definitely useful. They really made you think. If you don't think too hard about the issue then it is easy to say it is not big deal. To me it makes me feel how important my job is. (John, MRG)

These statements show that the students considered the case discussions useful and stimulating. Case discussions were videotaped, and each one shows a lively interaction between the students and the facilitator. The opportunity to voice opinions, think aloud, and hear the insights of others was appreciated by the students.

> I think all three of them made me think. In all three I felt like I could say whatever I wanted to. (Lisa, LRG)
>
> It helped me to state my side of things, and it made me think why I disagreed with the others. And I thought about what I would rather do. (Dave, HRG)
>
> Well, they brought out good discussions and peoples' opinions. They were useful for finding out what other people think about stuff. (Carl, MRG)

> Personally, I really liked that. I think it was just a chance to get everyone involved and you got to hear different sides. (Nate, LRG)

The students also commented on the relevance of the three cases. They were told that the cases were fictional, but based on real-world events. It was evident the students were beginning to think about themselves as future teachers. The students often spoke from the perspective of a teacher during the case discussions. This came out when they talked about the cases in the interviews.

> You think about the kind of situations that can lead to other situations and what you might run into as a teacher. The issues were useful to think about. (John, MRG)

> I was thinking about what I would do in that situation. So when I was told that I was doing something wrong I could say that I don't think I am because of these reasons. And if I am doing it wrong, here are the things I can improve on, I can just incorporate it into my philosophies. (Dave, HRG)

> It made you think about what could happen out there. I have plenty of situations where things like that have happened, I think these things could happen. (Nate, LRG)

The story in each case was unique. When giving perceptions about the value of the case discussions, the students often spoke about how each individual case affected them. The first case, "Where Have You Gone, Joe DiMaggio?" focused on the issue of competition and its positive and negative effects on children's behavior. The role of the teacher was questioned regarding the use of competitive play in elementary physical education and how it should be handled. The discussion of this case was quite animated.

The following quotes illustrate how the case discussion influenced this student.

> I really enjoyed doing them. I wish we had longer time to discuss them. Especially "Joe," I don't think the issue was resolved at all. And that is something that I think is important to us as future teachers. I got frustrated with some peoples' attitudes because I can really see people teaching what I feel is wrong to kids. That made me upset. (Dave, HRG)

> In "Joe" the real conflict was definitely that teachers can't control the competition in the classroom, and I was under the impression that you can. (Dave, HRG)

Case two, "The Outlook Wasn't Brilliant," described a difficult situation for a student teacher in which he was being watched by his superiors and given advice from people with differing philosophies. Interestingly, nine of the preservice teachers in the class reported that this was a legitimate fear for them. The case about possible perils in student teaching and their upcoming student teaching experience left several students with a feeling of anxiety. Being able to relate to the main character in this story was a common theme.

> I would have to say that I related a lot to the student teacher. I student teach in the Spring of 97, and that is my biggest worry...to please everyone. (Nate, LRG)

> In the "Outlook" I felt kind of like Casey [student teacher] because I can see myself in a similar situation. I feel like it would be good for me to have a strong philosophy so at least I could defend what I was doing. (Dave, HRG)

> Coming from a small town like he did I am sure that he felt like he was under pressure. I have done some volunteer work at an elementary school where I knew the principal really, really well, and the teacher really, really well, and you feel like you are under a microscope for every move. (Lisa, LRG)

The last case, "The Note," described a perplexed first year teacher who could not get the students to respond to his style of teaching. The teacher tried to implement a skill learning approach in an elementary school where the previous teacher used a large group game format that focused on having fun. The new teacher was often compared unfavorably to the previous teacher by the children. He was struggling with his own philosophy for teaching elementary physical education. The following statement summarizes how this student's beliefs about teaching changed as a result of the case discussion.

> I think the only thing that kind of changed was that I always believed in large group games but now I am more toward the small, skill games. That is probably from "The Note." I used to think that large group games with kids would create space and create strategies and playing more when kids have more space to run, because I feel that kids need that. Now I feel with small group games that skill-wise they will get better. Because in small games, with a smaller amount of people, you are going to learn more. I used to not think that. (Beth, LRG)

The ability of students to discuss how each case and the case discussions in general influenced their thinking shows at least a perceived cognitive growth on their part. Recall that the students were challenged during the case discussions to identify problems and solutions, drawing on concepts and personal experiences that were relevant. All of the students expressed that the case discussions were valuable to them in some way. Improved

numerical scores on post-reflections and the students' comments about their own thinking makes an argument for continued use of case discussions.

Information in post-reflections consistent with course content. During their interviews the preservice teachers listed and discussed the differences between their pre-and-post reflections on the lesson episodes. Most (52%) of the content of these differences was consistent with the course content (31% of the differences contained information found in the case discussions, 17% of differences contained other material). The post-reflections of 11 of 12 preservice teachers contained information that could be found in the course text. In other words, after the case discussions the students were better able to use the course content to reflect on the lesson episodes. For example, the post-reflections, as the following quotes illustrate, contained information about game modification, safety, skill teaching, and game strategy.

> After watching the tape I wrote that we were shown how to modify the game to have more or less players on a side. There was a lack of movement between the people because we were in such a small space and there were three on our team. And we really didn't have to move but maybe one or two steps to each side and you would end up bumping into somebody. (Steve, LRG)

> The rules for safety, while I was aware that you put them in the first time, I wasn't aware of the importance and the big picture in teaching. So something that I picked up on watching the video was rules for safety that you put in such as not throwing above the waist and things like that. (Joe, LRG)

> I also said the second time that you tried to teach too many skills, all three of them in one period of time, you should have taught one skill maybe two at most in a short time. (Dave, HRG)

> The second time I saw each lesson I feel was more in-depth and more aware of strategies that could be used, and the game about lacrosse when I saw the tape I noticed that we didn't go over offensive or

> defensive strategies, and it was hard for the students to improve. (Nate, LRG)

These concepts were all part of the course that the students knew about prior to the case discussions, but were not used as prevalently in the reflections prior to the case discussions. The fact that students reflected about course content on the post-reflections is significant because they were also asked to draw on course material during the case discussions. The reported content of the differences in pre-and-post reflections supports the theory that cases can be used to get students to wrestle with course content. It was hoped that the cases would help the students begin to develop an in-depth understanding of subject-matter. The ability to use course content to reflect on the lesson episodes is an encouraging sign about the pedagogical power of cases.

Information in post-reflections consistent with topics raised in case discussions. When discussing discrepancies between pre-and-post reflections, 8 of 12 preservice teachers cited information consistent with topics raised in the case discussions, revealing further evidence that the students were influenced by the case discussions. The case discussions were designed to raise issues relevant to elementary educational games teaching, but these issues were not purposely reinforced in other parts of the course. The students' use of this information as a tool for reflecting on the post lesson episodes gives further evidence that the cases were influential.

Issues surrounding the use of competition in games teaching, for example, were highlighted by several students in the post-reflections. This topic consumed a large part of the first case discussion. These statements refer to concerns about organization for competition.

> In the second one when I watched I thought about something I didn't think about the first time which was picking teams and whether the teacher should pick the teams or whether it is up to the students, and the differences between the two. (Joe, LRG)

> After watching the video I noticed about when we picked up the teams, the size advantage and everything. We picked teams and one team had all of the taller people. (John, MRG)

As the game ensued, this student had an interesting insight about the inclinations of the participants.

> I also noticed the differences between the cooperative and the competitive atmosphere, and we originally practiced using a combination. I thought to myself if you mix the two the competitive side will more often dominate the cooperative side. (Joe, LRG)

Competition involves winning and losing, and some students picked up on how the teacher handled this end product of competition.

> The second time I noticed how you called them losers and made them pick up the bases, and in my second reflection I mentioned how that could affect kids. (Steve, LRG)

> You identified winners and losers and made the losers pick up the equipment, which made it feel like the object was to win. And it made the losers feel like they were not as good as the winners because they had to do something as punishment. I didn't notice that the first time. (Dave, HRG)

The second and third case discussions included lengthy discussions about the development of a philosophy for teaching elementary physical education and how the purpose of a teacher's lesson gives clues about that person's philosophy. Evidence from the interviews suggests that some

students were picking up on the underlying purposes of the teacher during the lesson episodes.

> After watching the video I noticed that the teacher complemented the student for performing the skill correctly even if we didn't score. So the skill was the emphasis. Compared to the first game of kickball where the emphasis was just on scoring runs. (John, MRG)
>
> The purpose of the kickball game was to score runs. I didn't notice that the first time. I guess the second time I could see there was not an emphasis on skills or anything, it was just to score. (John, MRG)
>
> I think your interest in whether or not we were having fun, sure we were learning as evident by all that we picked up. When you think you are having fun you don't realize you are learning, so I subtly think you were making sure we were learning. (Joe, LRG)

The use of case information in their reflections shows that the students did enhance their understanding of educational games content by discussing the cases, and they were able to use that information when reflecting on the lesson episodes. The case discussions contained relevant information that helped the preservice teachers reflect on three different lesson episodes. This transfer of information from the case discussions to written reflections shows that the case discussions enhanced the students' reflective ability.

Chapter Summary

Numerical scores of the written reflections on lesson episodes improved after the case discussions for students in all three reflection groups (HRG, MRG, LRG). Both the number of identified problems and solutions (flexibility) on the same lesson episodes increased following the case discussions. The LRG showed the most improvement with increased scores on all three lesson episodes. The students also showed a numerical increase

in the number of concepts cited in the written reflections following the case discussions. The HRG and LRG improved in all three lesson episodes. Personal experiences were rarely cited by the preservice teachers. Interview data supported the increase in the numerical data and provided connections between the written reflections and the case discussions. Interviews were used to allow the preservice teachers to assess their own cognitive growth and give their perceptions about the value of the cases. Interview transcriptions were analyzed to determine links between changes in the students' reflective ability and the case discussions. Although little direct evidence of students attributing cognitive growth to case discussions was found, further analysis of the student interviews revealed three important connections between the case discussions and the students' reflective ability. First, the students reported that the case discussions did influence their thought processes. The students reported that the cases were interesting, relevant, and made them think. Second, the reported discrepancies between pre-and-post reflections centered primarily (52%) on content taught during the course. This is significant because the students were constantly encouraged to draw on course material when discussing the cases. Finally, some (31%) reported discrepancies were consistent with topics raised during the case discussions. This shows that the case discussions were on the minds of the preservice teachers as they reflected on the post-lesson episodes.

CHAPTER V

RESULTS ON REFLECTION WILL

Introduction

Reflection was defined in terms of both skill and will. Changes in reflection skill discovered in this study were documented in the previous chapter. Unfortunately, the ability to reflect about teaching (identifying problems and solutions while drawing on concepts and personal experiences) does not give a person the desire or willingness to be reflective. Viewing teaching as a career worthy of constant analysis and revision can often lead to problems that many teachers do not have the desire or energy to confront, yet this attitude is necessary if a teacher is going to adapt to the changing needs of children in schools. In the short term, it may be easier to believe that a thorough understanding of content, context, and children can be obtained in four or five years of undergraduate work; all that remains is to learn the practicalities of school teaching. Unfortunately, some physical educators have subscribed to this assumption which has left them with a shallow understanding of physical education content, and an unwillingness to assess the value or effectiveness of their programs. It may be that teacher educators are responsible for perpetuating this attitude. It is the duty of all teacher educators to try to foster within their students a desire for continued learning

and a willingness to question their own assumptions regarding physical education teaching.

The discussion format used in case investigations has been theorized as a means of influencing the way that teachers view their profession. During the case discussions, students were encouraged to have open minds, listen carefully to others, keep conclusions tentative, and try to talk through issues that they did not understand. The will of reflection used for this study includes recognizing the need for keeping conclusions tentative for learning (viewing teaching as problematic) and being willing to confront one's personal beliefs about teaching (perceived meaningfulness). These attitudes overlap, and intuitively seem like they would take a long time to develop. Any change toward a more reflective attitude found over one semester is an encouraging sign.

This chapter includes questionnaire and interview data concerning preservice teachers' reflection will. It begins with a comparison of preservice teachers' pre-and-post results of the reflection orientation questionnaire. Next, a case of four students identified as oriented toward reflection at the end of the course is described. Finally, the reflectively oriented students are contrasted with four students identified as non-reflectively oriented. Evidence of connections between the case discussions and the students' reflective attitudes are reported.

Assessing Preservice Teachers' Reflection Orientations

The "reflective" attitudes of preservice teachers were assessed in two ways. First, pre-and-post questionnaires were administered at the beginning and end of the semester. These questionnaires were adapted from LaBoskey (1994), and as stated earlier were designed to measure students' orientations toward reflection. In addition, interviews were conducted at the end of the semester to provide a clearer picture of students' perceptions of their own growth. These data were used to describe the influence of the case discussions on students' reflective orientations.

A reflective orientation means the preservice teacher views physical education teaching as problematic. This orientation denotes an attitude of keeping conclusions tentative for life-long learning, always looking to update and revise teaching beliefs and practices based on a blending of new information with past experiences. To avoid misunderstanding, however, it must be stated that a reflective teacher does not lack principle or necessarily project an image of wavering. Nor do reflective teachers have a disregard for past practices or tradition. Rather, reflective teachers are willing to question tradition and their beliefs about teaching based in new information.

Before identifying the students who were and were not considered oriented toward reflection and studying their attitudes about teaching in depth, it is necessary to view all of the students' scores on the post-

questionnaires. The results of the pre-questionnaire are described in the previous chapter.

The adapted orientation toward reflection questionnaire (LaBoskey, 1994) was completed by the preservice teachers at the beginning and end of the data collection. The dual purpose of the questionnaire was first to classify students into groups according to their orientations toward reflection, and second to see if any changes occurred in their attitudes about teaching by the end of the course. The questionnaire contained six short answer questions and student were given as much time as they needed to complete the questionnaire. The before and after results of each student are listed in Table 3 and graphed in Figure 9.

