STUDENT ACHIEVEMENT MOTIVATION: SINGLE OR MULTIPLE GOALS?

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By

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ABSTRACT

Two hundred senior high students completed a motivation questionnaire. Responses were subjected to a factor analysis which was followed by a series of Pearson correlations between the resultant factor scores and measures of positive and negative emotions, affect, strategy use, perceptions of the classroom environment and preference for challenge. Responses were also subjected to a cluster analysis followed by a series of between-group contrasts with each of the motivational constructs as the dependent variable and cluster membership as the independent variable. The majority of research investigating achievement motivation has used correlation and regression techniques. The use of factor analytic-correlational methodology has provided valuable information regarding the relationship between student motivation and subsequent behavior. Researchers who have used this method have focused on students as pursuing one of two goals - mastery or performance goals. Research (Seifert, 1995; Seifert & Bulcock, 1996) is now suggesting that this focus on correlation and regression techniques tends to ignore the possible interactions of goals. The use of cluster analysis has provided evidence that students are pursuing multiple goals and that these students engage in behaviors specific to their goal pursuits (Meece, 1994; Seifert, 1995). It was argued that evidence for the existence of subgroups of students within the performance orientation is apparent in earlier works examining students' pursuit of mastery and performance goals. Also suggested was the possibility that research on learned helplessness and performance impairment has provided more evidence for the existence of subgroups. The factor analytic-correlational

methodology was compared to the cluster analysis with between-groups contrasts to determine if there is agreement between these two methods. Results indicated that the two methodologies yield slightly different interpretations of the data. It was concluded that cluster analysis may provide additional insight into achievement goal theory.

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OVERVIEW OF STUDY

Most educators and researchers would agree that the ultimate goal of education is to promote active learning in students. If learning did occur through osmosis, as indicated in a popular poster known to students and teachers alike, educators would face little challenge in the classroom. Unfortunately, the learning process is not as simple as that - indeed, teaching does not guarantee learning.

Zimmerman (1990) described a group of students who "proactively seek out information when needed and take necessary steps to master it. When they encounter obstacles such as poor study conditions, confusing teachers, or abstruse text books, they find a way to succeed." Many educators might consider such a student, described by Zimmerman as being self-regulated, to be the ideal learner. Indeed, Corno and Mandinach (1983) described self-regulated learning as "critical to the onset and maintenance of student motivation in the classroom." It is Mackeachie's (1990) belief that nurturing motivation is as equally important as developing knowledge. Assuming this is so, the question is "What motivates students to pursue this type of learning?" - the key word being "motivates". Recent research on motivation has attempted to answer this question.

In an article tracing the history of motivational research, Weiner (1990) stated that research initially focused on subhuman behavior - it was "linked with the search for the motors of behavior and was associated with concepts such as instinct, drive, arousal, need

and energization" (p.617), and had little to no relevance to educational psychologists. In the 1960's, the study of motivation shifted from animal to human research. Researchers began to focus on cognitions and individual differences and motivation research became synonymous with achievement motivation research (Weiner, 1990).

In the past 20-30 years, researchers have turned to goal theory as the best explanation of students' achievement motivation and subsequent behavior. According to goal theory, the goals students pursue dictate their behaviors. As a result of research completed by Dweck (Dweck, 1975, 1986; Dweck and Leggett, 1988), it has been suggested that students pursue one of two goals - performance goals or learning goals.

Originally, Dweck was interested in studying the behavior of children who exhibit helplessness within the context of the classroom - that is, children who, in the face of prolonged failure, fail to make the connection between their response to a situation and the actual outcome (Dweck & Reppucci, 1973). Dweck wanted to see how these children differed from those who appeared to be unaffected by failure as was evident by their continued persistence. Thus, her earlier work focused on the effect of failure on performance. Dweck labeled children who gave up in the face of failure as "helpless" whereas children who remained unaffected by failure were described as persistent. As a result of her work, Dweck suggested that helpless children have a need to prove their ability to self and others which translates into a need to perform for others, thus they are said to pursue performance goals (Dweck, 1986). Persistent children were later labeled as mastery-oriented because of their

continued attempt to master tasks despite obstacles (Diener & Dweck, 1978). Mastery-oriented children's focus on effort as the cause of outcomes allows them to seek and pursue tasks that encourage or promote intellectual growth (Dweck, 1986). Thus, they are said to pursue learning goals.

Different labels have been given to the goals students pursue. Nicholls (Nicholls, 1984; Nicholls, Patashnick, & Nolen, 1985; Jagacinski & Nicholls, 1987; Duda & Nicholls, 1992) has identified three goals, or motivational orientations pursued by students - task orientation, ego orientation and work avoidance orientation. Students with a task orientation are interested in learning and wish to attain mastery, while those with an ego orientation wish to demonstrate high ability relative to others. A work avoidance goal is adopted by students who do not try to work hard. Other researchers (Pintrich & Garcia, 1991; Boggiano & Barrett, 1985) describe students as being either intrinsically motivated to learn (they wish to increase competence), or extrinsically motivated (they want to look good in the eyes of others).

Regardless of the labels given to goals, it is agreed that students either pursue learning for the sake of increasing competence, or a means of demonstrating competence. There are also those who choose not to work at all.

Subsequent research has established that different behaviors are associated with the different goals. These findings are in agreement with those of Dweck. Mastery (intrinsic/task) students believe that effort is the cause of success or failure (Dweck & Reppucci, 1973), enjoy challenging tasks (Diener & Dweck, 1978), engage in sophisticated

strategy use (Pintrich & De Groot, 1990), and experience positive affect (Diener & Dweck, 1978). Performance (extrinsic/ego) oriented students believe ability is the cause of success and failure (Diener & Dweck, 1978), respond to challenging tasks in a detrimental way (Dweck & Leggett, 1988), engage in less sophisticated strategy use (Pintrich & Garcia, 1991; Pintrich & DeGroot, 1990) and experience more negative affect (Diener & Dweck, 1978).

Although the bulk of research on achievement goal theory focuses on students as pursuing one of two mutually exclusive goals - mastery or performance goals, researchers are now suggesting that this approach ignores the possible interactions of goals (Meece, 1994; Seifert, 1995). For example, Pintrich and Garcia (1991) suggested that students may be pursuing both mastery and performance goals at the same time, thus engaging in intrinsic and extrinsic orientations for the same activity. They took this one step further and suggested that having both types of goals might be a positive thing.

Meece (Meece, 1994; Meece, Blumenfeld & Hoyle, 1988) has also suggested that students may be pursuing more than one goal simultaneously. Meece (1994) performed a cluster analysis on data collected by Meece, Blumenfeld and Hoyle (1988). Three groups of students were revealed - high mastery/low performance, high mastery/high performance, and low mastery/low performance.

Seifert (1995) also used a cluster analysis and identified three distinct groups of students also in pursuit of multiple goals - high mastery/high performance, high mastery/low performance, and moderate performance/low mastery. A second cluster analysis was

performed on the high mastery/high performance cluster resulting in the identification of two more groups of students who differed in their perceptions of ability.

Even though researchers are purposely exploring the existence of multiple goals (Pintrich & Garcia, 1991; Meece, 1994; Seifert, 1995), evidence for this was apparent in earlier works. Diener and Dweck (1978) identified a group of mastery children who they described as "overly action-oriented". These children's persistence was seen as maladaptive, indicative of a need to avoid failure and its implications. This led Diener and Dweck (1978) to conclude that there may be a subgroup of performance oriented children who may, given certain conditions, appear to be mastery oriented.

Additional evidence was provided by Swidler and Diener (1983) who identified a group of children described as overpersisting and characterized by low future success expectancies, external success attributions, avoidance of challenging tasks, and use of ineffective strategies. Similarly, Jagacinski and Nicholls (1987) identified a group of mastery students who, when faced with the possibility of being judged as less superior than others, experienced less competence and more negative affect. Elliot and Dweck (1988) described a group of performance oriented students who were able to masquerade as mastery oriented given that they avoided situations that presented them as low in ability relative to others. Evidencefor the existence of performance subgroups is found in the various operational definitions of a "performance" goal orientation as provided by Dweck (Dweck, 1975; Dweck & Reppucci, 1973), Nicholls (Duda & Nicholls, 1992) and Pintrich and Garcia (1991). Even

though the premise is the same, each definition is somewhat different. Implied by these differences is the possibility that different types of "performance" oriented learners are being identified. Dweck's (Elliot & Dweck, 1988) description of performance students as being interested in gaining favorable judgements about competency while attempting to avoid negative ones, might be indicative of a one group of students striving to please others or appear smart and another group interested in avoiding failure or looking stupid. Nicholls' (Duda & Nicholls, 1992) definition is suggestive of a group of students primarily interested in competing against others, while Pintrich and Garcia(1991) suggested that "performance", or "extrinsically motivated" students might have multiple extrinsic reasons for learning.

More evidence for the existence of subgroups has been provided by research on learned helplessness and performance impairment. As a result of this work, a noncontingency and ego defensive hypothesis has emerged. Supporters of the noncontingency hypothesis argue that performance deficits emerge because of an individual's belief that outcomes are independent of their responses (Dweck & Reppucci, 1973; Abramson, Seligman & Teasdale, 1978). Supporters of the ego defensive hypothesis argue that an individual's attempt to protect self-worth in the face of failure results in performance impairment (Frankel & Snyder, 1978; Covington, 1984).

Seifert (1995) has suggested that by focusing on the nature of the uncontrollability attributions made under performance impairment conditions, both hypotheses offer explanations of learned helplessness. Students exhibiting learned helplessness fail to see the

connection between their responses and the outcome because of a perceived lack of ability, and are experiencing failure acceptance. Such a group, as was identified by Diener and Dweck (1978, experiment 1), provides evidence for the noncontingency hypothesis. On the other hand, Diener and Dweck (1978) also identified a group of students who withdrew effort in situations where failure was most likely to occur in an attempt to protect self-worth. These students, who are best described as failure avoidance, support the ego defensive hypothesis.

The more recent studies providing evidence for the existence of subgroups of students within the mastery and performance orientations suggests that earlier research has oversimplified the relationship between student motivation and behavior. In order to understand the complexities of student behavior, it is necessary to perform further studies examining these groups of students pursuing multiple goals. The majority of research on achievement motivation has used correlation and regression techniques to determine how scores on each motivational goal scale affects scores on other construct scales (e.g., Nicholls, Patashnick & Nolen, 1985; Meece, Blumenfeld & Hoyle, 1988; Nolen, 1988; Nolen & Haladyna, 1990; Duda & Nicholls, 1992). Unfortunately, correlation and regression techniques overlook the possible interactions of goals.

In an attempt to explore this further, researchers examining the existence of multiple goals have used cluster analysis to determine whether or not these two methodologies would lead to different interpretations of the same data (Meece, 1994; Seifert, 1995). For example,

a low to zero correlation between a goal (performance) and another construct (competence) may be interpreted as meaning that there is no relationship between the two. However, it is possible that there is more than one group of students lumped under a specific goal orientation (performance) with one group experiencing the construct (competency) whereas the other group may not. If one wishes to provide a more accurate picture of the different goals students pursue and the associated behaviors, it is important to avoid overlooking these possibilities. For example, research has suggested that performance students engage in less sophisticated strategy use (Nolen,1988; Diener & Dweck, 1978), and are not as interested in improving competence. However, Meece (1994) identified high performance students who sought out and used effective strategies in order to get good grades necessary to prove their ability, and Seifert (1995) identified a group of high performance students who wished to increase their competence despite their desire to look smart.

There is little doubt that students do pursue performance and mastery goals; however, failing to explore the possibility that there are subgroups of students within the performance orientation provides an unfair representation of what is recognized as a complex issue. As discussed, evidence for the existence of subgroups of performance oriented students emerged as far back as the 1970's (Diener & Dweck, 1978). Also, even though a student with a mastery orientation remains accepted as the ideal learner, the pursuit of other goals does not necessarily translate into maladaptive patterns of behavior in the classroom. Blumenfeld (1992) suggested that it is better to learn in an attempt to please others than not at all. Based on such reasoning, examination of subgroups of performance oriented students

might actually show that they do not necessarily display the entire realm of negative characteristics previously identified by earlier studies.

Undoubtedly, correlation and regression techniques have provided valuable information regarding the goals students pursue and the characteristics associated with different goals. However, as discussed, Meece (1994) and Seifert (1995) have demonstrated that a cluster analysis not only provides additional information about the interaction of goals overlooked by correlation and regression techniques, but also provides different interpretations for the same data. Therefore, in addition to a factor analysis, a cluster analysis was performed on the data collected.