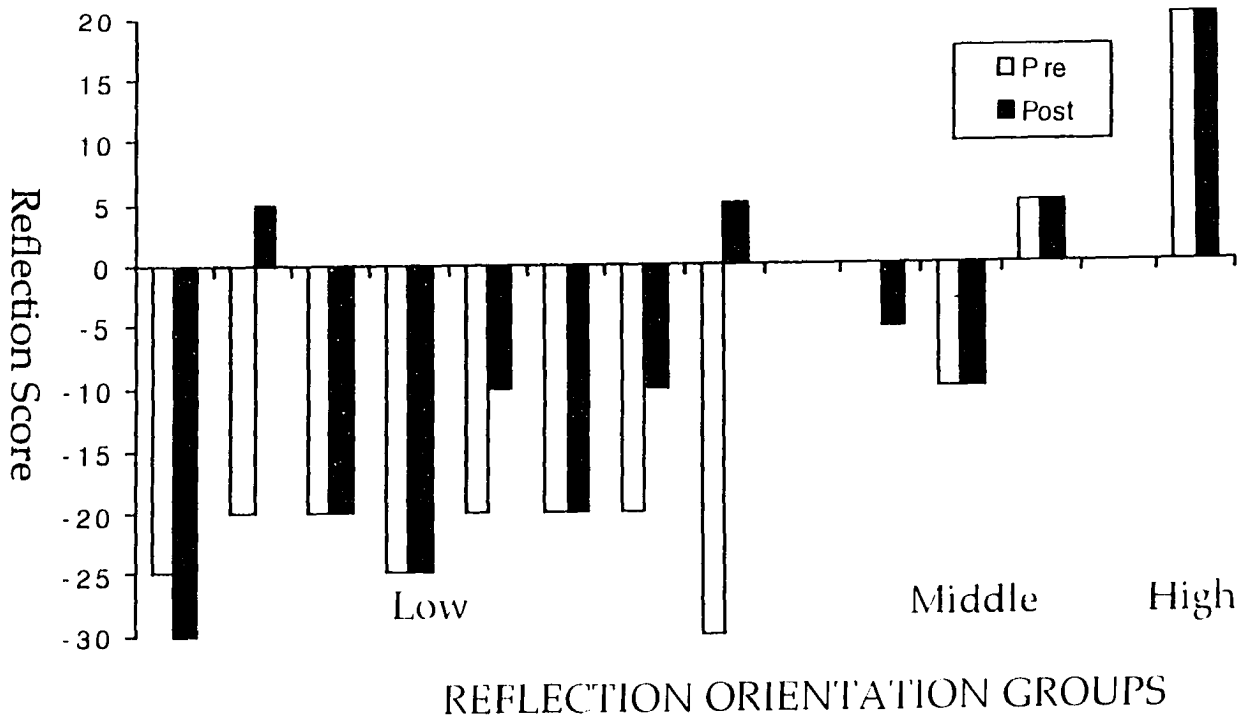
Table 3

Preservice Teachers' Questionnaire Scores: Pre-and-Post

GROUP	NAME	BEFORE	AFTER
Low	Don	-25	-30
Low	Joe	-20	-5
Low	Steve	-20	-20
Low	Lisa	-25	-25
Low	Paul	-20	-10
Low	Nate	-20	-20
Low	Tara	-20	-10
Low	Mark	-30	-5
Middle	Carl	0	-5
Middle	Beth	-10	-10
Middle	John	-5	-5
High	Dave	-20	-20

Figure 9

Reflection Orientation Questionnaires: Pre and Post



Many of the responses on the post-questionnaires were almost identical to the responses on the pre-questionnaires. A change in numerical score for each item was given only if there was a clear distinction between the pre-and-post responses. Five students had identical scores on both questionnaires. Five other students showed a minimal (5 or 10 points) change in scores; 3 of these had lower scores by 5 points and 2 improved their scores by 10 points. In these cases, only one or two responses differed on the questionnaires. However, two students, both classified in the LRG, showed a marked increase in scores from the pre-questionnaire to the post-questionnaire. Joe improved his score from -20 to -5. Mark improved his score from -30 to -5. These two positive post-questionnaire scores with the -5 and -20 scored by John in the MRG and Dave in the HRG were the only post-questionnaires in positive figures. The two students who made the marked increase in scores would still not be classified in the HRG, but there was a considerable increase.

Case Grouping of Preservice Teachers by Reflective Orientation

Based on the questionnaire and interview data, four students were chosen as representative of the beginning of a reflective orientation; the students are Joe, Mark, John, and Dave. Similarities exist between these students' data, but there are also significant differences. These were the only four preservice teachers to score in positive numbers on the questionnaire at the end of the study. Two of the students, Joe and Mark, were the ones who

appear to have achieved the most growth toward a reflective orientation after the case discussions. Joe's score went from -20 to -5, and Mark went from -30 to +5. John also scored a +5 on his post-questionnaire but did not show a change from the beginning of the semester where he had a similar score. John was added to the group because the interview data reveals that he does have some orientation toward reflection and he attributes some of his growth to the case discussions. Finally, the last member of the group is Dave, who scored highest on both the pre-and-post questionnaires.

All four of those chosen to be placed in the orientation toward reflection category were males; their average age was 25.5. Joe is classified as an A-Licensure student which means he already has a bachelors degree and is returning for his teaching certificate. Mark, John, and Dave were juniors when they took the educational games course. The average G.P.A. for this group was 3.2. All individual information is listed in the Table 2 in the previous chapter.

Four other preservice teachers who did not show growth either through the questionnaire or the interview have been selected as a contrast. Three males and one female were chosen based on their pre-and-post questionnaire scores and their interview transcripts; they were Don, Steve, Tara, and Carl. Don, Steve, and Tara were originally classified in the LRG and their post scores showed no improvement with the exception of Tara who improved her score by 10 points. Carl was originally classified in the MRG

and his post-questionnaire score dropped by five points. The average age of these students was 23.5 and the average G.P.A. was 2.8. At the time of the educational games course, Don and Steve were sophomores, Tara and Carl were juniors. All individual information is listed in Table 2 in the previous chapter. The four other members of the study excluded from the cases were not able to be placed in either category based on their post-interviews and the questionnaires.

Reflectively Oriented Preservice Teachers

Each of the four members in this group showed cognitive growth prompted by the case discussions. This growth refers to the attitude of reflection as opposed to the growth in reflective skill by all three groups (HRG, MRG, LRG) documented in the previous chapter.

Learning from others during the case discussions. These four reflectively oriented preservice teachers showed a commitment to continued learning about the career of teaching physical education and a willingness to consider new information against their existing beliefs. One important distinction between these four and the other group was how these students compared their own perceptions with those of their peers during the case discussions. Mark was one of the students whose post-questionnaire scores changed dramatically from his pre-questionnaire scores. In the interview he stated that the cases were useful for him and talked about his thought process during the case discussions.

> They [case discussions] let you know how other people think, like between Dave and Lisa, the way Dave felt I never would have known. You don't just learn through your teachers or through yourself, I think a good person is a person who learns from others. During "Joe DiMaggio," listening to Dave I was thinking that he was a very aggressive player, but then he didn't agree with the teacher being an aggressive teacher. How could you be an aggressive player without... Well, I'll just say that if someone taunts me I play harder. Of course, everybody is not going to be like me, everyone is not the same. (Mark)

At one point in this statement Mark mentions that Dave's comments regarding competition don't seem to parallel his behavior when he plays. Mark was trying to figure out how Dave could say one thing and do another. Ultimately, his own experience played a pivotal role in his thought process when he stated his reaction to being taunted. He was saying that unlike Dave, his behavior and his opinion about the case were consistent; yet at the end he was able to acknowledge that everyone is different.

In this instance, the case discussion clearly prompted Mark to consider his own beliefs and clarify his own views on the subject. Early in his statement Mark emphasized the importance of learning from teachers, on his own, and from the insights of others. He was trying to use all three in this statement by taking information from the case itself (teacher), the comments of a peer (Dave), and his own experience to formulate his opinion.

At another time in the interview Mark revealed how he was making up his mind about his career plans. He began the class thinking that he only wanted to work with secondary students. A good experience with some elementary students had him thinking that all elementary students always love physical education.

> On "The Outlook Wasn't Brilliant" after reading that it was kind of scary. It made me feel like when I am out there student teaching that anything can happen to anybody. You have people like [a professor] saying how great it is going to be. But you never look at the gloomy side. And "The Note," you will not always be that teacher that everybody wants to go to class with. (Mark)

Two case discussions allowed him to consider the complexity of good elementary physical education teaching. His earlier assumption about elementary students was questioned based on the case discussion.

Being aware of the statements of others during the case discussions and using them to help formulate his opinions was also evident from Joe's interview. Joe was the other student who made a marked leap between pre-and-post questionnaires. In this instance, Joe is talking about his peers reaction to a specific case. He is somewhat upset by the commitment of his peers and he talks about how the case discussion helped him.

> It is funny how nobody else even picked up on the fact that they [case characters] all had their own personal agenda, and it is something that I have always been well aware of... ...that really bothers me. They [peers in class] talk about how effective teachers are and if teachers really care. I would be one of those people who was on top of things as far as that is concerned. I realized that different people have different agendas and perhaps this [case] helped me realize it. (Joe)

For Joe the case allowed him to measure himself against his peers, and he attributed a new realization to the case discussion. He continued that theme as he spoke generally about the case discussions.

> I'll tell you, a lot of the things that we covered in these [case discussions] has to do with stuff that I know. And a lot has to do with preconceived philosophies on teaching and dealing with children. But having gone over it and discuss things different things were brought to

> light that weren't previously paid attention to and it reinforced my belief on certain issues and even probably gave me a couple of new beliefs on certain things. (Joe)

Weighing alternatives against existing beliefs: Conclusions as tentative. A willingness to change their thinking based on new information that may have contradicted with what they felt previously was a common theme among the four in this group. When talking about a case that contrasted an error-correction view with a developmental view of skill learning, Dave stated:

> I never realized the developmental end. I always thought that you should show a kid the right way to do it whether he was six or 18 years old. I never realized that kids were not able to developmentally do a certain skill. (Dave)

Recall that Dave was the student who had the highest score on the pre-and-post questionnaires. He was the only student to pick up on this subtle point.

The first case got a lot of students to think about competition and their own view of its place in elementary physical education. All of the preservice teachers in this study had been athletes or coaches themselves prior to the class. Competition had already played an important role in their lives. To consider the implications of competition for all children is important for prospective physical education teachers. As you will see later, not all students were willing to think about it. In this instance, John talks about his view of competition and how it was influenced by the case discussion.

> I believe in competition somewhat, but this definitely made me realize that by just emphasizing competition all the time that carries over on

> kids. It continues outside of class the competition and when you didn't do well. (John)

Making a similar point Dave talked about his commitment to teaching and how the case impacted his understanding of competition. The discussion was a time for him to consider a balance between cooperation and competition, and how he could fit both into his teaching.

> I think the teacher has a responsibility for what happens outside of school, and you have an impact. What you teach goes home and doesn't stop at the gym door. And if you teach cooperation, that can stay with kids also. Other factors affected it to, but I think now she [case character] had a responsibility to teach the kids and enjoy the game. (Dave)

Finally, a hallmark of reflective thinking includes the ability to consider conclusions as tenuous, always be open to new learning, search for new answers, and evaluate personal assumptions that drive actions. This attitude was exemplified by John as he spoke about a case and what he would do in a similar situation. John also pointed out that it is not easy to be reflective, it often involves tough decisions and self-examination, but according to John it is necessary to good teaching.

> I think you just have to take a closer look at what is happening. What you are doing in class, of course some of the stuff is going to carry on outside of class so you have to take a closer look at it. I think it is the easy way to say that the teacher doesn't have anything to do with it. (John)

Keeping conclusions tentative, not making blanket statements, and always being open to revision was summed up by Dave in a statement about

his personal teaching philosophy. Remember that Dave was the student who had the highest score on both the pre-and-post questionnaires.

> I think I know in what direction my philosophy is heading, I know that it is still forming. I know things right now that I don't want to do, but I don't know everything that I want to do. (Dave)

Summary. These previous quotes are examples of these students' attitudes about teaching. Each of these four preservice teachers showed signs of a reflective orientation to teaching, and they attributed some of their own cognitive growth to the case discussions. An orientation toward continued learning and a willingness to confront their own personal assumptions about teaching set these four students apart from those labeled as non-reflectively oriented preservice teachers.

Non-Reflectively Orientated Preservice Teachers

The non-reflection orientations of four other students in the study were compared with the four who were considered oriented toward reflection. A commitment to continued learning and willingness to weigh new information against existing beliefs was not evident in the post-questionnaire scores or the interviews. Apparently, the case discussion did not influence, or negatively impacted, these students' orientations toward reflection even though their reflective skill documented in the previous chapter did improve.

Learning from others during the case discussions. The students in this group did not express a desire or need to learn from the opinions or advice of others during the case discussion. It was not that they used others' opinions as a way of clarifying their own stance; it was more of a blatant disregard for

the need for any further learning that set them apart from the other students. Their backgrounds had given them experiences in gymnasia, and they projected an image of confidence regarding their future roles as physical educators. It would be inaccurate to say that the reflectively oriented students were not confident, they just knew that they needed continued learning. The non-reflectively oriented students did not express much interest in continued learning and did not give much credence to the opinions they heard during the case discussions. For example, after stating that he thought the cases themselves were useful, but that he didn't learn much from the discussions, Carl dismissed the value of opinions he heard during the case discussion.

> Some of them had their individual opinions, but they may not have had good reasons for what they said or it didn't make sense. I can't give you a good example. I would say most of them had no background. (Carl)

Similarly, while speaking more generally about listening to the advice of professors or peers, some students expressed a desire to please the person they were talking to for the moment, and then disregard their advice. This tendency seemed like a common practice to these preservice teachers. The following quote illustrates this point. It concerns a conversation about a case in which a student teacher must take advice from three different superiors. Steve remarked that if he were a teacher instead of a student teacher, it would not matter what a professor or anybody else said about teaching.

> After I was the first year teacher and not the student it really wouldn't matter what the professor said. What I think is right is not the same as what everybody else thinks is right. (Steve)

Steve goes on to explain a strategy for pleasing different people for different reasons. Each of the reasons has to do with either graduating, getting a job, or keeping everybody happy. At no time does it occur to him that the advice may help him as a teacher to become more effective with the children. When asked what he would do if a professor said something in class that contradicted what he currently believed about teaching, Steve responded, "I guess I would have to bite my tongue in class, but I wouldn't change."

Tara also did not believe that she could gain much from listening to the opinions and insights of others in her class. During the case discussions she was quite outspoken about her opinions and stated in the interview that she didn't care if anyone agreed with her.

> I know that I am pretty much a loner on this and nobody agrees with me but that makes no difference. As far as anyone disagreeing with me it actually kind of feeds me a little bit more because it makes me try to get my point across. (Tara)

Tara did have some points to get across. She spoke very definitely about what she thought was right and wrong and what would and wouldn't work in a teaching situation. There seemed to be no hesitation in her understanding of physical education content or her understanding of what children need. This might not appear so unusual coming from a person with a great deal of knowledge and background in the area, but Tara had little experience working with children. That fact did not keep her from expressing these views about, in order, teaching lacrosse, using competition, and developing curriculum.

> It is one of those activities that look really easy to do, but definitely not for little kids. I don't think you should do it until college. High school kids could physically do it, but I am not too far out of high school and I know how mature I was and the all the people that I went to high school with were. And they would take the sticks and beat each other over the head with them. The younger kids would not beat each other but they could not do it skill wise. (Tara on teaching lacrosse skills)

> Across the board I think it is the same anyway. It could be a softball tournament for all intents and purposes. Or a volleyball game or track meet. Any kind of healthy competition is good for little kids. It teaches them that winning is not necessarily the most important thing but being your best is. Not just sitting there. (Tara on competition)

> You need to get the kids on your side. By giving them activities that aren't too difficult for them but don't undermine their intelligence. Even elementary kids there are some things that they will just sit there and say, of course we can do this, you don't want to insult their intelligence. Make it fun for them. Don't make it silly. Because little boys don't want to play little girls games and little girls don't want to play little boys games, especially little kids. (Tara on curriculum)

Each of these opinions were stated very strongly. There is no evidence that she believes there is a chance that her statements could be at the least inaccurate, at most completely wrong.

Weighing alternatives against existing beliefs: Conclusions as tentative. The willingness to allow opinions to be flexible based on new information or allowing personal conclusions to be tentative was not common among these four preservice teachers. Tara's previous three quotes illustrate strong beliefs about teaching that are grounded in her philosophy of teaching. These beliefs about teaching often seemed steadfast despite what anybody said about them. In fact, it seemed that these students felt is was necessary for them to state

their side and stand firm on it no matter what. Often their opinions were grounded in personal experiences. In this statement, Carl is speaking about the origin of his P.E. teaching philosophy and how the case discussions affected him on this point.

> Physical education for me has always been a time to have fun. That is why I am headed in that direction... ...And any time that a child is having fun they are learning, that is my opinion. And if you start out being skill specific then they are not going to learn the value of using a skill in a game. That is my opinion. As far as the cases go they didn't do anything for this because my opinion was already set before I read this. Before I ever read it my opinion is for the larger group activities. (Carl)

The case discussions did not hold any value concerning the forming of beliefs for these students. When speaking about his philosophy of physical education, Don stated that he believed coaching and teaching were different, but that his philosophy was "pretty much in place right now." Don was a sophomore when he took the course and had yet to begin several content and methods classes and student teaching. However, this fact did not deter him from believing that he understood his personal teaching philosophy and how he would implement that philosophy when he got out.

> As far as philosophies go, I just think that you have to have your own philosophy and deal with it how it is going to come about. And if you are not going to be satisfied at certain school then just walk away. (Don)

Although all of the students professed that they liked the case discussions and found them useful, it was difficult to determine why they felt they were useful. It was clear, however, that they were not used by these

students to consider alternative interpretations or opinions offered by the facilitator or their peers. Perhaps some of the difficulty that these students had in defining the value of the case discussions can be explained by Tara's response to the question, "Did the cases help you prepare for teaching?"

> The professors can't teach you to be ready for it [teaching in schools]. In my opinion it is when it happens that you have to be ready for it. You can know that it is coming but it really doesn't matter. (Tara)

Chapter Summary

The pre-and-post questionnaires and portions of the interviews were used to assess preservice teachers' orientations toward reflection. A reflective attitude was defined in this study as recognizing the need for life-long learning, being able to keep conclusions tentative (viewing teaching as problematic), and being willing to evaluate one's beliefs about teaching based on new information (perceived meaningfulness). At the end of the study, four preservice teachers were identified as oriented toward reflection based on their questionnaires and interviews. Two of the four made marked increases on the post-questionnaires suggesting that the course had something to do with the change. All four attributed some of their cognitive growth to the case discussions which were designed to help students develop both the skill and will of reflection. These four were contrasted with four preservice teachers who did not display reflective orientations on the post-questionnaire or in the interviews. The case discussions did not influence these students' orientations toward reflection.

CHAPTER VI
DISCUSSION

Introduction

This study describes the influence of case discussions on physical education preservice teachers' reflection during an educational games class. Measures of preservice teachers' reflection were obtained prior to and after their participation in three case discussions. Reflection was defined as both a skill and an attitude. The skill of reflection included the ability to identify problems and solutions in elementary lesson episodes (flexibility), and the ability to draw on facts, theories (concepts), or personal experiences that were relevant (connectedness). The attitude of reflection included viewing the teaching profession as problematic, which means that the teacher recognizes the need for life-long learning and understands that because teaching is dynamic, conclusions must be tentative. In addition, reflective teachers demonstrate a willingness to confront and evaluate their personal beliefs about teaching based on new information (perceived meaningfulness).

This chapter includes a discussion of the results of this study based on the influence of case discussions on the preservice teachers' reflection. Following a discussion of the initial grouping of preservice teachers is a discussion of the influence of case discussions on the skill (flexibility, connectedness) and will (viewing teaching as problematic and perceived meaningfulness) of reflection. Study conclusions are listed following a

discussion of the results. Finally, recommendations for future research and future case use in physical education teacher education are offered.

Grouping of Preservice Teachers

Three groups were formed based on reflection orientation scores from the pre-questionnaire. Only one of the preservice teachers scored high enough to be placed in the HRG. Three were placed in the MRG and eight in the LRG. Numerical scores on the lesson reflections show parallel differences between these groups (especially between high and low), lending validity to the instrument for measuring orientations toward reflection. The fact that this grouping is skewed toward the low end was not surprising. LaBoskey (1994) also had a low percentage (14%) of the preservice teachers in her study classified as highly reflective. The bulk of LaBoskey's students, however, could not be classified as either high-reflective or low-reflective; most (8) of the students in this study scored in the low-reflective category.

Teacher reflection as defined in this study includes both a skill and an attitude. It refers to both cognitive knowledge and thought processes (flexibility & connectedness) and to a desire to learn and confront one's own beliefs (viewing teaching as problematic & perceived meaningfulness). An intuitive relationship between reflection and academic achievement exists, although there has been no study designed to determine a correlation between them. Lanier and Little (1986) noted that teacher education admits a high number of low-ability students into the field; that trend may be even greater in physical education (Templin, Woodford, & Mulling, 1982). If a correlation exists between reflective ability and academic achievement, then it would not be uncommon for a large percentage of preservice physical

education teachers to at least begin teacher education at a low-reflective level.

In this study, the one preservice teacher who scored in the HRG also carried a 4.0 G.P.A. The MRG had an average G.P.A. of 3.0, and the average for the LRG was 2.8. This information is worthy of consideration but offers no definitive evidence of a link between orientation toward reflection and academic achievement. One student who scored in the LRG also carried a 4.0 G.P.A. More research is needed in this area.

Bain (1990) suggested the subjective warrants formed by recruits about physical education teaching may contribute to a custodial or traditional view of teaching. Often physical education teachers are also athletes or coaches, and coaches tend to have a traditional or custodial orientation. The explanation of the custodial orientation is similar to what Schon (1983) described as technical rationality. These recruits do not see a need for reflecting on teaching because they primarily want to reproduce their own physical education programs. Perhaps this is why most of the preservice teachers in this study initially scored in the low-reflective group. This does not mean that reflective physical education teachers do not use traditional or conservative methods of teaching, only that they have chosen those methods based on a consideration of the problem and the context.

Age and gender patterns found by others studying reflection were not apparent in this study. Lundeberg & Fawver (1994) found older students and women to be more reflective than traditional students and men, respectively. The only preservice teacher in this study categorized as highly reflective was a 22 year-old male. Two of the three females were in the LRG, and one was in the MRG. Their positions according to the post-questionnaire showed

minimal change. Two students older than 25 were classified in the MRG, and one was classified in the LRG. The older student (male) who began in the LRG was one who made a marked leap on the post-questionnaire. The other who made a marked improvement, however, was a 23 year old male. These inconsistent results do not confirm or conflict with the findings of others because of the low number of participants. The age and gender patterns in this study are interesting, but differences in reflection based on these factors require much more research.

Preservice Teachers' Flexibility: Identifying Problems and Solutions in Lesson Episode Reflections

Numerical increases in the number of problems and solutions identified by the preservice teachers show a growth in reflective ability. All three groups (HRG, MRG, LRG) improved their scores on post-reflections with the LRG showing improvement on all three lesson episode reflections. The results corroborate similar findings in other studies which assessed the influence of cases through pre-and-post measures. Kleinfeld (1988), in a descriptive study, reported improved student reflectivity over time in a program that extensively used cases. Both Kleinfeld (1991) and Stoiber (1991) referred to cognitive growth as problem-solving ability in studies that showed improvement in problem solving through the use of case discussions. Kleinfeld (1992a) also counted the number of problems and solutions identified by preservice teachers and found that the number of identified problems increased after students participated in case discussion. Finally, in a study similar to this one, Lundeberg and Fawver (1994) studied the impact of a course that included case discussions and found that the students increased

their ability to identify problems and solutions after participation in case discussions. Although none of these studies took place in physical education, they all involved preservice teachers and the use of cases for improving the skill of reflection or problem solving. This descriptive study lacks explanatory power but contributes to the growing amount of evidence that case discussions are useful for teacher preparation.

The numerical increases in this study demonstrate the power of case discussions even more because reflection as a concept was not stressed during the course apart from the case discussions. The physical education teacher education department at the university emphasizes reflective teaching, and this emphasis comes primarily through methods courses and student teaching. The elementary educational games course was a one-credit content course. The content of educational games and the pedagogy of games teaching was stressed; students were not given a definition of reflection at any time.

On six occasions, three before the case discussions and three after the case discussions, the students were prompted to write about the lesson episodes. The prompt instructed them to identify problems, solutions, relevant facts, theories, and personal experiences. However, the students did not get their written reflections back or get any feedback on them during the course until they were de-briefed at the end of the data collection. After the case discussions, the prompt for the reflections was the same; students were not instructed to try to identify more of anything. The fact that they did identify more and different problems and solutions suggests that the process emphasized during the case discussions had some impact. The location of the

cases in the middle of the written reflection reduces other explanations for the numerical increases.

One alternative explanation is that the students were seeing the lesson episode for the second time, so they could pick out more problems and solutions. However, it could also be argued that the students would become bored writing about the same lesson and would actually identify fewer problems and solutions because they did not want to repeat what they had previously written. The students' comments about how the cases forced them to think offers some indication that the case discussions were a primary reason for the increased number of identified problems and solutions.

Another alternative explanation is that the students scored better on the post-reflections because they occurred chronologically later in the course. While it is difficult to argue that they did not benefit from increased exposure to course content, an extensive overview of all course content was covered prior to the first lesson episode reflection. In addition, the lesson episodes were not referenced in other parts of the course; the teacher of the lesson episodes emphasized that he was playing a role. In fact, even at the end of the course several students were confused about the presence of the lesson episodes in the class. My purpose for the lesson episode reflections as the teacher/researcher was to gather data and give students a chance to reflect. Given the lack of feedback on the lesson episodes, it could be predicted that the students' performance on the post reflections would stay the same or decrease due to boredom; since case discussions encouraged students to practice identifying problems and proposing solutions, it is not unreasonable

to say the case discussions influenced the students' ability to reflect on the lesson episodes.

Preservice Teachers' Connectedness: Drawing on Facts, Theories (Concepts), or Personal Experiences in Lesson Episode Reflections

The number of concepts used by preservice teachers increased on the lesson episode reflections after the case discussions. These findings were very similar to the flexibility data. Both the HRG and the LRG increased scores after the case discussions on all three lesson episodes, and the MRG increased on two lesson episodes. The differences, pre-and-post, between the HRG, MRG, and LRG were minimal, suggesting that the use of concepts is a distinctly different part of reflection than the identification of problems and solutions which showed a clear distinction between the HRG and LRG.

Drawing on information to solve problems has been investigated by other researchers interested in the use of cases for teacher preparation, and this study contributes to the growing amount of research suggesting that cases can be used to increase conceptual understanding. In a study mentioned in the previous section, Lundeberg and Fawver (1994) also found that participation in case discussions increased the amount of concepts cited by preservice teachers in written reflections.

Harrington (1995) used a pre-and-post format to study the influence of case discussions on preservice teachers who were very early in their teacher preparation, similar to the preservice teachers in this study. She found that after participating in case discussions the preservice teachers got better at making arguments that were more grounded, inclusive, and critical, and were more able to draw from multiple sources. For this study, the depth or

robustness of conceptual understanding in students' reflections was not measured, but the students were able to use more concepts in their reflections after the case discussions. Furthermore, analysis of the discrepancies between the pre-and-post reflections reported by the students reveals that the students were able to use course content and issues raised in the case discussions to reflect on the lesson episodes.

It was beyond the scope of this study to analyze critically the viability of the actual cases for use in an elementary education games course. The students found the cases interesting and expressed a desire to discuss them further. The presence of many of the issues found in the post-reflections, however, suggests the cases were well-constructed for this purpose. Only continued use of these cases can answer the question definitively.

Cognitive Flexibility Theory advanced by Spiro and his colleagues (1988) states that by presenting and discussing content in a particular context (possibly through cases), students learn to selectively use knowledge "to adaptively fit the needs of understanding and decision making in a particular situation" (p. 5). They go on to say that to have as full and as connected amount of information as possible is most desirable. One goal of this course was to increase the content knowledge of the students regarding elementary educational games teaching. This was a goal through both the case discussions and other methods of instruction. Spiro does not suggest that all information should be taught through cases or must be embedded in context; rather he suggests that to remove all complexity from content does not allow for transfer into occupations that include a great deal of variability. The numerical increase in concepts used and the evidence from the interviews

that students were using course content and information from the case discussions seem to support that the students did increase their ability to transfer information, supporting Spiro's theory. Whether they retain this conceptual understanding over a period of time and could use it in actual teaching requires further study.

A possible limitation of this study was that reflective ability was assessed through written reflections, but the case discussions were oral. Students were encouraged to engage in reflective activity during the discussion of the cases, but most of the time they did not contribute complete thoughts to the discussions. The students built on what was said by others and interjected phrases that contributed to the discussion, but it never included a complete personal demonstration of reflective ability. What the students were saying as opposed to what they were thinking during the case discussions could not be assessed. More research is needed concerning the difference between written and oral reflection.