It was expected that the data collected for this study would support previous research investigating multiple goal pursuit. Thus, one purpose of this paper is to identify groups of students pursuing different goals and to examine the different characteristics of each group. Students' responses to a series of goal items were factor analyzed and resulting factor scores were correlated to a number of motivational and cognitive constructs. This same data was also subjected to a cluster analysis to identify groups of students pursuing different goals. This was followed by between-groups contrasts to identify differences on the motivational and cognitive constructs. The results of both methodologies were compared to determine if they would produce different conclusions.

Given that mastery orientated students have been identified by researchers regardless of the methodology used, this study expects to produce evidence supporting the existence of a group of mastery learners who strive to acquire knowledge and increase competence

despite obstacles. As argued, proof for the existence of subgroups of performance students has been provided by researchers investigating mastery and performance goal pursuits. Thus, drawing from this research, performance subgroups were expected to be identified in this study that have been previously labeled as performance oriented. It is hoped that the cluster analysis will provide additional information regarding the interaction of these goals.

LITERATURE REVIEW

Goal theory has emerged as the prevalent explanation of students' achievement motivation and subsequent behavior. Goal theory posits that students' motivation and behavior are related to the goals they pursue - each goal is associated with specific patterns of behaviors. Dweck was one of the first researchers to study what is now known as goal theory (Diener & Dweck, 1978, 1980; Dweck, 1975, 1986; Dweck & Leggett, 1988). Originally, Dweck's work in the area resulted from her attempts to analyze helpless response patterns in children. Prior to Dweck's work in the 1970's, *learned helplessness* was a term coined by Seligman and Maier (1967) to explain a phenomenon where animals pretreated with unavoidable and inescapable shock later failed to escape shock despite being placed in a new environment where escape was possible.

Dweck and Reppucci (1973) found that two children who received exactly the same number of sequence of success and failure trials on an assigned task react differently in the face of failure. Dweck and Reppucci (1973) demonstrated that similar to Seligman's animals, there exists a group of "helpless" children who give up in the face of an aversive event (failure at a task) despite being as capable of achieving success as other children who persevere. It was concluded that the helpless children in this study failed because of a perceived lack of ability, attributing failure to uncontrollable, external factors (Dweck & Reppucci, 1973). Also, helpless children placed less emphasis on effort as being instrumental in determining success than did their persistent peers (Dweck & Reppucci, 1973).

Dweck was interested in the lack of effort attributions made by these helpless children. She conducted an investigation to determine if attribution retraining - teaching learned helpless children to take responsibility for failure by attributing it to lack of effort, as opposed to ability - would help these children deal more effectively with failure (Dweck, 1975). Prior to attribution retraining, persistent students strived for success despite the threat of failure, unlike the helpless students who had a tendency to avoid failure despite the potential of success. Dweck found that helpless children who received attribution retraining maintained or improved their performance, and thus suggested that the way a child views an aversive event determines how he reacts to it (Dweck, 1975). Children who received attribution retraining learned that failure was a result of lack of motivation, or effort, and therefore became more persistent, exerting more effort in an attempt to obtain a goal. According to their teachers, these children began to work harder and developed a new attitude towards failure as was evident in their increased persistence with new material.

As a result of her research on what is now labeled as goal theory, Dweck has suggested that students pursue one of two goals - learning goals, or performance goals. Students previously described as persistent have a learning goal orientation and are concerned with increasing competence or understanding. Students exhibiting "helpless" response patterns to failure have a performance goal orientation and wish to demonstrate their competence in order to gain favorable judgements from others. As discussed earlier, these goals have been identified and given different labels by other researchers.

Despite the different labels given to the goals students pursue, there remains a common element - students are identified as belonging to one of two groups - individuals who are interested in learning as a means to itself (who wish to increase competence), or individuals who pursue learning as a means to an end (gaining favorable judgement by others for having demonstrated competence).

Characteristics of Learning and Performance Oriented Students

Research on goal theory has continued with the hopes of understanding how and why "helpless" or performance oriented students differ from their learning oriented peers despite both groups being equal in actual ability. Research has shown that the goals students pursue have behavioral consequences. Students with a learning orientation (task or intrinsic orientation) demonstrate adaptive mastery response patterns, whereas performance oriented (ego or extrinsically oriented) students engage in maladaptive "helpless" response patterns (Dweck & Leggett, 1988). Learning oriented students' response patterns result from their focus on progress and mastery. Response patterns associated with performance goals result from students' concern about their ability level. Described below are the findings of various researchers who have attempted to define the characteristics of these two distinct groups of learners.

Perceptions of effort and ability

Children pursuing learning goals recognize the role of effort in mastering new skills. They believe that effort is the cause of success and failure (Dweck & Leggett, 1988),

therefore taking responsibility for their actions. Diener and Dweck (1978) monitored the verbalizations of performance and learning children as they encountered difficult tasks. Learning children made such statements as "The harder it gets, the harder I need to try", thus reflecting that these students see the connection between effort and potential success.

Unfortunately, children with maladaptive behavior patterns hold maladaptive views of effort. Dweck (Dweck & Reppucci, 1973; Diener & Dweck, 1978) has consistently established that performance oriented students fail to take responsibility for the outcomes of their actions when they encounter failure. They attribute failure to low ability, or to external factors. Fortunately, when taught to take responsibility for failure by attributing it to lack of effort, these children are less likely to suffer from performance impairment resulting from failure at future tasks (Dweck, 1975). Performance students' perceptions of success are also at risk. Diener and Dweck (1980) classified students in grades four, five and six as helpless (performance) or mastery (learning) oriented. All children were asked to complete a series of problems on which they succeeded followed by a series of problems on which they failed. It was found that relative to mastery children, helpless children underestimated the number of problems they solved correctly, and acknowledged their successes as less successful than those experienced by the mastery children. Although performance children did not view their successes as predictive of future successes, failure was perceived as predictive of future failures. Mastery children were undaunted by failure. These children believed that if given a second chance, they would succeed at a problem they

had previously failed (Diener & Dweck, 1980). They maintained a positive future outlook, viewed failure as a learning experience and pushed on to new challenges.

It appears that the ultimate goal for students pursuing performance goals is to achieve success with as little effort as possible. Success resulting from little to no effort would prove to them and to others that they are quite smart. Of course, it seems logical to assume that when a performance oriented child believes he has exerted more effort than another child yet both have succeeded, he is likely to think that he is not as smart as his peer. Jagacinski & Nicholls (1987) demonstrated this. When individuals were involved in activities in which ego involving (performance goal) and social comparison information was available, knowledge that success was achieved through greater effort than others used led to reduced feelings of competence.

Children who pursue performance goals equate ability with competency and are overly concerned with their ability level. As a result, one would expect that these students' ability perceptions can have an adverse affect on their behavior. Dweck (1986) suggested that performance children who believe they are of high ability will behave in a mastery oriented way; however, if they believe they have low ability, they behave in a helpless manner.

Elliot and Dweck (1988) conducted a study to examine behavior patterns resulting from goals (performance or learning) and perceptions of ability (high or low). They manipulated the goal value and ability level to form four experimental conditions. Children assigned to the performance condition who believed that their current skill level was low responded to feedback about mistakes in a learned helpless manner. They attributed failure to

uncontrollable causes and made ability attributions for failure. They also did not try to overcome mistakes and expressed negative affect. Children in the performance condition who believed that their skill level was high responded to obstacles in a mastery oriented way; however, their desire to maintain the appearance of competency to others became evident when they refused to increase their skills on a task entailing public mistakes. Children assigned to the mastery condition sought to increase competence regardless of their ability level. Also, they did not avoid tasks with public errors.

Response to challenge

Perhaps as a result of their emphasis on looking smart to others, students with performance goal orientations wish to avoid difficult tasks that might result in failure. Indeed, these students believe that they will fail at challenging tasks (Dweck & Leggett, 1988). As mentioned earlier, Elliot and Dweck (1988) found that even performance oriented students with high perceptions of their ability avoid challenging tasks when the outcome is made known to others.

Learning students view difficult tasks as challenges to be attempted (Dweck & Leggett, 1988; Elliot & Dweck, 1988). As noted by Diener and Dweck (1978), one child responded to failure problems with "I love a challenge!" before proceeding to complete the task. Unlike performance students, and because of their positive outlook on the role of effort, learning students use obstacles as cues to increase their effort (Ames, 1984; Ames, Ames & Felker, 1977; Nicholls, 1984). In fact, learning children often improve their performance in the face of obstacles.

View of intelligence

Dweck (Dweck, 1986; Dweck & Leggett, 1988) has suggested that children are more likely to adopt a learning orientation when they believe they can improve their competence by exerting effort. This belief implies an incremental view of intelligence - that intelligence is malleable. As discussed earlier, learning oriented children believe in the importance of investing effort when faced with challenging tasks. They attribute success and failure to effort and believe that effort leads to acquisition of knowledge. Children pursuing mastery goals equate effort with ability and high effort maximizes feelings of competency, and failure at tasks does not imply low competency. Learning children believe that greater effort or different approaches are needed to ensure future success.

Children who adopt performance goals are more likely to view their ability as stable traits (Dweck & Leggett, 1988). Because they fail to see the role effort plays in increasing competency, they view competency, or intelligence, as a fixed trait over which they are powerless to change. For performance students, higher effort implies lower ability given equal outcomes (Jagacinski & Nicholls, 1987). Their perceived intelligence is determined by their perception of ability which is not based on effort. Whether or not they perceive their ability level as high or low, the bottom line is that performance oriented children are unwilling to risk failure because of their underlying fear of appearing stupid to others. Perhaps if they were able to see the connection between effort and intelligence, this would not be so. Needless to say, these students are at great risk for developing helpless, unhealthy attitudes towards learning new material that is perceived as difficult.

Learning strategies

Performance and learning oriented students also differ in their choice of learning strategies. The bulk of the research has focused on two types of strategies: deep-processing strategies and learning strategies. Deep-processing strategies refer to strategies that promote learning. Students using these strategies discriminate important information from unimportant information, try to find out how new information fits into existing information, and monitor comprehension (Entwhistle & Ramsden (1983) cited in Nolen, 1988). Surface level strategies are less effective in promoting learning. They include repeated reading of information, memorization without understanding, and rehearsal of information (Entwhistle & Ramsden (1983) cited in Nolen, 1988).

Nolen (1988) explored the relationship among individual differences in three motivational orientations (task orientation, ego orientation, and work avoidance), and the valuing and use of study strategies by eighth graders reading expository passages. Nolen met with the students on two occasions. First, students were asked to read passages and answer questions as if they really wanted to learn and remember the material. Four to six weeks later, students were given another passage and were asked to study it until they could explain it to someone else. The students' overt studying behavior was recorded. It was found that although task (learning) oriented students used both types of study strategies, they were more likely to use deep-processing strategies than surface strategies. An ego (performance) orientation was positively related to the usage of surface strategies, whereas a work avoidance orientation was negatively related to both types of strategies. A path analysis

indicated that task orientation predicted spontaneous use of deep processing strategies and this prediction held over a period of four to six weeks.

The above results have been consistently supported by other researchers. Meece, Blumenfeld, and Hoyle (1988) examined the learning strategies used by fifth and sixth grade students while working on science activities. After completing a survey assessing their goal orientation, students were observed during six science classes during which self-report measures were used to collect information on their cognitive-engagement patterns. Results showed that students with a task (learning) orientation reported use of more active cognitive engagement (deep-processing strategies) than the ego oriented and work avoidance students.

The results of a study completed by Stipek and Kowalski (1989) implied that students who de-emphasized the role of effort might have benefitted from task-oriented instructions. Considering that performance oriented children do not value effort, it would be safe to conclude that these children might best benefit from such a strategy. After classifying fifth and sixth grade students as high or low in effort, Stipek and Kowalski (1989) had the children attempt 2-choice discrimination learning tasks. Half of the students received task-oriented instructions and half received performance oriented instructions. Stipek and Kowalski found that low-effort students who received task-oriented instructions used more effective strategies than those in the performance-oriented condition.

Classroom environment

Research investigating the impact of classroom structure upon student behavior has suggested that teachers have the opportunity to influence students' task orientation (Ames

& Ames,1984; Ames, 1984; Ames & Archer, 1988; Ames, 1992; Nolen & Haladyna, 1990). Ames & Ames (1984) suggested that teachers are in a position to establish classroom environments such that student mastery of specific tasks is promoted. Ames and Ames (1984) examined how specific goals and values affect student and teacher perceptions, attributions, self-evaluations, and beliefs about strategies of action. They described student motivation according to how students relate to competitive, cooperative and individualistic classroom goal structures. In competitive goal structures students work against one another and social comparison occurs. In cooperative goal structures, the probability of one student achieving an award is enhanced by the presence of other students because each student shares responsibility for the outcome. In individualistic goal structures, the probability of achieving awards is neither enhanced nor diminished by the presence of others.