Students were prompted to refer to personal experiences that were important to their decision making in their reflections, yet few personal experiences were cited in the written reflections. Only 24 personal experiences were cited out of a total of 72 reflection papers (HRG=0, MRG=14, LRG=10). This is interesting because the students were also asked to refer to personal experiences when making a point during the case discussions; and they often did. The case discussion transcriptions revealed that well over 24 personal experiences were cited in only three case discussions. Students often talked, for example, about previous experiences as athletes, camp counselors, coaches, or students in a physical education class. In addition, it was clear

from the four students who were classified as non-reflectively oriented, that personal experience played a large part in their decision making and belief formation. For some reason they did not use many personal experiences in their lesson episode reflections.

It is possible that the limited length of the lesson episodes or the 15 minute writing time did not allow the preservice teachers time to consider how personal experiences affected their decisions. Two other explanations, however, seem more likely. First, the case discussions allowed the preservice teachers to reflect orally on the cases in an informal discussion format. Ideas were exchanged, and the students occasionally debated intensely about certain subjects. When confronted about their beliefs, the students often used personal experiences to help make their arguments. Reflections on the lesson episodes were written, not oral, and the students were writing them on their own with no discussion from either their peers or the teacher. It is possible that this change in format prompted the students to draw more on course material when reflecting, since a high amount of concepts were cited in the written reflections.

A second possible explanation is that students don't feel that the personal experiences which direct their beliefs are "academic" enough to put into written reflections. The written reflections were turned in to the course instructor when they were completed. College students are used to being evaluated on work that is turned in, although they were not graded on the written reflections. Socialization research about the effect of teacher education programs in physical education has shown that some students give the teacher what he or she wants in written work, only to abandon that stance

when they become teachers (Graber, 1991). Some evidence of this behavior came out in the interviews, primarily from those who were labeled non-reflectively oriented. They talked about how their philosophies were already in place and how they refused to change their minds. It was made very clear to the students that the content of the lesson reflections would not be graded; it was only required that they participate. Perhaps the absence of personal experiences in the reflections, however, was a result of the students writing what they thought the teacher wanted to read.

Attitude of Reflection: Viewing Teaching as Problematic

The reflection orientation questionnaire administered at the beginning and end of the course was used to assess students' orientation toward reflection. The questionnaire was developed by LaBoskey (1994) and designed to assess students' willingness to allow conclusions to be tentative and their commitment to life-long learning. Only one preservice teacher was labeled oriented toward reflection based on the pre-questionnaire scores. This student scored a −20 on the questionnaire, placing him in the high-reflective group. He achieved the same score at the end of the course. The MRG and LRG included three and eight preservice teachers, respectively. At the end of the course, two students from the LRG improved their scores by 25 or more points, but no notable gain was made by any other student on the post-questionnaire.

Program and time constraints, the lack of extended opportunities for experience, and variable teaching situations make it impossible for teacher education programs to prepare teachers fully for work in schools. Despite the best intentions of teacher educators, to be truly effective as new teachers,

students will need to continue learning both about physical education content and pedagogy throughout their careers. It is wonderful to have students who enter teacher education programs with this orientation; however, evidence from this and other studies about physical education reveals that this is not the case. To develop in students the recognition of a need for continued learning is perhaps the most important goal that we can have as teacher educators. A goal, however, is useless unless it is attainable. Some researchers have begun to consider this question.

In the only other study to use this questionnaire, LaBoskey (1994) labeled highly reflective preservice teachers "alert novices" and non-reflective preservice teachers as "commonsense thinkers." LaBoskey scored case investigations (in-depth individual projects about teaching, not case studies) for reflectivity completed by both alert novices and commonsense thinkers. LaBoskey's study did not use case discussions as a means for altering students' reflection. With the exception of some within group variability, her findings indicated "that initial reflective abilities and orientations tend to remain stable during preservice teacher education" (p. 56). Her case studies about commonsense thinkers found that these students' reflective problems stemmed from either deficient inquiry skills or attitudinal interference, or both. The current study showed similar, but slightly more optimistic results.

The low-reflective group showed the most consistent improvement in reflective skill on the lesson episodes; however, they never reached the level of the HRG on identification of problems and solutions. Their scores were very similar to the HRG on the use of concepts. Overall, all students did

show some improvement in reflective ability; yet similar to LaBoskey's results, very few student attitudes were changed.

Four students were classified as oriented toward reflection based on their questionnaire scores and their interviews. Dave was already oriented toward reflection based on the questionnaire, but he also attributed some of his cognitive growth to the case discussions. Another student, John, did not improve on his post-questionnaire score (+5 before and after), but he was able to attribute some of his growth to the case discussions and show a recognition of the need for continued learning during the post-metacognitive interviews. The two most intriguing students, Joe and Mark, made marked leaps on their post-questionnaire scores and expressed a desire for continued learning in the interviews. This evidence is encouraging. At first glance, only 2 out of 12 students making marked leaps on the post-questionnaire seems discouraging; but compared to the results of LaBoskey and the fact that students' attitudes are grounded in several years of experience (Schempp, 1989, Lortie, 1975), the movement of these two is an encouraging sign for the use of case discussions for physical education teacher preparation.

Attitude of Reflection: Perceived Meaningfulness

Perceived meaningfulness, simply put, means that the students found the case discussions worthwhile for helping them evaluate and develop their own beliefs about teaching. To find something meaningful requires a willingness to examine your own beliefs based on new information. Students enter physical education teacher education with a set of beliefs based on their past experiences (Dewar, 1989; Graber, 1991). Reflective teaching requires that teachers are willing to examine those beliefs and accommodate new

information into existing beliefs. If new information contradicts existing beliefs, then teachers must be willing to change. Through analysis of the interviews four preservice teachers were identified as having this attitude to some degree. This does not mean that others may not have this attitude; it was just not apparent in the interviews. The four students also attributed some of their philosophy development to the case discussions, where they heard different opinions of others and were challenged about their own assumptions.

Barnett and Tyson (1993a) found that case work contributed to changes in teachers' beliefs about teaching. They attributed these changes to the collaborative process of problem solving used in the case discussions. Their study involved teachers, not preservice teachers, as were used in this study. Other researchers have also noticed attitudinal changes about teaching beliefs and learning from others through the use of case discussions. Lundeberg and Fawver (1994) qualitatively analyzed preservice teachers' analyses of cases concluding that their reflective attitudes improved because they became more student-centered and could report their own changes in beliefs. The somewhat modest influence of the case discussions on physical education preservice teachers' reflective attitudes in this study is an encouraging sign, but requires much more study.

Conclusions

The results of this study are an encouraging first step toward investigating the pedagogical power of case use for physical education teacher education. This study occurred within a physical education teacher preparation course and was not experimental. For this reason the results lack

explanatory power, but do provide a useful description concerning the potential of cases and case discussions. Based on the analysis of data collected prior to and after preservice teachers' participation in three case discussions, the following conclusions can be made about the influence of the case discussions on preservice teachers' reflection. Participation in case discussions:

1. improved preservice teachers' reflective ability (improved ability to identify problems and solutions in written reflections; improved ability to cite concepts in written reflections).
2. improved reflective ability for preservice teachers regardless of their initial orientations toward reflection.
3. improved reflective ability most for preservice teachers who were not initially oriented toward refection.
4. improved preservice teachers' understanding of elementary physical education issues found in the cases and their understanding of course content.
5. contributed to the development of a reflective attitude in some of the preservice teachers (a reflective attitude includes a recognition of a need for continued learning, desire to keep conclusions tentative, and a willingness to confront one's own beliefs about teaching based on new information.

Recommendations for Future Research

Research on case use in general education is in its infant stages. Merseth (1996) noted "the myriad of claims for the use of cases and case methods far exceed the volume and quality of research specific to cases and case methods in teacher education" (p. 63). This was the first study about the

use of cases for physical education teacher preparation. Given the theoretical claims and promising results of this study, the possibilities for future research on cases and case methods for physical education teacher education are extensive. To explore all possible directions for research would be inappropriate at this early juncture of case use by physical education teacher educators. However, a few specific recommendations may help teacher educators and scholars explore the possible benefits of case use for teacher preparation.

The lack of available cases makes case use and case research very difficult (Sykes & Bird, 1992). Merseth (1996) recommended that researchers should develop cases and study the pedagogical power of cases at the same time. The development of quality physical education cases is very important if enhancing students' understanding of content is desired. The unique content and pedagogy of physical education requires that cases be carefully crafted for a particular purpose. This study provides an encouraging example for using cases to enhance not only generic thinking skill, but also students' understanding of physical education content. Three cases were developed for the elementary education games class that on first use elicited important and relevant discussions among beginning preservice physical education teachers. More use of these cases would answer the question whether consistent issues are raised with each new case discussion.

More descriptive or qualitative studies documenting the influence of cases and case discussions on teacher reflection or other desirable outcomes is necessary. Merseth (1996) suggested that researchers conduct more empirical comparisons between case methods and other instructional methods.

Researchers, however, must use caution when comparing other instructional methods with the case discussion method, because the goal of each method is likely to be different. Business educators rarely conduct entire courses based on case discussions (Forrester & Oldham, 1981), and Spiro and his colleagues recommended using cases in addition to other methods of instruction (Spiro et al., 1987). The desired results of case use must first be carefully defined prior to comparing it to other instructional methods.

Generally, cases are compelling stories about specific teaching situations. The three cases discussed in this study did influence reflection ability in the short term. It is possible that the narrative nature of the cases makes them more memorable than other knowledge organizations. Longitudinal research is needed to explore whether the discussion of compelling, carefully crafted stories enhances learned knowledge or attitudes in the long term.

Finally, the possibilities are wide open for researching different kinds of cases, case methods, and their influence on different populations. Cases can be short or long written narratives, video, computer simulations, or live dramatizations. What, if any, are the benefits of these other kinds of cases? How do the case discussions differ? How should cases be discussed for particular purposes? What is the role of the facilitator? What preparation is needed to lead a case discussion? Do case discussions yield different outcomes for preservice teachers, beginning teachers, or experienced teachers? These are just a few of the many questions physical education researchers and teacher educators need to consider as they explore the possible use of cases for physical education teacher preparation.

The Future of Case Use in Physical Education

Will the use of cases and case discussions become a common pedagogical method in physical education teacher preparation as it has in other fields, or is this just another brief fascination with a passing fad? The answer to this question remains to be seen. The following recommendations for case use must be taken with caution by physical education teacher educators because research documenting the pedagogical power of cases in teacher education is still scarce, and no other study in physical education exists.

The process and results of this study allows me to make the following recommendations to teacher educators interested in using cases for teacher preparation. All of the recommendations involve the method used for the case discussions. First, the case method used was useful for getting students to participate in the discussion and draw on relevant material to solve problems. However, upon reflection, I would change one part of the process, namely how the discussions started. As the facilitator, I began by asking the students to identify the facts in the case, and I wrote them on the posterboard at the front of the room. This was a very important step, but it did not raise interest in the case from the beginning. Case advocates R. Silverman and W. M. Welty recently recommended beginning with a carefully crafted compelling question that allows people to explore one of the important issues in the case (personal communication, February, 1996). In discussing this issue, the case participants begin to explore the facts in the case, so the facts come out anyway. This minor change would get the discussion started and

raise interest right from the beginning of the case discussion, and would give students a reason for accurately describing the facts in the case.

The second recommendation about the case method is to stress to the participants the need to include related information from the course they are taking or other theoretical information. This worked quite well during our discussions, as the students were able to use course information to identify problems, solutions, and concepts in the study. However, the discussion occasionally broke down because the it went in another direction that did not add to the students' knowledge. Sometimes students were having so much fun arguing that they did not use accurate information to make their points. The facilitator needs to step in and focus the discussion on relevant issues in the case. Briefly asking relevant questions about how course content or supplementary readings relate to the case can bring the students back to a useful discussion. Such "distractions" occurred rarely during our discussions; but given the short amount of time to discuss the cases, it was important to stay focused.

Finally, this study revealed that four students' reflective attitudes were positively influenced by the case discussions. The degree of this influence is uncertain, but these are promising results. However, several students' attitudes did not appear to be influenced by the case discussions. Upon reflection, it could be that the case discussion format contributed to the unwillingness of students to confront beliefs or remain open to future learning. During the case discussions, I tried to reduce my verbal participation in the case discussions, allowing the students to talk to each other. As opinions on the issues were offered, I tried to get students to

evaluate and challenge each other based on fact, theory, and personal experiences. As can be expected with beginning preservice teachers, they sometimes made factually inaccurate statements and based their arguments on false assumptions. As the case facilitator, I did not always challenge these inaccuracies; I waited for the students to evaluate responses. Sometimes, however, the statements were not challenged, perhaps because students do not want to confront their peers or they didn't know the answer themselves. In either case, several different opinions were offered with little critique of their worth. In retrospect, I would have taken a greater role as the case facilitator and given more examples of how to challenge assumptions tactfully. Richardson (1993) stated the facilitator has a critical role to play in the case discussion and should be active leaders of the discussion. The reflective attitude results of this study seem to support this contention.

This descriptive study was a first attempt to investigate the use of cases for promoting physical education preservice teachers' reflection. The encouraging results support some of the theoretical claims regarding the benefits of case discussions for teacher preparation. Continued development of physical education cases and research about the benefits of case discussions are needed as teacher educators search for ways to increase the impact of teacher preparation.

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APPENDIX A

Course Syllabus

ESS 216-01
Children's Physical Education II: Educational Games
Fall, 1995

Instructor: Brian Bolt
Office: 237-J HHP
Mailbox: South Faculty Hall, 2nd Floor
Office Phone: 334-3030
Home Phone: 632-0169
Office Hours: Mondays 10:00-12:00, after class, or by appointment

Class meets: Tuesdays/Thursdays 8:00-9:15 am -- Research Gym HHP Bldg.

BASIC BELIEFS AROUND WHICH ESS 216 (215 & 354) IS DESIGNED

1. Movement is the content of physical education.

2. Being knowledgeable about movement and how it develops over time is essential to becoming an effective teacher, and is considered a basic part of a physical education teacher's knowledge.

3. Movement can be "understood" from different perspectives: mechanical, developmental, a skills model (fundamental/specialized skill) and a conceptual model (Laban's body, space, effort, relationship).

COURSE OBJECTIVES: All course experiences are designed for prospective teachers to become confident in:

1. beginning to formulate through reflective thought personal beliefs about physical education for children, in particular, the curriculum area of educational games/sports for children, K-5.

2. beginning to identify personal beliefs about the concept of progression (developmental education) as it relates to the curriculum area of educational games/sports for children, K-5.