Three motivational systems as elicited by specific goals were described: ability-evaluative (competitive), task-mastery (individualistic), and moral responsibility (cooperative) (Ames & Ames, 1984). Students in the ability-evaluative system form goals on the basis of competition with other students and engage in social comparison. Students in the task-mastery system set their own goals without being concerned with what the other kids are doing. Goals set within the moral responsibility system are shared by a set of individuals. Their focus of attention is group performance, therefore these students engage in self-group comparison. A moral situation is created to the extent that these students feel responsible to help and encourage others to do well on their parts of the task.

Ames and Ames (1984) suggested that teachers are in a position to establish classroom environments promoting student mastery of specific tasks. Nolen and Haladyna (1990) provided evidence supporting this proposal. They had high school science students answer a questionnaire at the beginning and end of the school year. Nolen and Haladyna (1990) wanted to test their model that suggested that task orientation interacts with perception of teacher goals to influence students' task orientation and value beliefs. It was concluded that students' task orientations were positively influenced by students' beliefs that teachers wanted them to think independently and to thoroughly master the material.

Ames (1984) conducted a study to determine if competitive or individualistic goal structures elicit achievement cognitions associated with helpless (performance) or mastery (learning) oriented students. Fifth and sixth grade students performed at a high (4/6 puzzles solved the first trial, and 5/6 were solved on the second trial), or low (1/6 puzzles solved first trial and 2/6 solved on the second trial) level of difficulty on a novel task within a cooperative or individualistic goal structure. They found that children made more ability attributions in the competitive condition and that children in the individualistic condition displayed a mastery orientation.

Ames (1992) also examined the relationship between classroom learning environments and achievement goal theory of motivation. The result was a model of classroom structure and instructional strategies which she believed would promote a mastery goal orientation in students. Such a classroom would encourage challenging tasks designed for novelty,

variety, diversity and student interest that focus on meaningful aspects of learning activities. Students would be taught to establish short-term, self-referenced goals, and to develop and use effective learning strategies. Teachers would encourage students to help in the decision-making process, and provide real choices where decisions are based on effort. Students would be given opportunity to develop responsibility and independence. They would be supported in the development and use of self-management and monitoring skills. Evaluation would focus on individual improvement, progress and mastery, and it would be private. Students' effort would be recognized, opportunity for improvement would be provided, and mistakes would be viewed as part of the learning process.

Assuming such a classroom environment could promote a mastery orientation, one would expect students who already exhibit learning goals to thrive in such a class. However, the question arises as to whether or not such an environment would be sufficient in "converting" students with performance goals to the other side. Would these students' mastery goals generalize to other classrooms? Perhaps this is a long term process that would succeed at promoting mastery orientations in the majority of students despite their previous orientations only once it becomes part of the school philosophy.

Affect

In an attempt to explore the affect of children classified as helpless or mastery oriented, Diener and Dweck (1978, experiment 2) asked fifth and sixth grade subjects to verbalize what they were thinking as they failed in their attempts at discrimination tasks. These children's statements were monitored to determine if they experienced positive or negative

affect. Statements indicating that a task was enjoyable and that the child had a desire to continue despite failure was indicative of positive affect. Statements indicating boredom, anxiety and a desire to escape were reflective of negative affect. Diener and Dweck (1978) found that one-third of mastery oriented children continued expressing positive affect despite experiencing failure, whereas two-thirds of the helpless children voiced negative affect. Considering research has shown that, unlike performance oriented children, mastery children enjoy challenges and perceive failure as an inevitable part of learning, this finding is not surprising.

Jagacinski and Nicholls (1987) provided evidence showing how ego-involved (performance oriented) and task-involved (learning oriented) students' feelings of competence and related affect differ. The main purpose of their study was to clarify the impact of social comparison information on feelings of competence and affect. Introductory psychology student were asked to answer a questionnaire. On the first page, students were asked either to name activities they enjoyed doing for its own sake (task-involving activities), or to name tasks they felt it was important to be outstanding at (ego-involving activities). Students were also asked to explain why they enjoyed the activity, or why it was important to be outstanding at the activity.

On the second page of the booklet, students in the task-involved condition were asked to imagine they had selected a new project in their selected activity. Students in the ego-involved condition were asked to imagine they had been assigned a new project in their designated activity. In high-effort scenarios, the project was described as challenging, and

students were asked to imagine that they had mastered the task with much effort. Low effort scenarios described the project as not at all challenging, mastered with little effort. Half of the students in each condition did not receive social comparison information. Half of the students received social comparison information. Students in high-effort scenarios were told by the researchers that other people did not find the task challenging and exerted less effort than them, and students in the low-effort scenarios were told that other people found the task challenging and exerted more effort than them. After completing the above questions and receiving appropriate instructions, all students were asked to answer questions measuring their reactions to the situation.

Students assigned to the ego-involved , high-effort condition were significantly impacted by the availability of social comparison information. These students experienced lower feelings of competence and increased feelings of guilt and embarrassment, whereas those assigned to the ego-involved, low-effort condition felt more competent when told that others had used high effort. When social comparison information was not provided, students assigned to the ego-involved, high-effort condition experienced more positive affect and less guilt than those in the ego-involved, low-effort condition. The availability of social comparison information had little impact on students assigned to the task-involved conditions.

A second study was completed using the same activity, only these students received a three-page questionnaire (Jagacinski & Nicholls, 1987). Page one was the same as in study one, whereas page two used four scenarios from study one that did not involve social

comparison information. Social comparison information was contained on the third page. Information on the third page informed students in the low-effort condition that other people found the task challenging and needed more effort, whereas high effort students were informed that other did not find the tasks challenging and needed less effort.

Jagacinski and Nicholls (1987) found that without social comparison information, competence and positive affect were judged higher for task and ego-involving contexts when students were asked to imagine succeeding with high rather than low effort. When social comparison information was made available, students in ego-involving contexts imagining success with high effort had decreased perceived competence and increased negative affect. Social comparison information did not alter judgements of competence or affect in task-involving contexts; however, when social comparison information was made highly salient in the second study that others applied low effort, students in the task-involving context, as well as those in the ego-involving context, anticipated feeling less competent, and reported fewer positive affect and more negative affect.

Seifert (1995) constructed a motivational questionnaire to assess perceived ability, negative and positive emotions, goal orientation, success and failure attributions, self-worth, preference for challenge and strategy use. He found, that, consistent with prior research, students with higher mastery scores experienced more positive emotions and less negative emotions. Higher performance orientation scores were associated with a greater frequency of positive emotions, but were not associated with negative emotion.

Seifert (1996*a*) further examined the relationship of emotions to goal pursuit by reanalyzing data collected in the above study. He wanted to explore the possibility that emotions drive goal pursuit. If successful, this would contradict Dweck and Leggett (1988) who presented a model specifying how goals set up different patterns suggesting that affect is an outcome of goal pursuit. Seifert (1996*a*) put forth two structural models with the first model presenting emotions as a by-product of goal orientation, and the second model presenting goal orientation as a by-product of emotions. It was speculated that if emotions are good predictors of goal pursuits, then there would be a good fit to the data for model 2 but not model 1. The data did not fit model 1, but did fit model 2 (Seifert, 1996*a*). Feelings of competency were predictive of a mastery orientation, whereas feelings of belonging and negative affect were predictive of a performance orientation.

Seifert (1996*a*) argued that it is quite logical to expect that perceptions of competency might be a needed prerequisite for achieving mastery. He suggested that if performance orientation is viewed as a defensive mechanism, then students experiencing anxiety and frustration are inclined to adopt the goal of trying to look smart or outperform others. Seifert also suggested that students might be pursuing these performance goals because of a need to feel important to the teachers and classmates - a feeling of belonging might very well be a condition necessary for supporting these pursuits.

Multiple Goals

Until recently, research on achievement goal theory has suggested that students pursue one of two mutually exclusive goals - mastery or performance goals. Still, the possibility of the existence of subgroups of children who fail to fit perfectly into either one of these two groups has emerged from this research suggesting that this approach to goal theory might be too simplistic. Shortly after research investigating the phenomenon of mastery and performance orientation began, the results of a study by Diener and Dweck (1978) provided evidence for the possible existence of a subgroup of "helpless" children.

Although Diener and Dweck (1978) argued that the continued task involvement of mastery oriented children in the face of failure appears to be more adaptive than the withdrawal of effort of the helpless children, they also acknowledged that there may be a need for further investigation into a subgroup of mastery oriented children who are "overly action oriented". Such a group of children may be similar to helpless children in their perceptions of failure and usage of appropriate remedies (Diener & Dweck, 1978). It is possible, however, that contrary to Diener and Dweck's (1978) proposal, this might be indicative of a subgroup of performance oriented children who give the outward, misleading appearance of being mastery oriented. Such children may persist out of a fear of experiencing failure and its implications. Perhaps these children believe that withdrawing effort is not only an admission of failure, but also makes them look dumb.

Swidler and Diener (1983) conducted a study to determine if there exists a group of overpersisters who are considered mastery oriented because of their persistence, but who

actually demonstrate characteristics of helplessness. Fourth, fifth and sixth graders, identified as mastery or performance oriented, were given four experimental tasks over a one month period. The first task provided the children with failure and success attributions and an expectancy statement for future success. The second task identified children who gave up, persisted, or overpersisted in the face of difficulty. For the third task, children were allowed to choose the level of difficulty for a given set of problems; they were also asked to state their expectations for future successes. Finally, for the fourth task, children made attributions for success. The results of this study identified a group of overpersisting children who had low expectancies for future success, avoided moderately difficult tasks and made external success attributions. These children also persisted in the use of ineffective strategies (Swidler & Diener, 1983).

Elliot and Dweck (1988) conducted an experimental study in which grade five students were assigned to conditions where the goal value (learning vs performance) and perceived ability (high vs low) was manipulated. When a performance goal was highlighted, children who believed their skills were high responded in a mastery oriented way in the face of obstacles; however, they did not choose to attempt tasks entailing public mistakes. This suggests the existence of a subgroup of performance oriented students who may be able to masquerade as mastery oriented individuals as long as they can avoid situation where their ability levels can be judged as low by others.

As discussed earlier, Jagacinski and Nicholls (1987) conducted a study investigating the impact of social comparison information on the feelings of competence and related affect

among task(mastery)- and ego(performance)- involved students. They found that when social comparison information was made highly salient it could alter the feelings and affect among task involved students, causing them to feel less competent and to experience more negative affect. This information supports Swidler and Diener's (1983) findings , also suggesting the existence a subgroup of performance oriented student who are incorrectly grouped as mastery oriented.

Researchers are now exploring the possibility that more than one goal may be simultaneously functioning. Meece (1994) reanalyzed data she had collected a few years earlier (Meece, Blumenfeld, & Hoyle, 1988) for the purpose of exploring that possibility. A reanalysis of this data collected supported the possibility that students pursue multiple goals (Meece, 1994). A cluster analysis of this data revealed three groups of students; a high task-mastery/low ego-social group, a high task-mastery/high ego-social group, and a low task-mastery/low social-ego group. The high task/low ego students reported the most positive ability perceptions and attitudes toward learning. There was no significant difference between the high task/high ego and the low task/low ego students' ability perceptions. The low task/low ego group was less likely to use deep processing strategies. Even though the high task/low ego and high task/high ego groups reported using deep processing and surface processing strategies, the high task/low ego group reported the lowest use of superficial engagement.

Researchers are now suggesting that performance and mastery goals may co-exist, and even be quite productive (Pintrich & Garcia, 1991; Blumenfeld, 1992). College

undergraduates answered a questionnaire so that Pintrich and Garcia (1991) could examine how multiple goals affect students' cognition and behavior. After obtaining task-mastery and performance scores, both goal orientations were split three ways - a quartile split - and high, medium and low categories of each scale were crossed to form nine groups. These groups of students differed in areas of reported strategy use, self-efficacy and anxiety. The high mastery/low performance group reported the highest use of deep processing strategies and the low mastery/low performance reported the lowest. Self-efficacy was reported highest by the high mastery/high performance group, and the lowest by the low mastery/low performance group. Test anxiety was lowest (though not significantly) for students in the high mastery/low performance group and highest for students in the high mastery/high performance group.