3. knowing how the games movement framework used for this course and your personal knowledge of sports can be used together to identify the content of educational games/sports for children, K-5.

4. analyzing and performing single and combination skills including manipulations of time, space, and force in a variety of contexts (i.e. changes in body parts, objects, implements, equipment and game settings.

5. analyzing and performing basic offensive and defensive strategies across net/wall, invasion, and striking/fielding games/sports.

6. understanding the relationship between games/sports skills/strategies and game/sport structure (boundaries, rules), and with this knowledge developing and understanding of how to assess the educational value of a game and make appropriate modifications to achieve desired objectives.

7. analyzing factors (biomechanical and motor development) that affect skill performance and understanding games/sports safety considerations.

8. expressing personal beliefs in a open forum concerning physical education, and analyzing the beliefs of others based on rational arguments.

Course Readings: Course Pack Available at University Bookstore: Educational Games (working draft) by K. Barrett.

Appropriate Dress: You must wear standard work-out clothes for all classes unless specified by the instructor. Shorts or sweats and court shoes are required for all classes that meet in the gym.

CLASS ATTENDANCE

Class attendance is very important, and you are expected to prepare for and attend all class sessions. There may be times during the semester when you are ill or a family emergency causes you to miss class. Please let me know in advance if you expect to miss class. In addition, be sure that you make arrangements to obtain class notes and make up any missed work. Attendance will be taken every day. As added incentive to attend every class,

20% of your final grade will be based on attendance. The following system will be used to determine your grade.

A+	105	Perfect attendance
A	100	One absence
A-	94	Two absences
B	86	Three absences
C	74	Four absences
D	62	Five absences

* six absences--dropped from course

ESS 341 ASSIGNMENTS AND EVALUATION

ATTENDANCE	20%
FINAL	35%
QUIZZES	30%
CLASS ASSIGNMENTS	15%

All assessments will be based on a 100-point scale.

A = 95-100	B- = 79-82	D+ = 63-66
A- = 91-94	C+ = 75-78	D = 59-62
B+ = 87-90	C = 71-74	F = below 59
B = 83-86	C- = 67-70	

COURSE OUTLINE

DATE	TOPIC(S)
August 22	Introduction
August 24	Overview and Definition of Terms
August 29	Def of Terms cont...
August 31	Manipulative skills as single skills catching-collecting, striking throwing carrying-propelling: Dev. Sequences

September 5	Manipulative skills as single skills cont.
September 7	Manipulative skills as single skills cont. **Reflection on Game Episode # 1**
September 12	Locomotor skills/single and introduce combination skills
September 14	Locomotor and Manipulative skills as combination skills **Reflection on Game Episode # 2**
September 19	QUIZ # 1
September 21	Intro strategies **Reflection on Game Episode # 3**
September 26	**Case Discussion # 1**
September 28	Strategies/Game Play: Tag Games Criteria for assessing games
October 3	**Case Discussion # 2**
October 5	Strategies/Game Play
October 10	**Case Discussion # 3**
October 12	Game Play
October 17	FALL BREAK
October 19	Game Play **Reflection on Game Episode # 4**
October 24	Game Forms
October 26	NO CLASS
October 31	Game Forms

	Reflection on Game Episode # 5
November 2	Game Play
November 7	Game Play **Reflection on Game Episode # 6**
November 9	QUIZ 2
November 14	Game Play
November 16	Game Play
November 21	Game Play
November 23	THANKSGIVING
November 28	Introduce Project
November 30	Project Work
December 5	Project Work/Presentation Practice
December 14	EXAM 8:00-11:00

Understanding Content:

The bulk of content for this course is connected, or interrelated. Concepts that are introduced and studied will be continually used throughout the semester, and throughout the semester you will be expected to continually draw on information from the course and your personal experiences. This course will serve only as the beginning of your understanding of playing and teaching educational games. Content will continually be presented and reviewed throughout the semester as you develop greater understanding of the material.

APPENDIX B

Internal/External Orientation Test and Scoring Rubric (Adapted from Korthagen, 1988)

For each statement, please circle the choice that best reflects your response. You are also invited to include comments regarding your reactions to the statements.

1. I like to learn physical skills.

never seldom regularly often always

2. I enjoy reading psychology books explaining why people act a certain way.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

3. I feel it is important to have other people give me feedback about my behavior.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

4. I like to have the support of other people when I am learning physical skills.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

5. I think it is important to have personal relationships with my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

6. I like to get hints from other people when I am learning physical skills.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

7. I constantly try to get to know myself better.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

8. I like to get suggestions on how I can improve relationships with my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

9. I find it annoying to have other people tell me how I am being thought of by them.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

10. If I cannot learn a physical skill right away, I like to get help as fast as possible.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

11. I find it interesting to get to know my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

12. I find games and sports fascinating.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

13. I try to be conscious of my own behavior.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

14. I like it when my instructors regularly give me an overview of what we have learned so far.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

15. It is important to me that my fellow students tell me how they perceive my interactions with them.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

16. I think it is the task of my professors to teach me how to work with other students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

17. I like to practice and learn physical skills by myself.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

18. I appreciate it when other people tell me what to look at in my behavior.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

19. I like to interact with my fellow students on a personal level.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

20. I expect professors to help me improve my cooperation with my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

21. I appreciate it when other people tell me how I can better present myself.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

22. Game (sport) playing is challenging for me.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

23. I find it important to hear what other people have to tell me about myself.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

24. I like to read books that have suggestions on how to interact with others.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

25. I am interested in my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

26. I like to learn physical skills in a way in which everything is explained step-by-step.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

27. I would rather not think about myself.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

28. I am a person who likes to learn physical skills without other's help.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

29. I expect a supervisor to help me get a more accurate view of myself.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

30. I can spend extended periods of time learning a new physical skill.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

31. I want people to tell me what I am doing wrong.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

32. I like it when someone shows me how to do a physical skill or learn a game strategy.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

33. I am interested in tips on the best ways of working with my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

34. I find it annoying when someone helps me learn a new skill or game strategy

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

35. I consider it important to receive information from my professors about the way I work with my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

36. I dislike talking about myself with other people.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

37. I try to foster a good relationship between myself and my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

38. I like it when people point out my strong points.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

39. I like to do play games and learn skills that involve similar movements.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

40. I like it when others express their opinions about my conduct.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

41. I prefer to learn physical skills with an instructor around to help me

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

42. I like to get to know my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

43. I think it is important to get suggestions on how to improve cooperation with my fellow students.

not at all true of me	not very true of me	somewhat true of me	very true of me	totally true of me

44. I think about my strong points.

never seldom regularly often always

45. After I've quit working on them in class, I still think about certain physical skills.

never seldom regularly often always

46. I think about my fellow students.

never seldom regularly often always

47. I think about the question: "Who am I?"

never seldom regularly often always

48. I reflect on the question: "What do I want to be like?"

never seldom regularly often always

49. I come up with new physical skill, or ways to practice skills in response to materials I have learned in class.

never seldom regularly often always

50. When I have a problem with fellow students, I ask for advice from someone.

never seldom regularly often always

51. In my free time I work on physical skills.

never seldom regularly often always

52. After something happens, I think about how I reacted.

never seldom regularly often always

53. I continue working on physical skills after they have been discussed in class.

never seldom regularly often always

54. I take interest in the problems of fellow students.

never seldom regularly often always

55. I think about my weak points.

never seldom regularly often always

56. I think for a long time before I make a decision.

never seldom regularly often always

57. I think about my own development.

never seldom regularly often always

58. If I have a problem with a fellow student, I think about it afterwards.

never seldom regularly often always

59. I think it is a waste of time to learn physical skills on my own when there are people around who can tell me how to do them.

never seldom regularly often always

60. I reflect on myself.

never seldom regularly often always

61. I probe into the minds of fellow students.

never seldom regularly often always

INTERNAL/EXTERNAL ORIENTATION TEST
(Adapted from Korthagen, 1988).

BREAKDOWN

	Self	Fellow Students	Subject Matter
Internal	7, 13, 27(neg), 44, 47, 48, 52, 55, 57, 60	5, 11, 19, 25, 37, 42, 46, 54, 58, 61	1, 12, 17, 22, 28, 30, 45, 49, 51, 53
External	3, 9(neg), 18, 21, 23,29, 31, 36(neg), 38, 40	2, 8, 15, 16, 20, 24, 33, 35, 43, 50	4, 6, 10, 14, 26, 32, 34(neg), 43, 50

APPENDIX C

Pre-and-Post Reflection Orientation Questionnaire and Scoring Rubric (adapted from LaBoskey, 1994)

For the purpose of grouping, I will be looking for extreme scores. The most clear-cut reflective and anti-reflective responses will be given a score of + 5 or - 5, respectively. Those that cannot be determined will be given a score of 0. Generally, -5 responses are simplistic and certain; they deal mainly with practical issues and first hand experience. They see the teacher only as the transmitter of knowledge and indicate more concern for themselves, and/or the subject-matter than their students. In contrast, + 5 responses indicate a real struggle with the issues; they show a propensity to consider alternatives and reconsider preconceptions. They indicate greater concern for the long term issues and the needs of students. They seem open to learning both about practical and theoretical ideas. They see the teacher as a facilitator of learning and recognize the complexity of the educational enterprise. [It is important to note the - 5 is not necessarily "bad" -- the subject may talk about some wonderful things (desirable, idealistic goals and wishes), but in a simplistic way.]

Question # 1: What do you want your students to call you (e.g., Miss Jones, Mr.Smith, Ms. Turner, Steve, Alice)? Why?

[Regardless of choice, the rationale is the indicator]

- 5 Do not see a need for differentiation of roles; indicate a desire to be friends with the students; portray the adoption of the teacher role as being easy; imply that the title will make the difference. Have not examined the issues--choice made on the basis of tradition.

+5 Indication of a struggle with the issue; they are weighing the various options and are open to possibilities; they understand that the differentiation of roles is an issue, but they are uncertain as to how to do so in a positive, productive fashion. Also, any indication that they accept the new and different role of teacher and that the title may play a part in the development of that role, but this won't be the whole answer (usually a surname choice).

0 Responses that do not answer the question or any response that cannot be rated as - 5 or + 5.

Question # 2: What kinds of things should physical education teachers know about? That is, if you were to design a test for physical education teachers, what types of information would that exam test for?

- 5 Fairly simplistic--think the question can be answered with a few discrete, listable skills; almost exclusively relational ("All you have to do is care" implication) and /or practical skill items, e.g. discipline, oral presentation, focus on own experience and

imply that teachers are born; teacher only as transmitter of subject-matter knowledge; use more as an opportunity to display own knowledge than to probe issue.

+ 5 Indication of awareness of complexity (hard to test); image of teacher as facilitator; any thoughtful discussion of one or more of the following issues: need to adapt subject-matter to kids--orientation to student needs, need for "theoretical type" knowledge; need for flexibility and open-mindedness; need for self-awareness (also if more than one issue identified, they acknowledge the interrelatedness of the issues).

0 Just doesn't go clearly into one or the others, e.g., concentrates on the form of the test; features of the response "cancel each other out," e.g., they have a good list of test-worthy items but they are stated with too much assurance.

Question # 3: Define teaching.

[This question is closely related to questions #4 and #5; these responses should be read at the same time. Though the answers will be rated separately, the ratings may be influenced by one another. Try not to have opposites within these three responses. If two seem to be opposite, consider which seem to be most definite and assign it the + or - score and give the other a 0.]

- 5 Teacher only as transmitter of knowledge; teaching is doing something to kids.

+5 Acknowledges teacher as facilitator, guide, helper role; need for adaptation to learners.

0 Generic discussion of the " role of teacher" without reference to the teaching of anything or any response that cannot be rated either as + 5 or - 5. Also for this and #5 and #6, if the first reaction is altered by the reading of the two associated responses, give a 0.

Question # 4: Define learning.

[Related to questions #3 and #5. These responses should be read at the same time. Though the answers will be rated separately, the ratings may be influenced by one another.]

- 5 Student as receiver of input (learning as just taking in and using); simplistic; reference only to more to the content than the process and when processes are discussed, they are described as more external than internal, e.g., listening, asking question; learning as an attitude rather than a process-- "being open."

+ 5 Learning as an active process--student in Active role wit process described as not just acquiring knowledge but adapting, building; active involvement with materials resulting in restructuring or building upon old knowledge; fairly sophisticated.

0 Incomplete answer or one that cannot be rated as either - 5 or + 5. Also, as in #9, if the first reaction is altered by the reading of the two associated responses, give a 0.

Question # 5: What do you think is the relationship between learning and teaching?

[This question is related to #3 and #4. However, it can stand well alone and should be rated separately. That is, this question may be read together with #3 and #4 at the time that ratings are assigned to #3 and #4. But the rating for this question should be given at a later time when this question is read again apart from the others. After the rating is decided, check the ratings already given to #3 and #4. If any opposite score is already recorded, all may be reconsidered or a 0 recorded for # 5.]

- 5 Simplistic-- can't have one without the other, especially no teaching without learning, and that's the whole answer; teaching only as transmission of knowledge; main factor is motivational in whether teaching results in learning; more concern with the external behaviors than internal processes.

+ 5 Description of interrelationship of the processes with teaching see as facilitating learning.

0 Talking more about career of teacher than process of teaching; doesn't really answer the question or can't be rated as a - 5 or + 5.

Question # 6: Describe what it will be like to be a teacher in a gymnasium.

- 5 Mainly idealistic, simplistic--lists of tasks; any description that includes other -5 responses, e.g., teacher as transmitter, primary concern with the practical and focus on the self; give the impression of certainty about projections.

+ 5 Picture of continual growth--inquiry orientation; focus on kids more than self; indication of some awareness of + 5 concerns, e.g., teacher as a facilitator, education as a complex enterprise.

0 Affective description only--a list of emotions or any answer that cannot be rated as - 5 or + 5.

APPENDIX D

Lesson Episodes

[The lesson episodes were brief, each lasting approximately 10 to 15 minutes. They were taught by the teacher/researcher; the students participated in each lesson episode. Each lesson was videotaped from a wide angle, and a cordless microphone was worn by the teacher. The game was taught at the end of the class period, allowing 15 minutes at the end for students to write their lesson reflections. Students were briefed about the procedures prior to the first lesson episode. It was important that the students understand the teacher was playing a role during the lessons. The lessons have not necessarily been designed as an example of what to do. In fact, some inappropriate practices have been included on purpose to allow students to critique the lessons. A field game lesson, net game lesson, and invasion game lesson were selected to give the students the opportunity to reflect on different types of lessons. Each lesson episode provided an opportunity for the students to reflect, however, additional manipulations were inserted to allow students to explore the complexity of teaching. For example, three different methods of dividing kids into groups was used, and the language of the teacher was manipulated (i.e. teacher often used the phrase "you are doing that wrong."

Lesson Episode One: Kickball

Equipment: One large red playground ball

Procedure: Students were divided into two teams (lined up by height and divided evenly) and play a standard game of kickball. Mats were placed out for bases and the teacher acted as the pitcher. Each team kicked around the "batting" order twice before ending the half-inning. The total number of runs scored for each team was recorded after each half inning. Standard baseball rules for fielding were used, however, the students were allowed to throw the ball at the runners to get them out. They were instructed to throw the ball below the waist of the runner. Runners were told to be prepared to get hit and to try to dodge an incoming ball. The students were told not to throw the ball hard when they are close to the runners. The game was played until the time ran out and one team was declared the winner. The losing team was told to put away the equipment. Praise and encouragement to play hard was given, but the teacher did not provide any comments regarding skill or strategy

Lesson Two: Deck Tennis

Equipment: 3 Nets set up to 5' feet height, 3 rings

Procedure: Students were divided into two teams (captains were chosen who picked teams) and placed on both sides of a badminton court. Students were instructed to toss the ring over the net to the opposing team so that they can catch it (cooperative). A rule stating that the students must throw the ring from below shoulder height was added. The number of consecutive catches were counted and goals for consecutive catches were set. A second ring was added and the students were told to throw the rings over the net consecutively with the stipulation that your cannot throw to the person throwing the ring. Again the number of consecutive catches were counted and goals were set. During this time the teacher gave strategic instruction such as "throw to a person." Next, the students were told that the game is now competitive. They should try to throw the ring so that it cannot be caught be the other team. (The boundaries were set up in such a way that it was virtually impossible to find an open space). At this point the teacher begin to modify the game. Students were removed from the court and placed in a new game at other nets. Boundary, rule, and number of players modifications were continually be made by the teacher to elicit intense games that required high amounts of effort. The teacher emphasized game strategy and asked students about strategy, for example, "where is the best place you can stand to cover the whole court?" The games continued until time ran out.

Lesson Three: Modified Lacrosse Tasks

Equipment: lacrosse sticks, lacrosse balls (stxball equipment)

Procedure: Students were be given a brief explanation and demonstration of the cradle, pass and catch and were given brief opportunities to practice these skills. During the practice, the teacher walked around and "corrected" the "wrong" form, giving cues based on the mature pattern. The tasks included a standing cradle, slow jog cradle, passing at the wall, passing to a partner, catching from a hand thrown ball, and catching from a partner's pass. A brief choice time was given to the students suggesting they take the opportunity to practice any of these skills that they wanted to. The students were asked to participate in a 3 on 2 invasion game in which three offensive players attempted to pass the ball along the length of the floor while being guarded by two defensive players. Rules stated the students must throw from a standing position and the defensive team must give the thrower room to throw. The teacher gave skill instructions only (as expected, the students skill level was

not suitable for this game). Only five players were involved at a time while the others waited their turn. The game was played until time ran out.

APPENDIX E

Metacognitive Interview Protocol

[Interviewees received a copy of their pre-and-post lesson reflections at the beginning of the interview. They were asked to review the material for approximately 10 minutes.]

1. What, if any, differences do you observe between the parallel lesson reflections? Please list them and comment on why you think the changes occurred.

Probe: What specifically did you write about the second time that you didn't write about the first time?

Probe: Do you see any common themes or links between the discrepancies?

2. I would like you to think back about the three case studies we discussed, Where Have You Gone, Joe DiMaggio, The Note, and The Outlook Wasn't Brilliant... What are your perceptions of those discussions?

Probe: Did you see any value in using these cases for this class?

Probe: What specifically helped you?

3. What, if any, changes in beliefs about physical education or games teaching occurred over this semester?

Probe: Were any of your beliefs about teaching confirmed?

Probe: Can you attribute any of your changes or confirmations in beliefs to specific aspects of the case discussions?

Probe: Was there any issue that was discussed in the cases that caused you to challenge your previous assumptions or beliefs? Did your beliefs or perhaps your understanding of the issue change as a result of the discussion?

Probe: In what way did the discussion help you understand or clarify your existing beliefs?

APPENDIX F

Where have you gone, Joe DiMaggio?

His father's piercing stare had little effect; it was Martin's subdued tears that churned my stomach. After all, in my 21 years of teaching physical education at Westwood Elementary, I had survived two generations of angry parents. Most of the time I was ambivalent about these confrontations; at least it showed that the parent or parents cared, which unfortunately was a problem at Westwood. All teachers realize that encounters with family are a part of being in public education. It doesn't matter what kind of teacher you are, you're never completely insulated from the wrath of fiery parents who believe their child has been treated unfairly. Although I have always taken the complaints seriously, it has been years since a father bent on intimidation could make me feel nervous. However, Martin's sniffling rendition of the events that had led up to this point perplexed and troubled me.

Ms. Jarvis, please come to the principals office. The intercom in the gym was barely audible. Instinctively, I looked at my watch as I seemed to do 1000 times a day. "4:48 on a Thursday, I should be driving home by now." Somewhat perturbed over the intrusion to my schedule, I began my march down to the office to address some concern that I was sure could be handled tomorrow. I arrived to find Martin Stevens, one of my fourth graders, seated in the chair across from Principal Grayson's desk, he was wiping his tears with his shirtsleeve and trying very much to act in control. His father, Ronald Stevens, stood near the back corner of the room, the perfect angle for

fixing his accusatory eyes on me while staying in the peripheral vision of his visibly shaken son.

"Go ahead," Mr. Stevens commanded, "Tell the man what happened." Impatiently I sighed and waited for Martin to compose himself, all the while preparing to defend myself once again. From time to time I had been called to the office to soothe the fears of worried parents about physical education conflicts or to conduct amateur medical diagnoses of minor injuries. In my years at Westwood, I had successfully handled situations like this before. I did not expect this meeting to be an exception.

My well-earned reputation as a competent teacher who was able to stand up under pressure did not emerge over night. Before I was hired as the elementary physical education teacher at inner city Baltimore's Westwood Elementary, several board members and parents raised concerns about my potential as a physical educator. Most of the skepticism seemed to result from my gender and stature more than my teaching competence. Somehow people just couldn't imagine how a 5'2", 115 pound woman would have the disciplinary power to handle what were called a "bunch of troubled and needy kids" by the school principal. Fortunately, my good grades and some assuring recommendations from my university professors were enough to persuade the administration to give me a chance. It also didn't hurt that I had achieved all-conference basketball award while at a local high school and had even played for two years in college. Now, over two decades later, I had solidified my role as a capable professional and a valued influence at the school.

Although some might think that I have let some things slide over the years, I am generally proud of the program that I have built at Westwood. On several occasions, I've had to explain and justify my existence at the school as budget cutting took its traditional aim at elective "frill" classes. Despite the cuts, I still managed to see every third, fourth, and fifth grader in the school twice per week for thirty minutes. Interestingly, on the occasions when I did have to defend my program, it was the social goals of my program that seemed to carry the most weight with the administration and the parents. "In my class kids learn to deal with life," I proudly asserted, "and social skills are what these kids really need." When asked how I achieved this, I confidently

stated, "Competition. It teaches kids sportsmanship and that success requires hard work. When they learn that in my gymnasium, it helps them to act responsibly in other parts of their lives."

My program is built around this idea, and the kids really love it. Westwood is not an "easy" place to teach physical education, or for that matter, any subject. Over 75 percent of the kids qualify for free lunch, and many go home to neighborhoods full of violence and drugs. Last year, two students were caught bringing handguns to school (yes, this is elementary), and it seems that there is at least one kid caught with drugs every month. Still, many of the students are what I would call good kids, who are making the most of their situations.

In my class, most of the time is spent working on large group games, such as volleyball, kickball, dodgeball, tag games, and their favorite, basketball. Classes are generally divided into equal teams and we play games that the students seem to enjoy. Truth be told, I don't really think that it is that important that they learn how to throw or catch properly, I just use the games to give them a chance to play and as a tool to teach them about life. A lot of my friends who teach P.E. in other local elementary and high schools seem to agree with me. The curriculum guides from the state office and the few articles I read in JOPERD continue to stress teaching basic motor skills, but in the "real world" it seems more important that kids, especially these kids, learn to feel good about themselves and get a chance to let off some steam through play. I try to instill the values of teamwork and sportsmanship in my class. That's why I stress competition; the kids get a chance to play on a team and compete for a prize. I see them working hard (even the ones who don't do any work in the classrooms) and getting excited about winning. Just seeing these kids get excited about something makes me think that they are learning.

Many of these children don't learn the difference between right and wrong at home, so I am here to give them skills that they will need in life. Competitive sports give these kids, boys and girls, a chance to feel good about themselves because they have accomplished something. You should see their eyes light up when one of them scores a goal or shoots a basket to win a game; they become like different people. They dance around and shout and

high five their teammates. When I watch my students I remember how much I loved to play sports when I was younger. I remember playing ball every day until dark and collecting and memorizing baseball cards for the entire 1964 New York Yankee Roster. Through some careful maneuvering, I had even acquired rookie cards of Joe DiMaggio and Willie Mays that to my dismay were mistakenly thrown away by my mother during a spring cleaning frenzy. These guys, and many other athletes, were heroes to me. Oh sure, some people called me a tomboy, but I didn't care that much. My father encouraged me to try out for the boys' teams, and I was good at everything I tried. Without a doubt, the love of sport has been a constant, positive influence in my life and has kept me out of trouble more than enough times. Now, after 21 years of teaching, I feel confident that I know what is important for these kids. So I try to instill a love of sport in my students to give them something to strive for and be proud of. Thankfully, the administration has always supported my efforts.

With his throat now cleared and eyes dried, Martin began to tell his story. "I didn't mean it," he stammered, "I didn't mean it."

"Tell him what happened," his father broke in angrily.

"Go on, son," Principal Grayson interrupted, "Take your time."

"He was bothering me." Martin's tone seem to change from penitence to defensiveness in midstream; the story continued.

"He's been bothering me for a long time, it started in the gym." As I listened, the reason for my presence at this meeting began to come into focus. Martin went on to describe in broken English the basketball tournament that we had been conducting in physical education over the past three weeks. By the fourth grade, most of my teaching units involved tournament play. In this case I had separated the boys and girls and made basketball teams that played for the "NBA" finals. Fortunately our school has adjustable goals so we play games that at least in rules resemble regulation basketball. The kids choose the team nicknames and I encourage them to play hard; a prize (usually candy) is given to the winning team at the end of the tournament.

Both the boys and the girls played hard; generally they played fair and cheered for their teammates.

Martin's description of his P.E. class was accurate, yet I began to bite my lower lip as he described what transpired since the tournament began. As Martin's mumbling continued, I drifted off, constructing the events in my own head. Over the past few weeks (heck, over the past few years), I've noticed that game play has changed. I think it's great that the NBA theme has gotten the boys to refer to themselves as Charles or Shaq or Michael. Unfortunately, the tournament inherited some other elements of NBA basketball that I didn't count on. The games are rougher, and the kids seem more aggressive both in joy and distress. I purposely allow some contact because it contributes to the flow of the games. Recently, however, unusual scores or spectacular blocked shots have become catalysts for excessive celebrations, high fives, and yes, even taunting. Even though I knew that they loved basketball, I was still surprised how important it was for the students to win the games. They've always wanted to win, but a certain ugliness emerged as the tournament progressed.

For the most part, I ignored the changes. So often it is difficult to inspire these kids to work at anything. I squelched some of the taunting, but chalked most of it up to adrenaline and immaturity and enjoyed the engagement and motivation that the tournament was generating. If a little pushing and harmless trash talk helped them to get into the game, it was a small price to pay. Besides, I see these kids act like this all the time outside of school; it's part of the culture. As for the tournament, the kids loved it, and so did I! I got caught up in the excitement and was proud of my kids for playing hard and expressing themselves.

A school bell woke me out of my daydream. I shuffled as my feet became numb. Martin continued his story.

"Today we got beat by the Bulls - and they won the championship. I had the ball with ten seconds left, and Joey fouled me, but the *ref* didn't call it. He took the ball down, and...and... scored a lucky basket. And then Mrs. Jarvis blew the whistle and said we lost. But I got fouled." I watched Principal Grayson closely; his manner was attentive but he was still confused.

"And after you lost, then what happened," he prompted.

"Nothing." Martin's head slumped, and his voice became muffled. His father's disapproval hung heavily in the room.

"Nothing until he kept bothering me on the way home. He kept calling me names, and teasing me about losing. I wanted to win and my team should have won if the *ref* would have called the foul, but Joey just kept *buggin* me. He said it was my fault that we lost, and he said my team sucked...he just kept *buggin* me... I... I didn't mean to do it, I slipped."

Mr. Stevens had heard enough. His patience had run out ten minutes ago. In the same breath he finished the story and began a ferocious assault directed at me.

"He pushed him!" Mr. Stevens screamed, "Martin pushed the boy. He saw the bus coming and he pushed the boy into the traffic! In front of 20 other kids he pushed the kid in front of the oncoming bus!"

A collective gasp from Mr. Grayson and I seemed to suck all of the oxygen out of the room. I was frozen with horror. Mr. Stevens continued, "I'm not *sayin* my boy was not responsible for this, but just what the Hell are you teaching these kids here? The way I see it, this is partly your fault. I struggle every day to teach him that violence is wrong, that gang members are losers, and that you can't get anywhere with your fists. Now he tells me that you laugh when boys taunt each other in gym class. Isn't it enough that I'm up against pro athletes who act like idiots and make millions of dollars? Don't you feel the least bit responsible for teaching these kids that real life is not like what they see on television? My boy was finishing a fight that started in your gym, and you didn't do anything about it. You are just as responsible as he is!"

The room fell silent, except for Mr. Stevens' amplified breathing. Principal Grayson and Mr. Stevens turned their eyes in my direction, each waiting for an explanation. It took a moment to comprehend that I was being blamed for this horrible tragedy orchestrated by a 10-year old boy. My tongue lay dormant in my mouth like a corpse in a tomb. Martin began to whimper again. I took a deep breath, collected my thoughts, and spoke.

Question Guide

1. What do we know (facts) about the characters in the story, Mr. Jarvis, Principal Grayson, Martin Stevens, Ronald Stevens?