Pintrich and Garcia (1991) found that increased mastery orientation led to an increased use of deep processing strategies, and that a mastery orientation has an indirect effect on efficacy beliefs and processing strategies. Students with high levels of performance orientations looked more similar to one another whether or not they had a high or low level of mastery orientation. Students with a high performance orientation also showed higher levels of deep processing than students low in mastery and performance orientations. Although higher levels of performance orientation reduced the positive effects of mastery orientation and increased levels of anxiety, it still led to better cognitive engagement and positive self-efficacy than if students were less concerned about their grades (Pintrich & Garcia, 1991). The authors suggested that if one does not pursue mastery goals, it would

still be beneficial for the individual to be concerned with performance goals (getting good grades) rather than showing no concern for learning at all (low mastery/low performance).

Seifert (1995) had grade five students answer a questionnaire in order to explore the possibility that students pursue multiple goals, and to examine different characteristics of these groups. The data were first subjected to a factor analysis followed by calculations of zero-order correlations. A reanalysis of the data using a cluster analysis resulted in the identification of three distinct groups - a high mastery/high performance group, a high mastery/low performance group, and a moderate performance/low mastery group. The high mastery/high performance and high mastery/low performance groups appeared to behave similarly: they were more likely to take credit for success and did not differ on measures of ability perceptions, preference for challenge, self-worth and positive affect. However, these groups did differ in that the high mastery/low performance group was less likely to attribute failure to uncontrollable factors. Also, the high mastery/high performance group stopped behaving in a mastery way when faced with failure. Students in the moderate performance/low mastery group were more likely to attribute failure to uncontrollable factors than the high mastery/high performance group, and had a low perception of ability. They also experienced less positive affect and reported lower levels of self-worth than the high mastery/high performance group.

A further cluster analysis of the scores on the perceptions of ability and self-worth scales for the high mastery/high performance group identified two subgroups within this group. The first group, high mastery/high performance students with high ability perceptions, were

described as confident, capable and enjoying the school experience. The second group, high mastery/high performance students with low ability perceptions, appeared to be similar to the moderate performance/low mastery group. These students also had a lower sense of self-worth, lower self-efficacy, did not take credit for success, blamed failure on external factors, and reported a lower frequency of positive emotions. Although high mastery/high performance/low ability students expressed a desire to pursue mastery and performance goals, they behaved in a way less productive than high mastery/high performance/high ability students. One might say that high mastery/high performance/low ability students are at risk of adopting moderate performance/low mastery goals.

Research on learned helplessness and performance impairment provides further evidence for the existence of these subgroups. As a result of this research, a noncontingency and an ego defensive hypothesis have emerged in an attempt to explain performance impairment. Dweck and Reppucci (1973) wished to determine how children who give up in the face of failure (helpless) differ from those who do not (persistent). They concluded that helpless children exhibiting performance impairment attributed failure to external, uncontrollable factors -referred to as the noncontingency hypothesis. Researchers supporting this hypothesis argue that performance deficits occur in individuals who believe that outcomes are not related to/ or are independent of responses (Dweck & Reppucci, 1973; Abramson, Seligman & Teasdale, 1978). Supporters of the ego defensive hypothesis argue that performance deficits result from individuals' attempts to protect their self-worth in the face of failure (Frankel & Snyder, 1978; Covington, 1984; Miller, 1986).

Frankel and Snyder (1978) attempted to determine which explanation - learned helplessness or egotism - best explains performance impairment. College students were asked to complete two tasks. These students were given either solvable or unsolvable discrimination problems for the first task and then were asked to complete moderately or highly difficult problems for the second task. Learned helplessness theory would predict that students exposed to unsolvable problems in the first task would give up when asked to solve highly difficult problems; however, the results of this study contradicted this hypothesis. When presented with moderately difficult problems, subjects who attempted unsolvable problems performed worse than those who previously completed solvable problems. Telling subjects in the unsolvable problems condition that the new problems were highly difficult improved performance. For example, these students took less time to solve their problems and solved more problems than their peers who had been told that the problems were moderately difficult.

Frankel and Snyder (1978) argued that because success is not expected for problems of extreme difficulty, failure resulting from attempts to complete these problems would not pose a threat to these students' sense of self-worth. Failure would be expected for anyone attempting these problems regardless of their ability level. However, problems labeled as moderately difficult neither assume success or failure. Because failure on these items could not be solely attributed to difficulty, it would be attributed to low ability. To avoid this implication, students chose to avoid trying, thus protecting their self-worth by attributing failure to lack of effort (egotism theory).

According to Covington (1984), ability perceptions are primary activators of achievement behavior. In an article describing his self-worth theory of achievement motivation, Covington explained that ability is valued because of its perceived importance to success, and because it is equated with worth (Covington, 1984). Effort may also be seen as a major source of reward, but only when learning for its own sake is the goal. Covington described effort as a "double-edged sword". One exerts effort to avoid guilt associated with not trying; however, if one should try hard and still fail, one might suffer from feelings of humiliation and make low ability attributions. Because ability is equated with self-worth, if success becomes unlikely, one would rather experience the guilt associated with not trying than suffer from the humiliation of incompetency associated with lack of ability.

Covington's self-worth paradigm presents a failure avoidance dynamic. Students may avoid incompetency-linked aspects of failure by choosing to avoid trying (Covington & Omelich, 1984) or by engaging in other failure avoiding tactics that may minimize the shame associated with incompetency. For example, they might set unrealistically high goals or procrastinate so that the resultant failure can be attributed to external causes. Students can set standards for success at modest levels. They may also avoid failure by succeeding; however, these students remain doubtful of their abilities, and if and when they do fail at a task, it can double the consequences since it occurs despite high effort.

Supporters of both the noncontingency and ego defensive hypotheses have attempted to determine which theory best explains learned helplessness (Frankel & Snyder, 1978; Kofta & Sedek, 1989; Miller, 1986). In an attempt to determine which hypothesis - egotism

or noncontingency - best explains learned helplessness, Kofta and Sedek (1989) designed two kinds of helplessness training. In group one, noncontingent feedback was delivered during the course of discrimination problems, but no information about failure on problems was provided. In group two, noncontingent feedback was accompanied by feedback about repeated failure on problems. It was argued that if the noncontingency model was correct, there would be no differences in performance deficits in both groups. If the egotism model was correct, greater performance deficits was expected for group two because information regarding failure arouses one's need to protect self-worth - one avoids trying hard in order to attribute failure to external causes.

Immediately following hypothesis training, subjects participated in an avoidance learning task (the test phase). Subjects were presented with thirty trials, and in each trial one could avoid an unpleasant noise if the proper button was pressed. Two conditions were created in order to compare the models' predictions about the impact of the test phase characteristics on helplessness syndrome (Kofta & Sedek, 1989). In one condition, the task was presented as being dependent on one's skillfulness, whereas in a second condition the task was described as being dependent partly on skill and partly on chance factors. If the egotism model held true, more impairment of performance was expected in the first condition. More impairment would be found in the second condition if the noncontingency model was true.

In these two separate studies, pre-exposure to noncontingent feedback alone resulted in performance deficits on subsequent problems (Kofta & Sedek, 1989). Providing information

regarding repeated failure did not result in performance deficits as was expected if, indeed, the egotism model was true. The impact of test task characteristics on performance indicated that performance impairment was greater when the test task was presented as partly chance controlled, therefore supporting the noncontingency model.

Miller (1986) conducted two studies targeting performance impairment after failure with the intent of determining which hypothesis - learned helplessness or ego-threat - best explains performance impairment. In study one, children first completed solvable or unsolvable tasks, after which they tried to solve anagrams described as highly or moderately difficult. The children did not have the option of giving up on the task before a set time limit elapsed. It was expected, as in previous studies, that if performance impairment follows from ego threat, then performance impairment after failure would be greatest when tasks are portrayed as moderately difficult. According to the noncontingency hypothesis, performance impairment would be greatest when the tasks are portrayed as highly difficult. In actual fact, performance impairment in response to failure was not found in study one. Study two differed from the first study in one way - children were given the option of withdrawing effort. Indeed, performance impairment was evident in the second study. Interestingly enough, the results indicated that performance impairment followed from ego threat for boys, whereas the girls followed the pattern associated with the noncontingency hypothesis. Miller (1986) suggested that the girls might have been more willing to conclude that demonstrating high ability was not worth the effort and thus gave up. Boys withdrew, or decreased effort, to avoid demonstrating low ability.

It has been suggested that both hypotheses are likely explanations of the learned helpless phenomenon (Seifert, 1995). One should consider the nature of the uncontrollability attributions made under different performance impairment conditions (Seifert, 1995). For example, as demonstrated by Diener and Dweck (1978, experiment 1), students may exhibit learned helpless behavior when they believe that they lack the ability to provide the correct responses. These children believe that they have no control over the outcome due to their perceived lack of ability. As a result, they demonstrate *failure acceptance* suggesting that a noncontingency hypothesis for withdrawal of effort is present. Covington and Omelich (1984) suggested that the attribution theory of achievement motivation presents a failure accepting paradigm. One becomes failure accepting when one is certain of inability. Failure is blamed on low ability and success is attributed to external sources. These students value effort - it becomes a major source for offsetting negative affect.

Diener and Dweck (1978) also provided evidence supporting Covington's (1984) suggestion that students who withdraw effort in situations where they see failure as inevitable, in an attempt to protect self-worth, are exhibiting *failure avoidance*. A group of helpless children emerged in Diener and Dweck's (1978) study who attributed failure to task difficulty or lack of experimenter "fairness". These children appeared to be attempting to avoid implicating lack of ability as the cause of failure, thereby protecting their self-worth. Covington believes that the self-worth theory of achievement motivation describes this failure avoiding dynamic (Covington & Omelich, 1984). One is able to escape competency-linked aspects of failure by not trying.

Recent research on multiple goals provides strong evidence suggesting that earlier research on goal theory, positing that individuals pursue either mastery or performance goals, may be oversimplifying the relationship between student motivation and behavior. As discussed, evidence suggesting that students may be pursuing multiple goals was evident nearly two decades ago. Ironically, this evidence was uncovered by researchers attempting to define characteristics of learning and performance oriented students. Learned helplessness and performance impairment research has also reinforced the belief that subgroups exist.

In addition to the accidental evidence for subgroups of students, researchers have successfully set forth and provided evidence for the existence of multiple goals (Pintrich & Garcia, 1991; Meece, 1994; Seifert, 1995). So, why has this possibility been overlooked in the past? The majority of researchers who have focused on the pursuit of two mutually exclusive goals -- performance or mastery-- have used correlation and regression techniques to examine the relationship between scores on each motivational goal scale and scores on the other construct scales (e.g., Nicholls, Patashnick & Nolen, 1985; Meece,Blumenfeld & Hoyle, 1988; Nolen, 1988; Nolen & Haladyna, 1990; Duda & Nicholls, 1992). Seifert (Seifert,1995; Seifert & Bulcock, 1996) has suggested, and provided evidence, that by focusing on correlation and regression techniques past researchers have failed to identify the interaction effect of goals. Indeed, the use of a cluster analysis has enabled Seifert (1995) and Meece (1994) to explore the interaction of goals.

Correlation and regression techniques overlook the possible interactions of goals. For example, although a low to zero correlation between a goal (e.g. performance) and another construct (e.g. meaning) may be interpreted as meaning that there is no relationship between the two, this is not necessarily the case. It is unfair to conclude that no student pursuing the performance goal experiences meaning. Indeed, it is more logical to assume that even though some students may not value school, there may be others within the performance group who do place value on the schooling experience. Thus, there is the possibility that two or more groups of students may be lumped under a performance orientation with each group experiencing the targeted construct differently. Perhaps one group does not place any value on school, whereas to a second group, school may hold a great deal of meaning. Still yet, a third group of students may exist who place some value on education. Such possibilities suggest that the relationship between goals and behavior needs to be explored further if one is to gain a better understanding of how motivation affects human behavior.

The existence of mastery and performance goal orientations is not disputed. However, based on past studies that have, and have not, purposely set out to explore subgoals and multiple goals, it is predicted that a factor analysis will provide evidence for the existence of more than the three expected goal orientations - mastery, performance and work avoidance. In addition to a mastery and work avoidance orientation, this study attempted to clarify and identify subgroups within the performance orientation - and explored the characteristics associated with these groups. It was anticipated that four additional

"performance" goals would emerge: competition, failure avoiding, look smart and pleasing others.

Why expect these four particular "performance" subgroups to be identified? A close examination of the operational definitions of a performance orientation provided by Dweck (Dweck, 1975; Dweck & Reppucci, 1973; Elliot & Dweck, 1988), Nicholls (Duda & Nicholls, 1992), and Pintrich & Garcia (1991), shows that even though the premise is the same, each definition is somewhat different. For example, Dweck (Elliot & Dweck, 1988) described performance students as seeking to gain favorable judgements of their competence while attempting to avoid negative judgements of their competence. This might be indicative of one group of students pursuing a *failure avoidance* orientation. In their efforts to maintain appearances, they will actually attempt to use strategies ensuring success but avoid attempting challenging tasks ensuring failure.