2. What do we know (facts) about the school, community?

3. What inferences can you make based on these facts?

4. What are the issues in this case?

5. What is Mr. Steven's point? Is it valid?

6. What can Mrs. Jarvis say in this situation? Which is the best answer? Do you think a program change is necessary? Why?

APPENDIX G

The Outlook Wasn't Brilliant...

My first instinct was to run, get out, abandon ship. Every time I had taught before it felt like acting, and I knew the role would soon be over. This time I was in the spotlight, feeling pressure from every direction, anxious, fearful, and completely self-conscious. I wonder if they knew how little confidence I really had, how nervous I was, or how close I came to giving up teaching. That particular student teaching day was when I began to realize that my choices and actions had consequences for myself and the children in my gymnasium. Now, eight years later, I look back on that experience as the deciding moment in my career as a teacher.

Up until that fateful day, I was quite sure that I knew what I was doing. The first seven weeks of my student teaching at Brandenburg Elementary had proceeded without a hitch. Oh sure, it was tiring, and sometimes frustrating, but the anticipated anguish was much worse than the actual experience. Brandenburg was a good place to student teach. By that I mean the students were basically good kids who listened to the teachers and enjoyed P.E. The rural Virginia town of Brandenburg surrounded the school like a moat surrounds a castle, keeping out the danger out and old time values in.

Brandenburg Elementary, located in foothills of the Appalachian mountains in western Virginia, was a small school by statewide standards. The student population included primarily white, lower to middle class students who came from families who loved God, country, outdoor barbecues, and college football, not necessarily in that order. Long-term visitors or just passers by couldn't help but notice and get caught up in the town's quaint surroundings, or the vital heartiness of the locals as they conducted daily business. Hard work and community pride served as

unspoken mantras that guided the actions and attitudes of Brandenburg's inhabitants. Yet with all of the pseudo-metropolitan bustling of main street, a gentle stillness hung in the air, filtering out blind ambition and skewed priorities that might keep folks from enjoying sweet watermelon on a sultry summer day. Brandenburg was a great town, I should know, it was where I grew up.

Although it was unusual for a student teacher to be assigned to a school in his hometown, somehow I was able to persuade my professors that Brandenburg was the place for me. I loved small town life and planned on looking for a teaching job in Brandenburg or a similar locale. Besides, my parents moved to Brandenburg when I was twelve so I never attended the elementary school.

Even before entering the job market, I was acutely aware of the difficulties of finding that first physical education teaching position. Unfortunately, my fear of unemployment was real; several of the P.E. teachers who graduated the year ahead of me had difficulty finding jobs. Competition for the few openings in the area was stiff. Therefore, it was very important to me to impress my superiors during student teaching. "It's not what you know, but who you know" rang in my head as a reminder of the realities of real world job searching.

While at Brandenburg, my role included teaching kindergarten through fifth grade classes under the close supervision of my cooperating teacher, Mrs. Ellison. She had been teaching at the school for 16 years and was a valued member of the faculty. For most of her career, Mrs. Ellison's philosophy of physical education teaching centered on teaching the whole child. "Skills and game play are important", she said, "but it is also important that they learn about how their bodies work and how to take care of themselves." Of equal importance to Mrs. Ellison, and just about the whole staff at Brandenburg, was that students learn to get along with one another while striving to achieve their full potential. She further rationalized that since she only saw the kids once per week, there wasn't ample time to work on skills. However, she still took pride in the fact that many of the standout athletes at the high school had come from Brandenburg Elementary, and she felt that her program had something to do with their success.

A few years prior to my student teaching, however, Mrs. Ellison had attended a workshop that slightly changed her view of teaching. The workshop focused on the developmental nature of skill learning, noting that children go through stages of skill learning, and teachers should be able to recognized and guide children through those stages. Mrs. Ellison began to focus less on the athletes and more on the students who had average or below average athletic ability. She didn't neglect the athletes; rather she made it a point to try to meet the needs of all the kids in the class. As a result, the games format she previously used changed from using standard or traditional games to more creative, original games designed for teaching kids at their developmental level. She noticed that the athletes were dominating the large group games and little skill learning occurred, especially among the lower-skilled children. In fact, it was her shift in philosophy that endeared her to the faculty at the university I was attending. Some members of the university faculty promoted the developmental perspective for teaching physical education. I hadn't made up my mind about my philosophy at the time, but I was pleased that my university supervisor and cooperating teacher shared a common vision.

It seemed that things couldn't have gone better right up to the day in question. A few moments before my first second grade class arrived, the principal at Brandenburg walked into the gym. Mr. Kallman, Coach Kallman was a new principal at the elementary, but he was not new to the community. He was a former physical education teacher and still served as the varsity baseball coach at Brandenburg High. In fact, I had played on his team when I was in school and considered him the best coach I had ever had. He didn't fit into the traditional coach's mold; he wasn't loud or callused. It wasn't that he didn't have his opinions, just that he didn't have to yell and scream to get his points across. Like E. F. Hutton, when he talked, people listened. His common sense coaching and teaching style was quiet, almost passive, causing outsiders to think he was simple; those who knew him considered him wise for the same reason. "Just stopped in to say hello and watch a few classes," he said. "After all, you never know when you're going to need a good P.E. teacher or coach."

If Murphy's first law is anything that can go wrong will go wrong, his second law must be when things go wrong, people who matter will be around to see it. Because as 23 second graders entered the small elementary gymnasium in their traditional single file line, bringing up the rear was my university supervisor. Dr. Matthias was a physical education professor at the university who had supervised student teachers for many years. He was considered demanding, but fair. He seemed to know everything there was to know about elementary physical education, and what's more, he genuinely loved working with kids. Ironically, it was his workshop speech that had turned Mrs. Ellison into a believer of developmental physical education.

The convergence of adults in the Brandenburg gymnasium on that cool spring morning occurred completely by accident. Nevertheless, there they stood making polite conversation, three people that I knew, respected, and who held great power regarding my future employment.

Almost instantly I became very nervous. My only thought was that if I could make a good showing in the next two second grade classes, then I would surely be able to get a job in this or a nearby town. In retrospect, the potential for gain or loss on that day was greatly overestimated in my mind, but to me this was the most important day to date in my young career.

With knees shaking, I began the class. I don't remember much about the first half of that 30 minute class, just that I was very aware of the audience in the gym, and as things went well (in my opinion), I steadily gained confidence. The skill for the day was throwing, the overhand, baseball type throw in particular. Leading up to that day we had completed tasks and played games that included all types of throwing with several different kinds of balls. Mrs. Ellison and I had collaborated and we were able to include throwing tasks that varied force, direction, level, and added locomotor movement. The week before I was even able to teach the kids a curl hop and throw.

On this day, however, I was concentrating very heavily on the overhand throw with a small ball. With about 15 minutes left to go in the class, I introduced a game called "clean up the yard." The kids were divided into two teams and separated from each other by the center court line. Several tennis balls were placed on both halves of the gym and on the signal

the kids were instructed to begin throwing the balls out of their "yard." Whichever team had the least balls on their side when the whistle blew would win the round. I had read about the game in a physical education textbook where it said that the game could be used to teach the overhand throw. I also had vague recollection of playing it in the educational games class taught by Dr. Matthias at the university.

Because my thoughts were so scattered at that moment, the exact description of the scene is still a little murky in my mind. One thing I do know is there was energy and enthusiasm in that gym. The "clean up the yard" game elicited a frenzied, jubilant, and frenetic response from the second graders. On the whistle, balls began to fly everywhere at a frantic pace. There were several balls so each kid had plenty of opportunities to clean up the yard. Balls were coming at the kids as fast as they could get rid of them. The most active students were running hard to gather several balls at once, sliding into bleachers as the balls got stuck underneath. High pitched screams seemed to gain intensity as they bounced off the light-green painted block walls.

Unfortunately, I saw very few overhand throws. Previously I had gotten every kid in the class to use an opposition step when throwing, and during the game I was encouraging them to "step and throw at the same time" with all of the voice power I could muster. I don't know If they could hear me, but I was sure to say it loud enough for the onlookers to hear. Some of the kids were just entering a phase of throwing where they began to use their trunks for power. Some would bend over at the waist following their throw which was my clue that I should encourage block rotation. I wanted these kids to learn to throw and step at the same time, so they would get a feeling of using their body for power. I even defined block rotation for them in a short instruction time before that game started. When I could catch the eye of a student that was standing close to me, I motioned the movement that I wanted and the kid would do his or her best to mimic me during the context of the game. I saw some children who were able to show primitive trunk rotation and I praised them for their efforts.

For the most part, however, the balls emptied "the yard" through drops, shoves, kicks, underhand throws, and some ball just bounced off kids and the back wall and found their own way over the center line. I knew

something was wrong, but I persisted through several rounds to fill up the longest 15 minutes I could ever remember. The kids continued to play the game with unbridled enthusiasm, but the game significantly slowed from its frenzied pace about one minute into each round. Finally, the class ended.

In a cruel twist of fate, one of the rare breaks that we had as elementary P.E. teachers occurred between the two second grade classes that day. During that brief 10 minutes, I had three very memorable private conversations. I knew that the lesson needed work but was not prepared for the responses of my three "colleagues." Dr. Matthias and Coach Kallman were talking in the corner of the room while Mrs. Ellison walked toward me. "Well that didn't go so good," I muttered as she helped me pick up tennis balls." She looked at me assuredly as she always did no matter how the lesson went.

"Well, since we don't have much time to discuss what happened, what if I give you a few suggestions for the next class," she said. I nodded and she continued, "First, I'm afraid that the game you played is entirely unsafe. Tennis balls are inappropriate because they could hurt if they hit a child who isn't looking and the kids were moving too fast. My second suggestion is that you do a more thorough job explaining block rotation, because that's a difficult concept, and you should concentrate on it more. You kept saying to step and throw but the kids did not seem to understand. They didn't perform many overhand throws and maybe if you made it a rule or something it might work. That's the best part of your lesson, don't lose sight of your goals. You did a good job and the kids really loved it, don't worry about it.

I know she meant well but that last comment seemed really patronizing. I could tell she was disappointed in my performance, especially with the visitors in the room. *Strike one.*

With new resolve to make the changes she had suggested, I walked over to talk to coach Kallman who had ended his conversation with Dr. Matthias and was sitting on the bleachers. I felt somewhat at ease because, after all, we had a close relationship over the years and surely he would be pleased at my emphasis on baseball skills. The grimace on his face, however, quickly subverted all of my confidence.

"I would think that you would know better," he began; coach rarely minced words, but I knew that he was only trying to help.

"I know," I confessed, "the tennis balls could be dangerous -- and I could have slowed the kids down."

"No, the balls were fine. In all my years of teaching I've never seen a kids seriously hurt by a tennis ball, and I thought the activity level and aggressiveness of the kids was the highlight of your lesson. The problem was the skill." Slightly puzzled, I continued to listen intently.

"If I had a nickel for every kid that tried out for my team that had poor throwing mechanics...well, you know, they don't throw right, that's all, and nobody tells them any different. When my boys were young, from the very first day they put on a glove, they were told the right way to throw from the beginning. I told them to step first, then throw. The arm motion comes after the leg motion. The legs are where throwing power comes from. If they learn to step and throw simultaneously, they never achieve full power on their throws -- I see it all the time. By the time my son Michael was 12, he could have pitched on my varsity team, that's because he didn't learn any bad habits as a kid. You need to teach them right from the beginning, or don't teach them at all. See if you can fix that in your next lesson." *Strike two.*

Nearly tripping over the imaginary tail between my legs, I walked over to Dr. Matthias, my university supervisor who was patiently waiting his turn. My mind was confused and dazed by the contradiction in advice given by these two respected experts. Assuming it couldn't get any worse, I quickly to him my rationale for choosing the lesson, and proceeded to tell him what I was going to do to fix it. Apparently not impressed by my explanation, he broke in exclaiming "What do you mean you got that game from me? We used that game as an example of what not to do...as an example of a game that needed modification!" We came to the conclusion that the major purpose of that game, once it was modified, was to teach strategies like throwing to and covering an open space!" This is a mistake that I expect from methods students, but not from students nearly finished with their student teaching."

The redness of his face and wide eyes clearly indicated that he had a lot more to say, but another group of second graders shuffled into the gym.

"Here come your class. I hope you've your ready to make some changes. Good luck Casey." *Strike three.*

They all stood watching, waiting for me to do what they told me to do. I knew that I would have to change my next lesson, and more importantly, be able to defend the choices I would make. I took a deep breath, and stepped back up to the plate.

Question Guide

1. What do we know (facts) about the four main characters, Mrs. Ellison (cooperating teacher), Coach Kallman (principal), Dr. Matthias (university supervisor), and Casey (student teacher)?

2. What can you infer about them from the facts in the story?

3. What are the issues in the case?

4. What are the character's philosophies of games teaching and how are they different? What are the strengths and weaknesses of each approach? What does that have to do with this course?

4. What are Casey's options, and which are the best? Why?

APPENDIX H

The Note

The package had to pass through several people before reaching its intended target; its arrival, however, was never in doubt. With little regard for the consequences, the couriers artfully performed their clandestine duties. It had always worked this way, and mistakes were rare. The transport system, though never formally organized, was more accurate than Federal Express and usually faster. But not this time. A weak link near the end of the chain carelessly failed to monitor the eyes of the enemy. The perpetrator's futile attempt to conceal the package only magnified her guilt. It was too late. The note was seized.

"Today I will be watching to see how well you move to an open space," continued Mr. Pierce, as he shoved the neatly folded piece of notebook paper into his pocket. "It is an important part of today's lead-up soccer game, and for that matter many other games." He didn't even break stride. After all, this was not the first note he had captured. There had been others, and Mr. Pierce learned very early in the year not to make a big deal out of them. He remembered when he was in school how teachers used to read notes out loud in front of class. Public embarrassment, he was told in college, could cause kids to hate physical education for the rest of their lives. Still, he couldn't help wanting to read the note.

While mentally reprimanding himself for having such a thought, Mr. Pierce became puzzled by the reaction of his fifth grade class. Generally, the prospect of a teacher finding out who said what to whom or which couple was seen holding hands at recess was enough to evoke a sea of crimson faces and a chorus of youthful giggles. Instead, their faces looked pale, gaunt even; and the gym was silent. Lurking behind the eyes glossed with innocence was not embarrassment, but fear. Mr. Pierce knew immediately the note was about him.

Stan Pierce knew that it was only a matter of time before something like this happened. He was a first year teacher at suburban Wilson Elementary School in North Carolina. Wilson was the largest elementary school in the county. About 1000 students attended the school, mostly middle class and predominantly white. About 25 percent of the students were black, with only a handful of other minority kids. The school building was old but well kept. Weeds had taken over the cracks in the parking lot, yet a fresh coat of paint inside and on the trim gave the place a comfortable feel. The school was originally built as a high school, but when Elmore High relocated to a new building, Wilson Elementary moved in. When Stan took the job, he was excited to be working in an elementary school that had more than one physical education teacher and a full-sized gymnasium.

Stan had always loved to play sports. In his sophomore year of college, he decided to become a physical education teacher because he wanted to coach. But a dedicated staff of physical education professors opened his eyes to the need for sound physical education for all kids. He couldn't believe how his perception of physical education had changed over the four and a half years it took for him to finish college. Although he was not willing to put coaching aside, Stan was dedicated to making a difference in the schools. "I want to actually teach the kids something!" Stan had emphatically stated in his interview. His college professors despised the "roll out the ball" type teacher; so did Stan. His goal was to teach kids to be skillful movers, to be expressive and creative with their bodies, and to know about how to succeed in sports and games. He didn't consider himself a physical education "nut", but he knew that he liked kids and was comfortable teaching anything that was related to sport.

"I'm their teacher not their friend," thought Stan as the kids in front of him robotically performed a set of prescribed stretches. Still, the presumably lethal bomb that lay safely dormant in his pocket ignited within him doubts and regrets that even his internal pep talk could not squelch. He badly wanted to read the note right there. He wanted to blast the author with a fire and brimstone speech about respect for the teacher. "These are fifth-graders," he thought. "How did they become so mean?" Despite his feelings, Stan decided to press on with the lesson.

Stan did not know why he was so surprised; he had been struggling with this group of fifth-graders throughout the semester. At first he had chalked it up to being new; his rationale was that children are bound to be apprehensive until they get to know the new gym teacher. Now in the middle of December, it seemed that things had gotten worse. As Stan began to move the children into position for some soccer dribbling and partner work, he couldn't help remembering when his troubles began.

During the second week of school, Stan began to implement a games program based on teaching skills and small-sided games. He wanted to give the kids opportunities to work on skill development, exploring new ways that their bodies could be used to achieve a desired outcome. Small games were used to teach and to force kids to use skills in an ever-changing environment. As a successful high school basketball player, Stan recalled how his coach organized dribbling drills that always included defensive players. "If you practice standing still," he had said, "you'll end up sitting still on the bench." What Stan learned in college only reinforced his previous notions of skill development, and he was trying to implement this information at Wilson Elementary.

"Why can't we play mat-ball," muttered Alicia. "'Ms. Hutcheson's class got to."

"Because we are doing this," retorted Mr. Pierce. "Please get into groups of four and begin working on passing to the cutter." The class understood this command, and little direction was necessary for them to be able to begin the task. Mr. Pierce made a practice of setting the equipment out around the floor in hula hoops; the kids were supposed to get and put back their own equipment throughout the class period. On the way to dropping a ball off, Lisa and David decided to shoot a basket with the soccer balls. "That's enough, get working!" shouted Mr. Pierce, now visibly frustrated. The thought of the note was still in the center of his mind. While walking around and observing, Stan thought again about Alicia's comment. It was something that he had heard far too often in his short career as a P.E. teacher.

The comparison to Ms. Hutcheson, the other physical education teacher at Wilson, was not new. In fact, although Stan enjoyed her company and thought of her as a loving teacher, it was her teaching style that seemed

to be giving him so much trouble. This being Stan's first year, the older classes had Ms. Hutcheson as their physical education teacher since kindergarten. Stan had taken over the third through fifth grades while Ms. Hutcheson had Kindergarten through second. The kids were used to her style, and her curriculum; they did not accept change very well. And due to the fact that there was only one gym in the school, Ms. Hutcheson and Stan often shared space in the gym. Ms. Hutcheson's curriculum included mostly large group activities, like mat-ball, clean up the yard, duck duck goose, and thunder and lightning. The latter, thunder and lightning, goes by many names in other schools such as dodgeball, killer ball, and bombardment. It involves two teams of children squaring off on each side of the gym divided by the center line. Following the starting whistle, kids hurl an assortment of small and large playground balls toward members of the other team with the purpose of hitting them and knocking them out of the game. The team with someone left standing is declared the winner, and the whole things starts all over again.

No matter what game Ms. Hutcheson was leading, the children of all ages seemed to love it. Stan recalled several occasions when he had to stop talking to his class because the activity on the other side of the gym had captured the fixed attention of his students. Who could resist watching the whirling dervish of ballistic balls and bodies soaring through the air like tumbleweed in a tornado. And if the sight wasn't enough, the children's shrieks of joy, yelps of fear, and reverberating crashes were loud enough to distract even Stan's most attentive students.

The memory of this scene, and the often-heard complaints like Alicia's wore at Stan's confidence in his teaching and choice of curricula. Now, standing in front of him, were a group of fifth-grade children who had fought his changes from nearly the very first day he came on the job. From the beginning he assumed that given time, the children would begin to enjoy learning skills and strategies through small sided-games and maybe even prefer it to playing large games of questionable educational value. But so far, he had received nothing but negative feedback. "Perhaps Ms. Hutcheson's style of teaching is appropriate for children of this age," thought Stan. "The principal, the other teachers, and the students all love her, and I'm the

outcast." Stan began to question his beliefs about teaching and whether all the frustration was worth it.

Stan looked at his watch and was relieved that the class was finally over. He signaled for the kids to gather around him. Normally, he used this time to reinforce what was taught throughout the day and to give the students an idea of what they will be doing next time. Today, however, the note that jogged his memory of past frustrations had made him just too exasperated to conduct a proper closure. He excused the kids. As they ambled toward the door, Alicia stopped and said, "I really had fun today, and my soccer coach says I'm getting better."

"That's great Alicia," replied Stan thankfully. "I thought it was fun, too." As the class disappeared into bustling hallway, Stan wrapped his fingers around the note in his pocket. Maybe he was over-reacting. Was it possible that his perception of the students was completely wrong? Perhaps the impact of his program was beginning to take hold, and the kids were beginning to enjoy working and learning in physical education class. Yes, he thought, I guess it wasn't such a bad day after all.

Feeling much better, Stan unfolded the note. His eyes immediately scanned to the bottom of the page which was dotted with child-written names that he recognized from his class. The 39 signatures at the bottom supported the penciled in statement at the top. It read, "SIGN HERE IF YOU THINK MR. PIERCE IS A BAD TEACHER, AND YOU WISH YOU HAD MS. HUTCHESON BACK."

Question Guide

1. What do we know (facts) about the characters in the story, Stan Pierce, Ms. Hutcheson, Alicia?

2. What do we know (facts) about the school, community?

3. What inferences can you make based on these facts?

4. What are the issues in this case?

5. Contrast the two teacher's curricular choices, what are their objectives? Why do you think they have made those choices? Are those objectives valid? What criteria should be used to evaluate these choices?

6. What is Stan's problem? What can he do? What action would you take if you were in his place?

APPENDIX I

Purpose and Guidelines for Case Discussions (Adapted from Levin, 1993)

[To be read and discussed prior to first case discussion]

Purpose

A case is a narrative account of teaching and learning. Cases contain several issues of teaching and learning to stimulate discussion and understanding of material. The purpose of cases, from my perspective, is the analyze, through group discussion, the information within the case and weigh it against what you already know. During the case discussions, you will have an opportunity to practice identifying issues or problems embedded within the case and suggest solutions that you might implement if you were in a similar situation. As you begin to draw conclusions, hopefully you will learn to connect theories, facts, and personal experiences together in you formulation of persuasive arguments.

Guidelines

1. It is important that all ideas and opinions are respected, and that everyone feels comfortable contributing to the discussion. This does not mean that you must agree with everyone or avoid helpful debates, but you must allow fellow students to state and defend their positions.

2. The cases contain complex issues which do not necessarily have "right" answers. As the discussion begins, try to withhold from making quick judgments or broad generalizations. Be open-minded to alternatives opinions of others. Although there is no one correct solution to the cases, some alternative solutions will of course be better than others. Use your

previous knowledge and information that you have gained from this course to evaluate proposed ideas and solutions.

3. It is preferred that everyone equally contributes to the discussion. This means that no one person should dominate or withdraw from the discussion. Please be clear in your statements and try to avoid "babbling on." However, it is encouraged that you talk through your questions and confusion because others may have the same thoughts.

4. This is a group discussion with a facilitator. Do not direct your responses to me, instead try to look at you classmates when speaking. Feel free to jump into the conversation at any time, just be polite and respectful.

5. Please be honest. State your opinions on the issues; do not try to say things that you think I want to hear. The goal is not to be non-controversial or politically correct. You may build on the ideas of others or disagree with them. You may also ask others to clarify their opinions or to respond to your questions.

6. We will probably not achieve consensus at the end of the case; this is normal. Keep an open mind throughout so you can learn from the discussion of others. You or I can also play "devils advocate" to stimulate discussion. Often, it works to assume the role of a character from the case and speak from his or her point of view. Remember, as with many things in life, you get out of it what you put into it.

APPENDIX J

Lesson Episode Reflections Scoring Rubric

All phrases in reflections were coded. The numbers of problems, solutions, concepts, and personal experiences were quantified and graphed. The following system was used for coding.

P=Problems	ST=Storytelling
S=Solutions	R=Redundant
C=Concepts	NR=Not Relevant
PE=Personal Experiences	O=Other

Problems were rather easy to spot in the reflections. They were often introduced with phrases such as "One problem I noticed was..." Problems included concerns raised about the lesson episode itself. Some students occasionally chose to comment on the lesson episode process, and these responses were considered not relevant. Below are examples of entries coded as problems.

"One problem with the exercise was time, or rather usage of it, one team got to bat twice and the other only once."

"One problem I noticed was that the teacher did not explain the rules at the beginning."

"When we were working on catching you performed a demonstration with Dave. However, you just tossed the ball instead of demonstrating how to catch."

"Another problem was that you clearly identified 'winners' and 'losers'"

Solutions were coded as suggestions made by the preservice teachers to alter what happened during the episodes. Sometimes solutions were suggested even though a problem was not identified. If a preservice teacher commented on a change (solution) that was made by the episode teacher and made a value judgment about that change then it was coded as a concept, not a solution. A solution had to be an original idea or approach to the problem. Below are examples of entries codes as solutions.

"I felt the teacher should have designated outfielders to play certain positions."

"The rules should have been changed so that no throwing at the runners was allowed."

"For this game to be successful I would spend more time working on the skills of lacrosse."

"I think the teacher should pick the teams instead of the students."

Concepts were facts or theories cited in reflections. They were usually used to bolster a particular position or make a value judgment about something that was done in the lesson episodes. The concepts were not evaluated for quality or even accuracy, instead they were accepted as the rationale that the preservice teachers' used to make decisions. Concepts were often phrased as belief statements that may or may not be accurate, but were a part of the assumptions held by the preservice teachers. The demonstration of course knowledge by identifying course content in the reflections were also considered concepts. Below are examples of entries coded as concepts.

"If you have some girls on the team, they will tend to be last."

"We were catching the ball without 'hugging' or using some of the steps to become an advanced player."

"The kids that were picked last might not want to play as much because they felt left out."

"We were taught three manipulative skills, catching, cradling and throwing."

"I believe that when cooperative and competitive tasks are mixed, the competitive spirit will ultimately alter the course of the task."

Personal experiences were also very easy to spot. Any references to a specific past event in the lives of the preservice teachers were counted. However, statements like "I never played this game before were considered vague and not counted. Below are examples of entries coded as personal experiences.

"The other day I spoke to a friend about P.E. and they said that (being picked last) is why people don't like P.E."

"One solution for this problem is something that I have learned in my experience as a coach, (lists solution)."

"I have never been taught lacrosse, but I have grown up watching it, so I basically learned about it myself."

Extra categories were created to code all phrases in the reflections. These categories were added for clarification and were not counted as reflective thinking.

Storytelling: Instances when reflection included a "play by play" description of what occurred but did not comment about it further

Ex: "We then commenced to play kickball."

Redundant: Any re-statement of a previous problem, solution, concept, or personal experience was not counted twice.

Not Relevant: Any statement not related to the lesson episodes

Other: Any statement that cannot be counted in another category

APPENDIX K

Flexibility and Connectedness Results

Flexibility: Average Number of Problems Identified in Episode Reflections Before and After Case Discussions

GROUP		
High Reflective (n=1)	Before (Live)	After (Video)
Episode 1	3	5
Episode 2	2	2
Episode 3	2	3
Total	7	10
Middle Reflective (n=3)		
Episode 1	1.7	1.0
Episode 2	1.0	2.0
Episode 3	0.3	2.3
Total	3	5.3
Low Reflective (n=8)		
Episode 1	1.8	2.3
Episode 2	0.8	1.1
Episode 3	0.5	1.3
Total	3.1	4.7

Flexibility: Average Number of Solutions Identified in Episode Reflections Before and After Case Discussions

GROUP		
High Reflective (n=1)	Before (Live)	After (Video)
Episode 1	2	2
Episode 2	1	3
Episode 3	4	5
Total	7	10
Middle Reflective (n=3)		
Episode 1	1.7	2.0
Episode 2	0.7	0.3
Episode 3	1.0	2.3
Total	3.4	4.6
Low Reflective (n=8)		
Episode 1	1.4	1.8
Episode 2	0.8	1.6
Episode 3	0.6	1.0
Total	2.8	4.4

Connectedness: Average Number of Concepts Identified in Episode Reflections Before and After Case Discussions

High Reflective (n=1)	Before (Live)	After (Video)
Episode 1	2	4
Episode 2	4	5
Episode 3	4	5
Total	10	14
Middle Reflective (n=3)		
Episode 1	1.7	4.3
Episode 2	4.7	5.0
Episode 3	2.3	2.3
Total	8.7	11.6
Low Reflective (n=8)		
Episode 1	2.5	3.4
Episode 2	3.5	4.4
Episode 3	2.1	4.1
Total	8.1	11.9

Connectedness: Average Number of Personal Experiences Identified in Episode Reflections Before and After Case Discussions

High Reflective (n=1)	Before (Live)	After (Video)
Episode 1	0	0
Episode 2	0	0
Episode 3	0	0
Total	0	0
Middle Reflective (n=3)		
Episode 1	1.7	0.7
Episode 2	0.3	0.0
Episode 3	0.7	1.3
Total	2.7	2.0
Low Reflective (n=8)		
Episode 1	0.2	0.3
Episode 2	0.3	0.1
Episode 3	0.1	0.3
Total	0.7	.07