Nicholls (Duda & Nicholls, 1992) has described a "performance" or "ego" orientation as a goal whereby one strives to demonstrate high ability relative to others. This is suggestive of a subgroup primarily interested with demonstrating their superiority over others, therefore pursuing a *competition* orientation. Chances are these students will use sophisticated strategies, attempt challenges, and experience positive , as well as negative affect.

Pintrich & Garcia (1991) suggested that students might have multiple extrinsic (performance) motivations such as "getting good grades", "proving they are smarter than others", or "seeking approval from others". This statement, in itself, is suggestive of two

performance subgoals - *looking smart* and *pleasing others*. Blumenfeld (1992) suggested that even though a student interested in pleasing a teacher pursues a performance orientation, such a goal might actually be a precursor for adopting an intrinsic motivation. If such a group (please others) is identified in this study, it is predicted that their positive and negative affect will be dependent upon the achievement of this goal. In their attempt to achieve this, they will engage in effective strategies and make some attempt at challenging tasks.

METHODOLOGY AND RESULTS

Method

Sample

With parental consent (see Appendix A for sample of consent form), two hundred senior high students from three high schools located in a large east coast Canadian city participated. The sample comprised those students in three classes within each of two schools and two classes within another school who were present at the time the questionnaire was completed. The sample was composed of students, ages 16 to 21, who were predominately Caucasian, middle class with 44% males and 56% females participating. Courses were targeted to ensure that students of varying ability were included in the sample.

Measures

A motivation questionnaire (see Appendix B for sample of questionnaire) was constructed to assess the constructs of goal orientations, emotions, affect, strategy use, perceptions of classroom goal structure, and preference for challenge (see Tables 3.1-3.5 for actual items). Items for all motivation construct scales were seven point rating scales. All rating scales were positive in direction with 1 being the lowest, least positive and 7 being the most positive self-description.

Scores for all constructs were computed by averaging the product of standardized item scores and the factor score of the item.

Table 3.1. Factor loadings for the goal orientation scale

Scale/item	Factors					
Goal orientation	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Look smart (α=.82)						
I really want the other students to like me.	.48					
It's important I don't look stupid in front of other students.	.79					
I try not to let other students think I'm dumb.	.75					
I do not want the teacher to think I'm dumb.	.79					
It's important I don't look stupid to the teacher.	.68					
Competition (α=.81)						
I study so I will be better than other students.		.73				
I really work hard so I will be one of the top students.		.82				
I study really hard so I will get the highest grade in class.		.80				
Failure Avoidance (α=.82)						
I study so I will not get the lowest grade in class.			.83			
I work hard so I will not be the worst student in class.			.81			
I work hard so I will not get a failing grade.			.81			
Learning (α=.73)						
I really like to learn how things work.				.80		
I try to understand the material in school.				.63		
I try to do my work as well as I can.				.53		
I want to learn new things in school.				.74		
Work Avoidance (α=.70)						
I only study to learn the material for tests.					.78	
I try to do the least amount of work possible to get a good grade.					.73	
Please-the-teacher (α=.76)						
I do my work to please the teacher.						.75
I work hard so my teacher will think I am smart.						.67
I work hard so the teacher will like me.						.60
Variance (%)	3.12	2.45	2.39	2.09	2.07	2.05

Note: Factor loadings less than .40 have been omitted.

Table 3.2. Factor loadings for the emotion scale

Scale/item	Factors		
Emotion	Factor 1	Factor 2	Factor 3
Happiness (α=.83)			
In school, how often do you feel excited?	.68		
In school, how often do you feel cheerful?	.89		
In school, how often do you feel happy?	.90		
In school, how often do you feel delighted?	.73		
Stress (α=.77)			
In school, how often do you feel stressed out?		.68	
In school, how often do you feel anxious?		.53	
In school, how often do you feel nervous?		.75	
In school, how often do you feel tense?		.81	
Pride (α=.69)			
In school, how often do you feel proud?			.72
In school, how often do you feel satisfied?			.81
In school, how often do you feel disappointed?			.70
Variance (%)	11.35	4.02	4.90

Note: Factor loadings less than .40 have been omitted.

Table 3.3. Factor loadings for the affect scale

Scale/item	Factors			
Affect	Factor 1	Factor 2	Factor 3	Factor 4
Competency (α=.86)				
Do you feel stupid in school?	.61			
Do you have trouble with school work?	.82			
Do you find school is hard?	.77			
Are you good at learning things?	.78			
Do you do well in school?	.74			
Can you understand most things in school?	.78			
Meaning (α=.80)				
How interesting is your school work?		.71		
Are the things you learn in school important to you?		.69		
How boring is school to you?		.77		
Do you find the things you do in school seem to be useless and have no meaning?		.77		
Pressure (α=.76)				
Do you feel pressured to learn or do well?			.81	
Do you feel you must do well?			.66	
Do you feel that people expect a lot from you at school?			.77	
Do you feel that you are being forced to do your school			.63	
Belonging (α=.72)				
Does being in school make you feel like a worthwhile person?				.70
Do you feel like you are an important part of your class?				.77
Do you feel out of place or like you don't belong in school?				.83
Variance (%)	3.61	2.54	2.50	2.00

Note: Factor loadings less than .40 have been omitted.

Table 3.4. Factor loadings for the classroom environment scale

Scale/item	Factors	
Classroom environment	Factor 1	Factor 2
Mastery oriented classroom (α=.80)		
My teachers make sure I understand the work.	.63	
My teachers encourage us to study together for tests.	.57	
My teachers pay attention to whether I'm improving.	.60	
My teachers assign group work often.	.55	
My teachers give us a chance to correct mistakes or do make-up tests.	.46	
My teachers encourage students to help others.	.84	
My teachers encourage us to try new things.	.75	
My teachers encourage us to get help from each other if we need help.	.67	
Ability oriented classroom (α=.54)		
My teachers compare me to others.		.49
My teachers tell the whole class how many students got A's, B's and so		.59
My teachers make students feel bad if they don't do well.		.73
My teachers read out marks when handing back tests and assignments.		.67
Variance (%)	3.41	2.03

Note: Factor loadings less than .40 have been omitted.

Table 3.5. Factor loadings for the strategy use scale

Scale/item	Factors	
Strategy use	Factor 1	Factor 2
Deep processing strategies (α=.67)		
When I am studying, I usually make a picture in my head of what I have	.64	
When I am studying, I usually ask myself questions to help me understand.	.79	
When I am studying, I usually try to think carefully about what I've read.	.59	
When I am studying, I usually try to think of my own examples of ideas.	.63	
When I am studying, I usually try to summarize the important ideas.	.65	
Shallow processing strategies (α=.41)		
When I am studying, I usually read the textbook chapter over several times.		.72
When I am studying, I usually copy out my notes.		80
Variance (%)	2.21	1.33

Note: Factor loadings less than .40 have been omitted.

Results

Factor analysis

Items for each scale were subjected to a principal components analysis followed by a varimax rotation. Items which did not load greater then .40 on any factor or loaded on two or more factors were dropped. Only factors with eigenvalues greater than 1.0 were retained. This procedure resulted in six goal orientation factors (learning, competition, failure avoidance, work avoidance, please-the-teacher, look smart), three emotion factors (pride, happiness, stress), four affect factors (competence, belonging, meaning, pressure), three classroom perception factors, and three strategy factors. Because the three factor solutions for the classroom orientation and strategy items did not make sense conceptually and the third factor was only marginally above the 1.0 eigenvalue cutoff criteria, two factor solutions were imposed upon the classroom orientation and strategy items. This forced solution resulted in two classroom environment factors (mastery and ability) and two strategy factors (shallow and deep processing) which were consistent with previous research (e.g., Ames & Archer, 1988; Nolen, 1988). Factor loadings are presented in Tables 3.1-3.5.

Pearson correlations were computed between goal orientation scores and the remaining motivational construct scores (see Table 3.6). Students with higher learning orientation scores were more likely to feel competent, report a sense of belonging, and associate meaning with the school experience. Although learning students acknowledged experiencing some pressure, they did not report feeling stressed. A stronger learning orientation was moderately associated with pride and somewhat correlated with reports of

Table 3.6. Means, standard deviations and zero-order correlations between goal orientation and motivational constructs

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Look-smart	4.52	1.30																	
2. Competition	3.23	1.41	.34																
3. Failure avoidance	4.22	1.63	.33	.25															
4. Learning	5.30	1.04	.33	.41	.25														
5. Work avoidance	4.46	1.46	.18	-.13	-.07	-.26													
6. Please-the-teacher	3.26	1.31	.55	.47	.37	.31	-.05												
7. Competency	4.90	1.03	-.04	.34	-.11	.34	-.10	-.04											
8. Belonging	4.42	1.10	.20	.26	.15	.33	.02	.29	.29										
9. Meaning	3.79	1.22	.13	.30	.15	.46	-.39	.23	.28	.37									
10. Pressure	4.69	1.19	.32	.33	.17	.18	.19	.27	-.10	.07	-.02								
11. Pride	3.17	0.80	.09	.43	.04	.37	-.12	.27	.48	.52	.34	-.08							
12. Happiness	4.42	1.23	.28	.16	.18	.22	-.10	.35	.09	.55	.25	.05	.36						
13. Stress	4.22	1.19	.19	.12	.17	.02	-.05	.09	-.29	-.25	-.05	.30	-.21	-.02					
14. Mastery class	3.75	1.02	.29	.19	.28	.32	-.20	.35	.06	.29	.30	.04	.17	.33	.09				
15. Ability class	2.81	1.08	.09	.02	-.05	-.07	.07	.02	-.16	-.09	-.17	.29	-.15	-.08	.04	-.14			
16. Shallow processing	3.93	1.59	.14	.24	.26	.21	-.13	.18	-.01	.06	.24	.20	.05	.08	.26	.21	.002		
17. Deep processing	4.86	1.11	.12	.25	.11	.32	-.16	.12	.15	.13	.28	.06	.14	.13	.02	.13	.01	.15	
18. Preference for Challenge	4.13	1.68	.12	.26	.15	.43	-.29	.08	.40	.11	.41	-.02	.14	-.02	-.14	.15	-.06	.15	.23

Note: Correlations greater than .19 are stastically detectable at the α=.05 level.

happiness. These students reported a preference for challenge and perceived the classroom environment as mastery oriented. A learning orientation correlated with use of both deep and shallow processing strategies; however, the correlation with deep processing strategies was greater.

Higher competition orientation scores were moderately correlated with competency, somewhat correlated with belonging, and were associated with higher levels of meaning to the school experience. As expected, a higher competition score was associated with more frequent experiencing of pressure; however, there was no correlation with stress. Higher competition scores were associated with higher levels of pride, and had a weak correlation with happiness. Finally, higher competition orientation scores were somewhat correlated with perceptions of a mastery oriented classroom environment, use of shallow and deep processing strategies and a preference for challenge.

It appears that students pursuing learning and performance goals are not all that different from one another. Both groups of students seem to have fairly positive experiences in school as is evident in their reported levels of positive affect and emotions. Learning and competition oriented students share similar perceptions of their classroom environment, and rather than run from a challenge they engage in a wide range of behaviors to ensure success.

Higher failure avoidance orientation scores were slightly correlated with belonging, meaning and pressure. As expected, there was no correlation between failure avoidance scores and competency and pride; however, there was a weak correlation with happiness and stress. Failure avoidance students perceived the classroom as mastery oriented, reported

using shallow processing strategies, and did not report a preference for challenge. Even though students pursuing a failure avoidance goal reported experiencing some positive affect and emotions, most likely the stress and pressure they feel is a result of their goal pursuit. Unfortunately, these students engage in the less effective learning strategies despite their attempts to avoid failure.

Students with higher please-the-teacher orientation scores were more likely to feel as though they belong, associate meaning to the school experience, and experience pride and happiness. Even though these students also reported higher levels of pressure, they did not report feeling stress. There was a moderate correlation between please-the-teacher scores and perceptions of the classroom environment as being mastery oriented. There was no correlation with a preference for challenge. Finally, there was a weak correlation between please-the-teacher scores and reported use of shallow processing strategies. Although please-the-teacher oriented students experienced positive affect and emotions, unlike learning and competition oriented students, they did not report feeling confident in their abilities. Given their lack of confidence, it is not surprising that please-the-teacher oriented students are not interested in pursuing challenges.

Higher look-smart orientation scores were moderately associated with higher levels of pressure, somewhat associated with feelings of happiness, and weakly associated with belonging. Students with higher look-smart scores perceived the classroom as mastery oriented. There was no correlation between the look-smart scores and reported use of shallow and deep processing strategies and preference for challenge. Undoubtedly, students

pursuing a look-smart goal feel pressured to avoid looking stupid. Given this, one would not expect these students to risk attempting difficult tasks; however, how does one explain look-smart students' lack of effort to succeed as is evident in the absence of a significant correlation between a look-smart orientation score and use of both types of strategies? Perhaps, look-smart oriented students believe that should they fail despite studying, they will look more stupid than if they did not study.

Consistent with previous research, work avoidance orientation scores did not correlate with competency, belonging, pride, happiness and stress. Also, as expected, work avoidance students were less likely to find meaning in the school experience. Higher work avoidance scores were slightly correlated with experiencing pressure. Consistent with previous research, there was a weak negative correlation between work avoidance scores and perceptions of the classroom as being mastery oriented, and reported use of deep processing strategies. Finally, there was a moderate negative correlation between work avoidance scores and a preference for challenge. The work avoidance students' choice to avoid work is evident in their decision to avoid challenges and to avoid utilizing learning strategies targeted by this questionnaire. Perhaps, students pursuing a work avoidance goal are choosing this particular path because of the obvious lack of interest they have in school.

Cluster Analysis

To help clarify goals students pursue and how they impact on behavior, a hierarchial cluster analysis using Ward's method was conducted. A five cluster solution was retained

based upon a sharp drop in the psuedo t^2-statistic and a decline in the incremental R^2 value (refer to Figures 3.1 & 3.2).

The cluster analysis was followed by a 5x6 analysis of variance with cluster membership as between groups variable and goal orientation as repeated measures using general linear modeling procedure. The test was conducted as omnibus test with (α=.05). Of particular interest was the detection of a possible interaction effect which would indicate that different groups pursue different goals. If an interaction effect was found, the omnibus test was followed by a test of simple main effects (α=.01) within each group, a posteriori contrasts within groups (α=.005) and a posteriori between groups contrasts (α=.01).

The omnibus test was, in fact, statistically detectable ($F(16, 672)=22.56$, $p<.05$), suggesting that different groups pursued different goals. The test of simple main effects showed that each group had dominant goals (Table 3.7). By referring to Figure 3.3 for profiles of groups, one can see that each cluster had dominant goals. Cluster 1's failure avoidance scores were higher than their other goal scores (smallest $t=3.22$, $p<.005$), thus these students could be described as failure avoidance oriented. These students were primarily concerned with doing what they must to avoid the implications associated with failing. Their look-smart, please-the-teacher, competition and learning scores were higher than their work avoidance scores (smallest $t=5.11$, $p<.005$).

Figure 3.1. Number of clusters by increment R^2 value

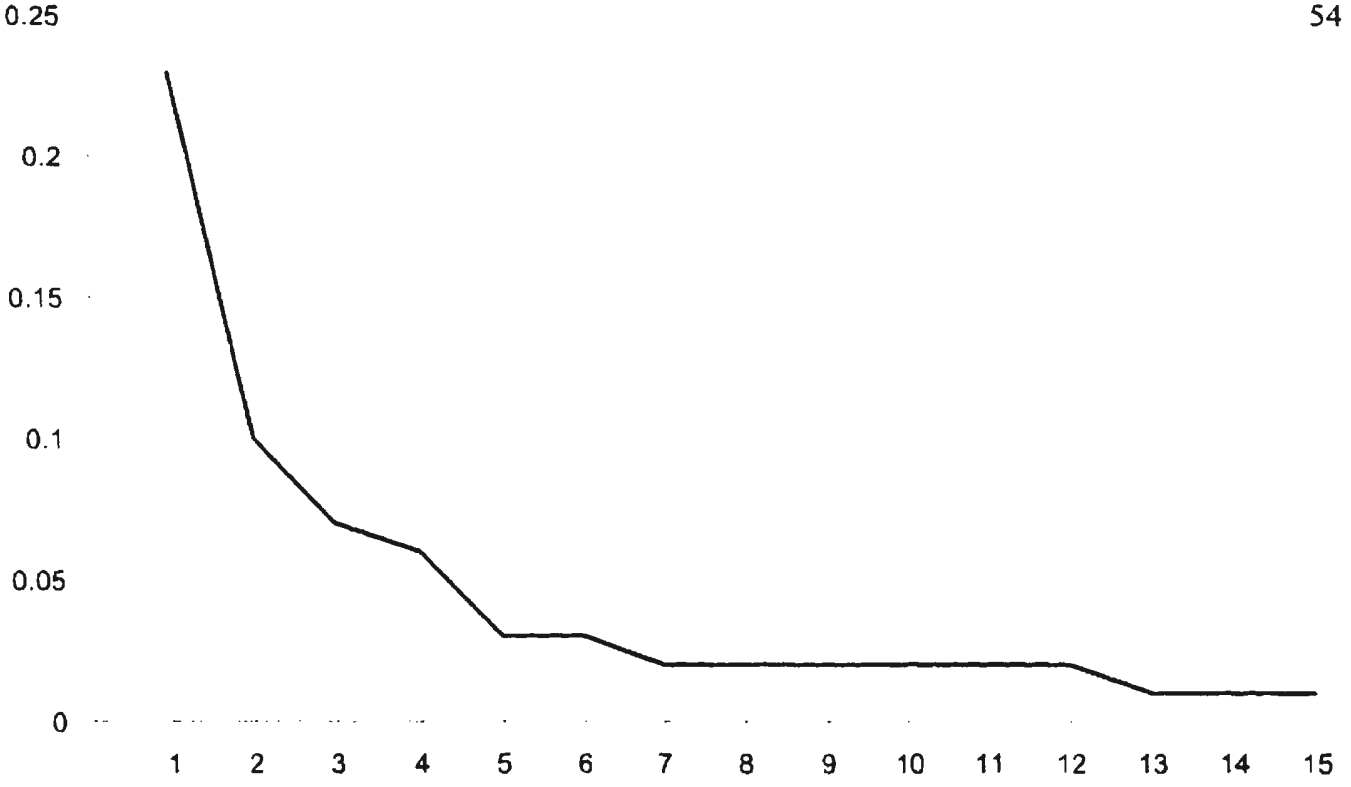


Figure 3.2. Number of clusters by value of t^2-statistic

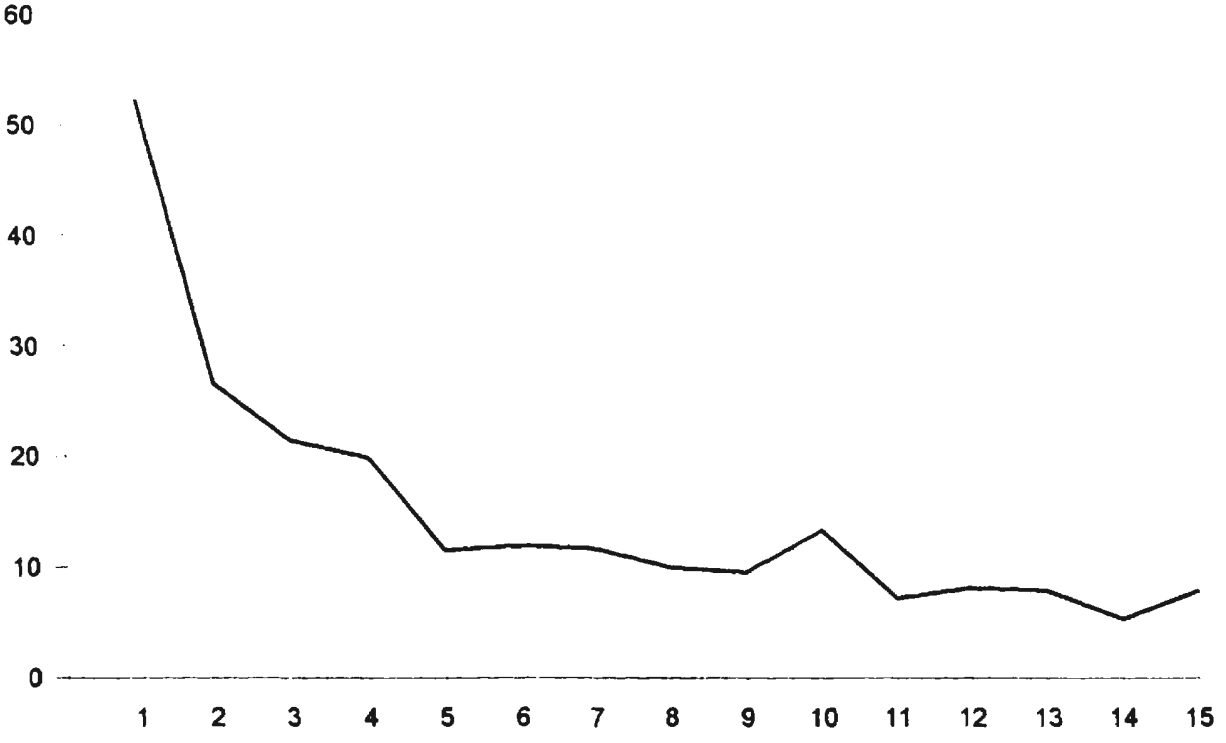
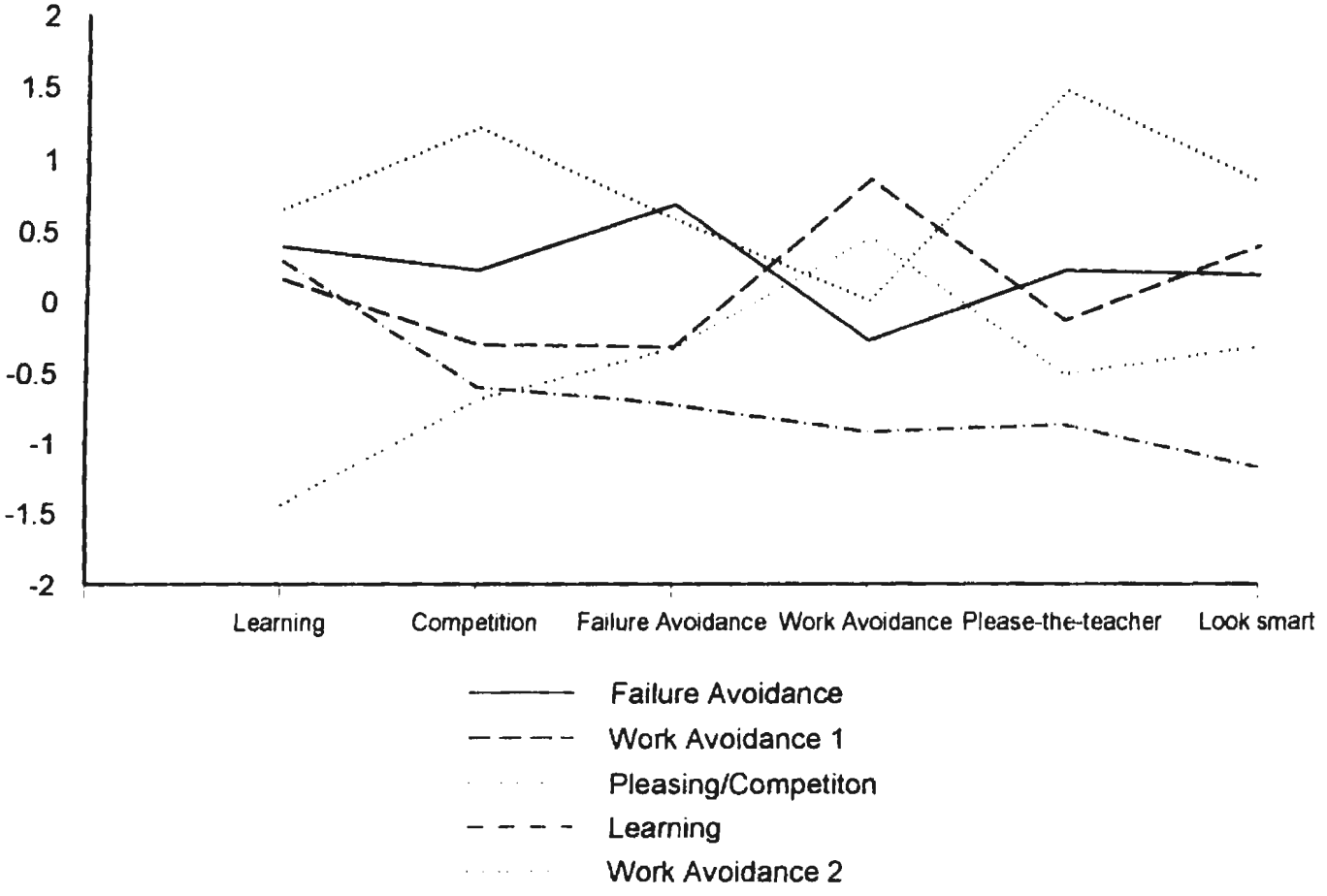


Table 3.7. Summary statistics of a repeated measures ANOVA (goal orientation by cluster membership) followed by within clusters tests of simple effects

Source	d.f.	MS	*F*	*p*
Cluster	4	38.94	74.82	<.0001
Error	168	.52		
Goal	4	.10	.20	>.05
Goal x Group	16	10.61	22.56	<.05
Error	672	.47		
Cluster 1	4	6.92	14.63	<.005
Cluster 2	4	8.50	18.06	<.005
Cluster 3	4	4.96	10.54	<.005
Cluster 4	4	7.05	14.99	<.005
Cluster 5	4	15.27	32.45	<.005

Figure 3.3. Profiles of goal orientation scores by cluster



Cluster 2 was one of two clusters primarily characterized as work avoidance. Cluster 2's work avoidance scores were higher than their other goal scores (smallest $t=3.83$, $p<.005$). Their look-smart and learning scores were also higher than their competition and failure avoiding scores (smallest $t=3.90$, $p<.005$).

Cluster 3's please-the-teacher and competition scores did not differ ($p>.005$), thus these students are both competition and please-the-teacher oriented Their please-the-teacher scores were higher than their learning, failure avoiding, work avoidance and look-smart scores (smallest $t=4.76$, $p<.005$). Their competition scores were higher than their learning, failure avoiding and work avoidance scores (smallest $t=4.17$, $p<.005$), but did not differ from their look-smart scores ($p>.005$).

Cluster 4's learning scores were higher than their other goal score (smallest $t=6.23$, $p<.005$), thus students in cluster 4 were strictly learning oriented. Cluster 5's work avoidance scores were higher than their other goal scores (smallest $t=6.23$, $p<.005$), therefore they could be described by a desire to avoid work. Cluster 5's learning scores were lower than their other scores (smallest $t=6.27$, $p<.005$) implying that these students also have little desire to learn.

Although cluster 1 and cluster 3's failure avoiding scores did not differ ($p>.01$), their failure avoiding scores were higher than clusters 2, 4 and 5 (smallest $t=6.77$, $p<.01$). Cluster 4's failure avoidance scores were the lowest of all the clusters (smallest $t=2.80$, $p<.01$), and clusters 2 and 5 failure avoidance scores did not differ ($p>.01$).

Cluster 2's work avoidance scores surpassed the other clusters (smallest $t=3.26$, $p<.01$), including cluster 5 ($t=3.26$, $p<.01$). Cluster 5's work avoidance scores were higher than the remaining clusters (smallest $t=3.27$, $p<.01$). Cluster 4 had the lowest work avoidance scores (smallest $t=5.09$, $p<.01$), and clusters 1 and 3's scores did not differ ($p>.01$).

Cluster 5's learning scores were the lowest of all the clusters (smallest $t=12.82$, $p<.01$). Despite being characterized as learning oriented, cluster 4's learning scores did not differ from the remaining three clusters ($p>.01$). The only other clusters whose learning scores differed were clusters 2 and 3, with cluster 3's learning scores being the higher of the two ($t=3.69$, $p<.01$).

Cluster 3 had the highest competition scores (smallest $t=8.14$, $p<.01$), and cluster 1 had the second highest competition score (smallest $t=4.81$, $p<.01$). Cluster 5's competition scores were lower than cluster 2's ($t=3.11$, $p<.01$); however, cluster 4's competition scores did not differ from either one of the work avoidance clusters ($p>.01$).

As expected, cluster 3's please-the-teacher scores were the highest of all the clusters (smallest $t=10.39$, $p<.01$). Cluster 1's please-the-teacher scores were the second highest (smallest $t=3.18$, $p<.01$), and cluster 2's the third highest (smallest $t=3.03$, $p<.01$). Cluster 4 and 5's please-the-teacher scores did not differ ($p>.01$).

Cluster 3's look-smart scores were higher than the other clusters (smallest $t=3.16$, $p<.01$), and cluster 4 had the lowest look-smart scores (smallest $t=6.10$, $p<.01$). Cluster 5 had the second lowest look-smart scores (smallest $t=4.45$, $p<.01$), thus differing from cluster 2's scores ($t=5.81$, $p<.01$).

Cluster 1's failure avoiding scores surpassed its other goal scores as well as the failure avoidance scores of clusters 2, 4, and 5. Thus, cluster 1 represents a failure avoiding group of students. Cluster 2's work avoidance goal scores were higher than its' other goals scores as well as the work avoidance goal scores of the remaining four cluster. As a result, cluster 2 represents a work avoidance group of students. Students in cluster 3 appeared to be pursuing please-the-teacher and competition goals with higher please-the-teacher and competition goal scores than the remaining four clusters. Given this, cluster 3 is best summarized as the please-the-teacher/competition group. Although students in cluster 4 were more interested in pursing learning goals than any of the other goals, their desire to learn was not stronger than students in clusters 1, 2 and 3. Despite this, students in cluster 4 were less interested in looking smart, and avoiding work and failure than the other clusters. Therefore, cluster 4 appears to be best described as the learning group.

Cluster 5 seems to represent a second group of work avoidance students. Because of this, cluster 2 will be referred to as the work avoidance 1 group and cluster 5 will be labeled as the work avoidance 2 group. As with the first work avoidance group, students in the second work avoidance group were also more intent on avoiding work than they were with pursuing any of the other goals. Even though cluster 5's work avoidance scores were lower than cluster 2's, cluster 5's work avoidance scores were higher than the remaining three clusters. Despite labeling clusters 2 and 5 as work avoidance, there are some distinguishing differences between these two groups. Cluster 2 students expressed some interest in

learning; however, cluster 5 students were less interested in pursuing a learning goal than they were with pursuing any of the other goals. Also, students in cluster 5 were less interested in pursuing competition, please-the-teacher and look-smart goals than their work avoidance peers.

By referring to Figure 3.4, one can see that the profiles for emotions are quite flat. The only within group difference on the test of simple effects was within the second work avoidance group (see Table 3.8). Work avoidance 2 students experienced more stress than pride ($t=4.96$, $p<.005$). Please-the-teacher/competition students reported the highest score on pride of all the groups (smallest $t=2.95$, $p<.01$). Surprisingly, the learning group's reported level of pride did not differ from the failure avoidance and both work avoidance groups ($p>.01$). Both work avoidance group's pride scores did not differ ($p>.01$); however, the second work avoidance group had a lower pride score than the remaining clusters (smallest $t=2.71$, $p<.01$). Failure avoidance and please-the-teacher/competition students' scores on happiness did not differ ($p>.01$); however, cluster 3's happiness score was higher than the remaining three clusters (smallest $t=3.01$, $p<.01$). The failure avoidance group had a higher happiness score than learning and work avoidance 2 groups (smallest $t=3.03$, $p<.01$). Although it was expected that the learning students would be more likely to experience happiness than the other groups of students, this was not so ($p>.01$). Both work avoidance groups did not report different levels of this emotion ($p>.01$).

Surprisingly, the learning group did not report lower levels of stress than the other clusters ($p>.01$). The work avoidance 1 group had a lower score on stress than all of the

Figure 3.4. Profiles of emotion scores by cluster

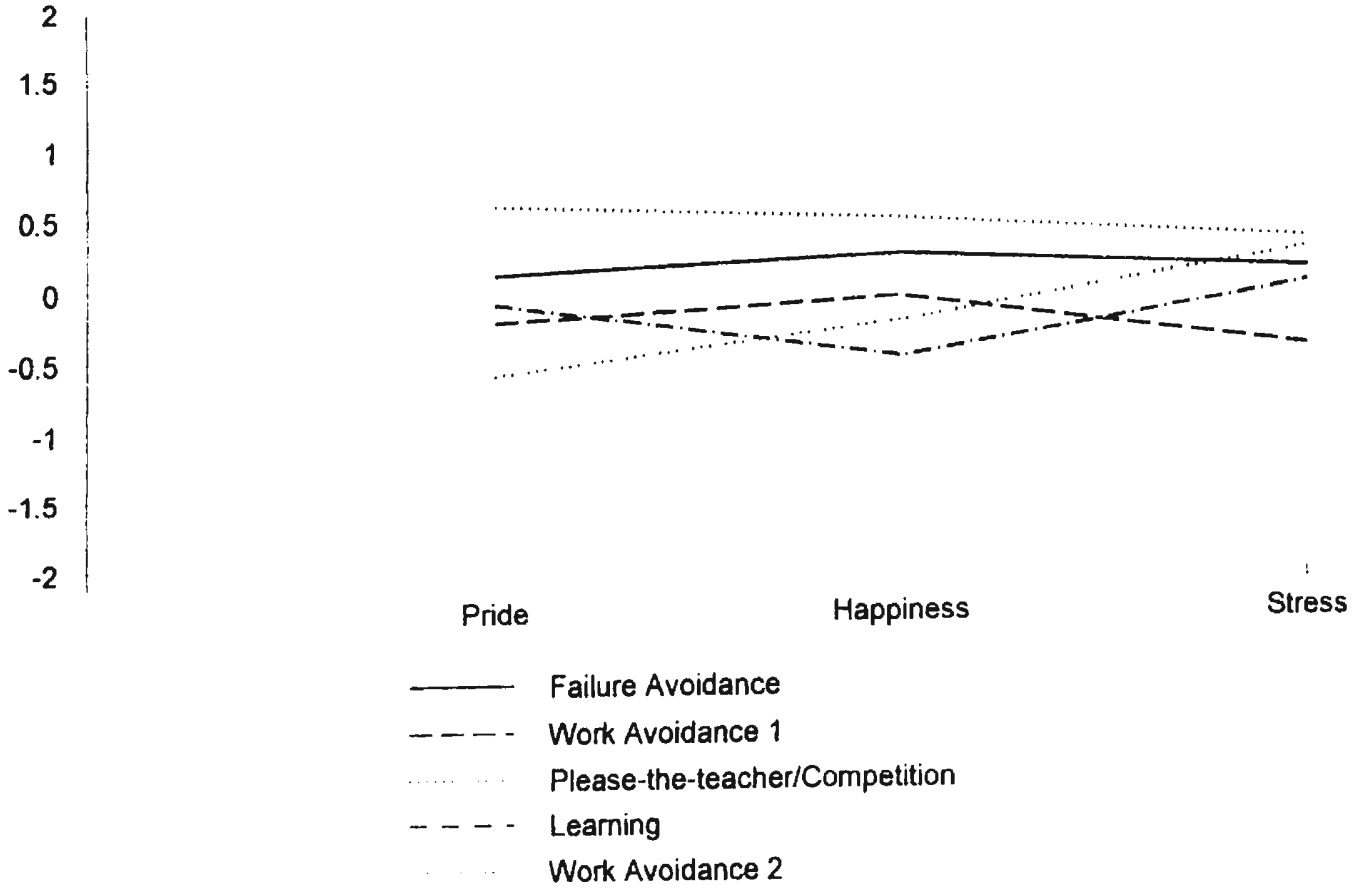


Table 3.8. Summary statistics of a repeated measures ANOVA (emotions by cluster membership) followed by within clusters tests of simple effects

Source	d.f.	MS	*F*	*p*
Cluster	4	7.65	8.03	<.0001
Error	164	.95		
Emotion	2	.65	.70	>.05
Emotion x Cluster	8	2.06	2.19	<.05
Error	328	.94		
Cluster 1	2	.30	.32	>.005
Cluster 2	2	1.18	1.26	>.005
Cluster 3	2	.39	.40	>.005
Cluster 4	2	1.58	1.61	>.005
Cluster 5	2	5.42	5.77	<.005

other clusters (smallest $t=3.63$, $p<.01$), except for the learning group ($p>.01$). Stress was the only emotion on which the work avoidance clusters differed ($t=4.01$, $p<.01$).

Even though the second work avoidance group was the only cluster identified as having within groups differences on the test of simple effects, the between groups contrasts produced an interesting presence and absence of results. Despite their choice of goal pursuit and its expected consequences, students in the first work avoidance group experienced less stress than all groups but the learning group. Overall, please-the-teacher/competition students experienced more positive emotions than the other students, reporting the highest level of pride and higher levels of happiness than students in the learning and both work avoidance groups. Surprisingly, learning students did not experience more positive emotions than their peers except for a higher reported level of pride than the work avoidance 2 group. The two work avoidance groups differed on stress only.

The test of simple main effects for affect identified group differences within Group 4 (Table 3.9). Except for the learning and work avoidance 2 groups, the profiles for the remaining groups are fairly flat (Figure 3.5). Learning student's competency and meaning scores did not differ ($p>.005$); however, both of these scores were higher than the scores on pressure and belonging (smallest $t=3.42$, $p<.005$). These findings are fairly consistent with previous research with the exception of the learning group's lower score on belonging. The work avoidance 2 group scored higher on pressure than competency ($t=3.84$, $p<.005$).

The work avoidance 2 group had the lowest competency score (smallest $t=4.45$, $p<.01$). Interestingly, learning students were not more likely to experience competency than the

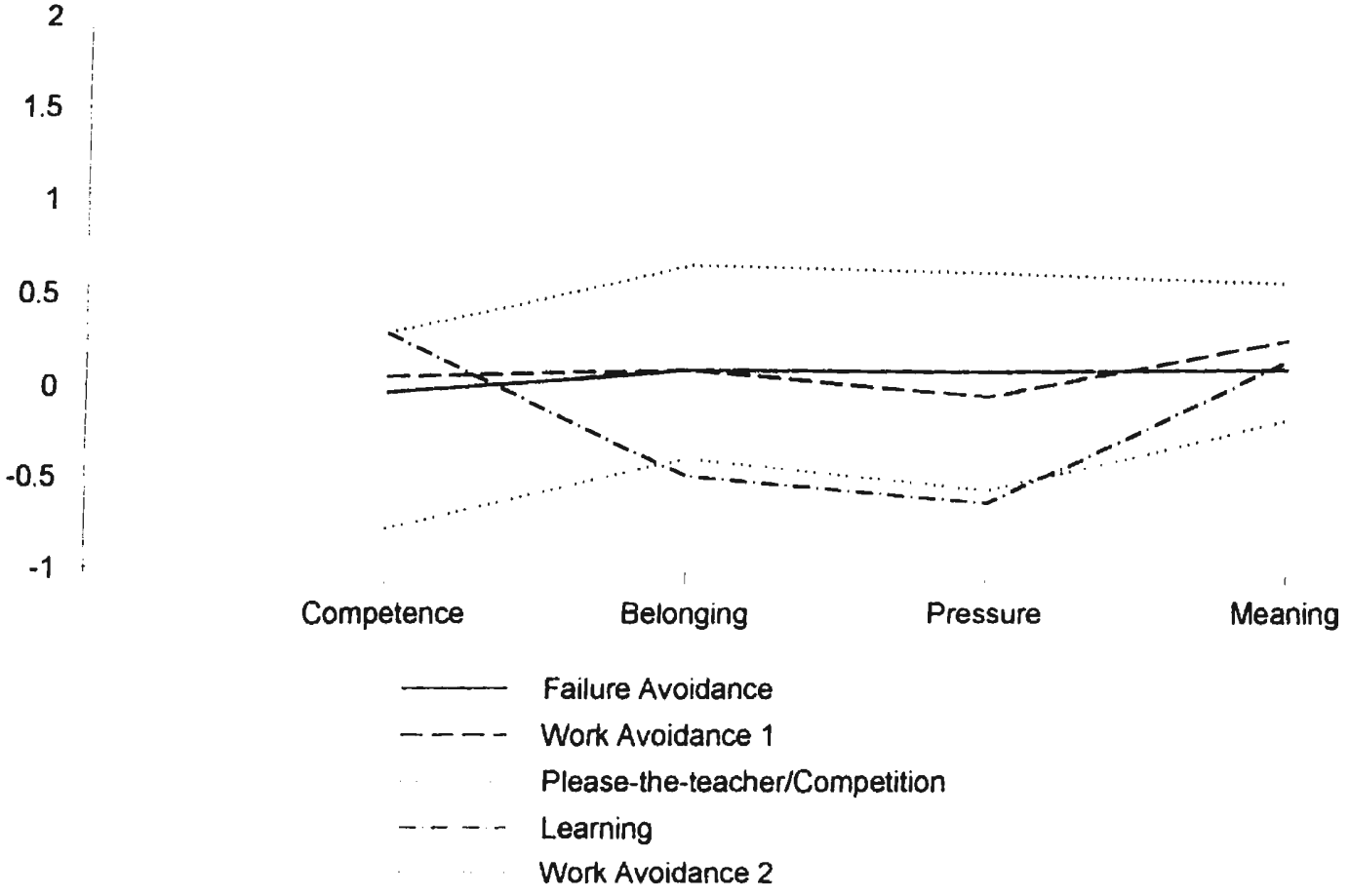
Table 3.9. Summary statistics of repeated measures ANOVA (affect by cluster membership) followed by within clusters tests of simple effects

Source	d.f.	MS	*F*	*p*
Cluster	4	15.24	13.03	<.0001
Error	162	1.17		
Affect	3	.17	.22	>.05
Affect x Cluster	12	1.74	2.23	<.05
Error	486	.78		
Cluster 1	3	.21	.27	>.005
Cluster 2	3	.51	.65	>.005
Cluster 3	3	.63	.81	>.005
Cluster 4	3	3.82	4.87	<.005
Cluster 5	3	2.20	2.83	>.005

Table 3.10. Summary statistics of repeated measures ANOVA (classroom environment by cluster membership) followed by within clusters tests of simple effects

Source	d.f.	MS	*F*	*p*
Cluster	4	2.62	3.33	<.05
Error	165	79		
Environment	1	.05	.04	>.05
Environment x cluster	4	3.40	3.19	<.05
Error	165	1.07		
Cluster 1	1	4.57	4.27	>.005
Cluster 2	1	.92	.86	>.005
Cluster 3	1	2.49	2.33	>.005
Cluster 4	1	.30	.28	>.005
Cluster 5	1	5.38	5.03	>.005

Figure 3.5. Profiles of affect scores by cluster



other groups of students ($p>.01$). The two work avoidance groups did not differ on their belonging scores ($p>.01$), yet the work avoidance 2 group was less likely to experience belonging than failure avoidance and please-the-teacher/competition groups (smallest $t=2.85$, $p<.01$). Although it was expected that learning students would a score higher on belonging than the other students, please-the-teacher/competition students reported the highest score (smallest $t=2.81$, $p<.01$). In fact, learning students had a lower score on belonging than the other groups of students (smallest $t=3.08$, $p<.01$), except for work avoidance 2 students ($p>.01$).

The please-the-teacher/competition group's reported score on pressure surpassed the learning and work avoidance 2 groups (smallest $t=3.61$, $p<.01$). As expected, learning students had a lower score on pressure than students in the failure avoidance, work avoidance 1 and please-the-teacher/competition groups (smallest $t=3.87$, $p<.01$). The work avoidance groups did not differ ($p>.01$).

The learning group reported higher scores on meaning than the work avoidance 2 group ($t=3.40$, $p<.01$). Please-the-teacher/competition students were more likely to experience meaning than students in the failure avoidance and both work avoidance groups (smallest $t=2.93$, $p<.01$). The work avoidance 2 had the lowest score on meaning (smallest $t=2.76$, $p<.01$), therefore presenting yet another way in which the work avoidance clusters can be distinguished from one another.

Learning students were more likely to feel competent and perceive meaning from school than they felt pressured or as though they belonged. Learning students experienced less

pressure and belonging than their peers in the failure avoidance, work avoidance 1 and please-the-teacher/competition groups, thus presenting two ways in which learning students can be distinguished from these other students. Quite unexpectantly, learning students did not experience more positive affect than their peers. In fact, please-the-teacher/competition students felt more "in place" in school than all their peers, and please-the-teacher/competition students reported that school had more meaning to them than their peers in the failure avoidance and both work avoidance groups. The two work avoidance groups of students differed on their reported levels of competency and meaning with students in the first work avoidance group reporting more intense levels.

No within group differences emerged on the test of simple effects for environment (see Table 3.10). The profiles for perceptions of the classroom environment are presented in Figure 3.6. Classroom environment scores for the failure avoidance, please-the-teacher/competition, learning and work avoidance 2 groups did not differ from one another ($p>.01$). Work avoidance 1 students had lower learning class environment scores than failure avoidance students ($t=4.05$, $p<.01$) and please-the-teacher/competition students ($t=3.91$, $p<.01$). However, the two work avoidance groups' learning class environment score did not differ from one another ($p>.01$). The clusters' scores on perceptions of an ability class environment did not differ.

Within group differences did not emerge on the test of simple effects for learning strategies (Table 3.11). The profiles for strategy use are, indeed, quite flat (see Figure 3.7). According to the a posteriori between groups contrasts, group differences did emerge. As

Figure 3.6. Profiles of perceptions of classroom environment scores by cluster

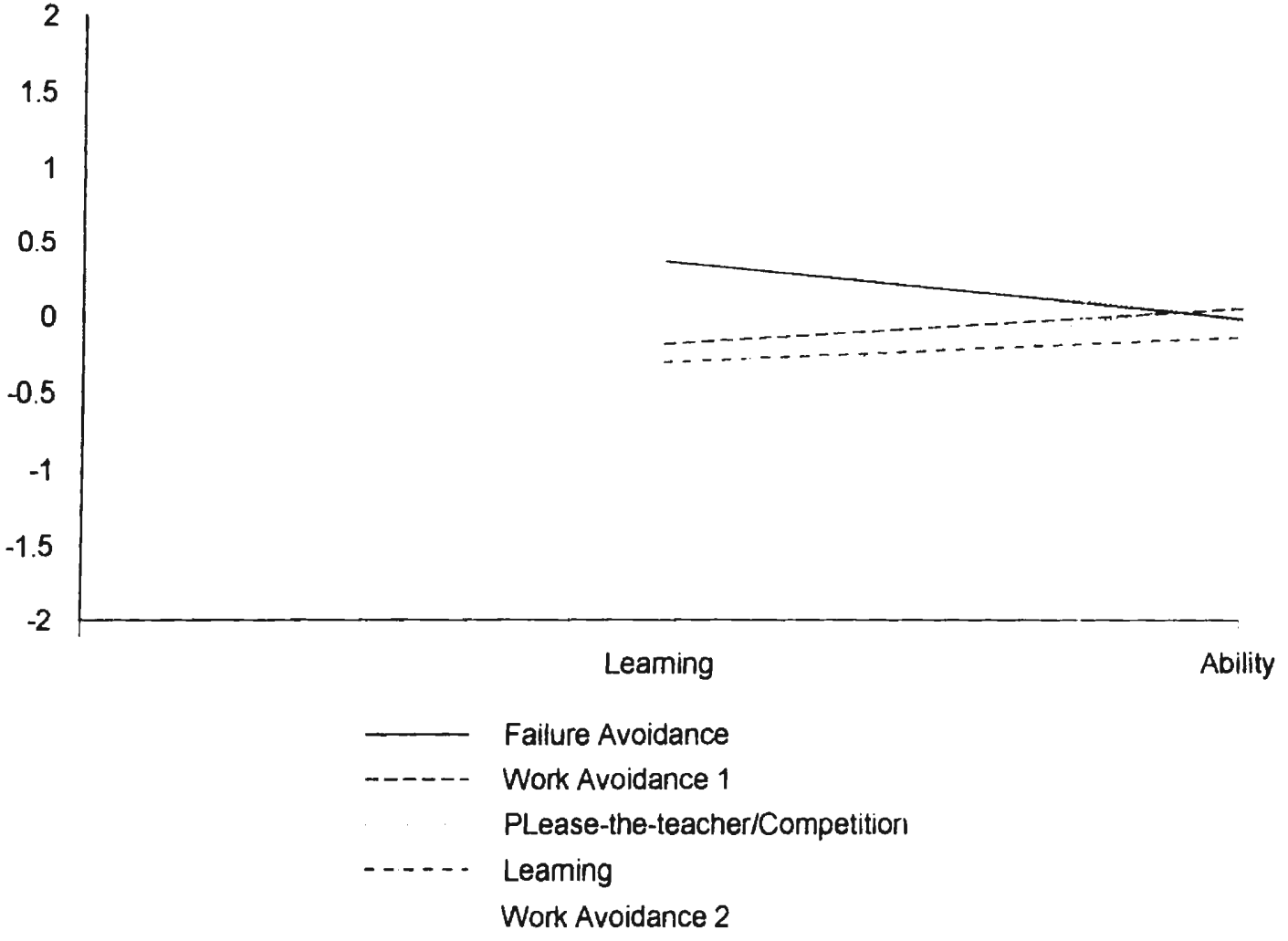
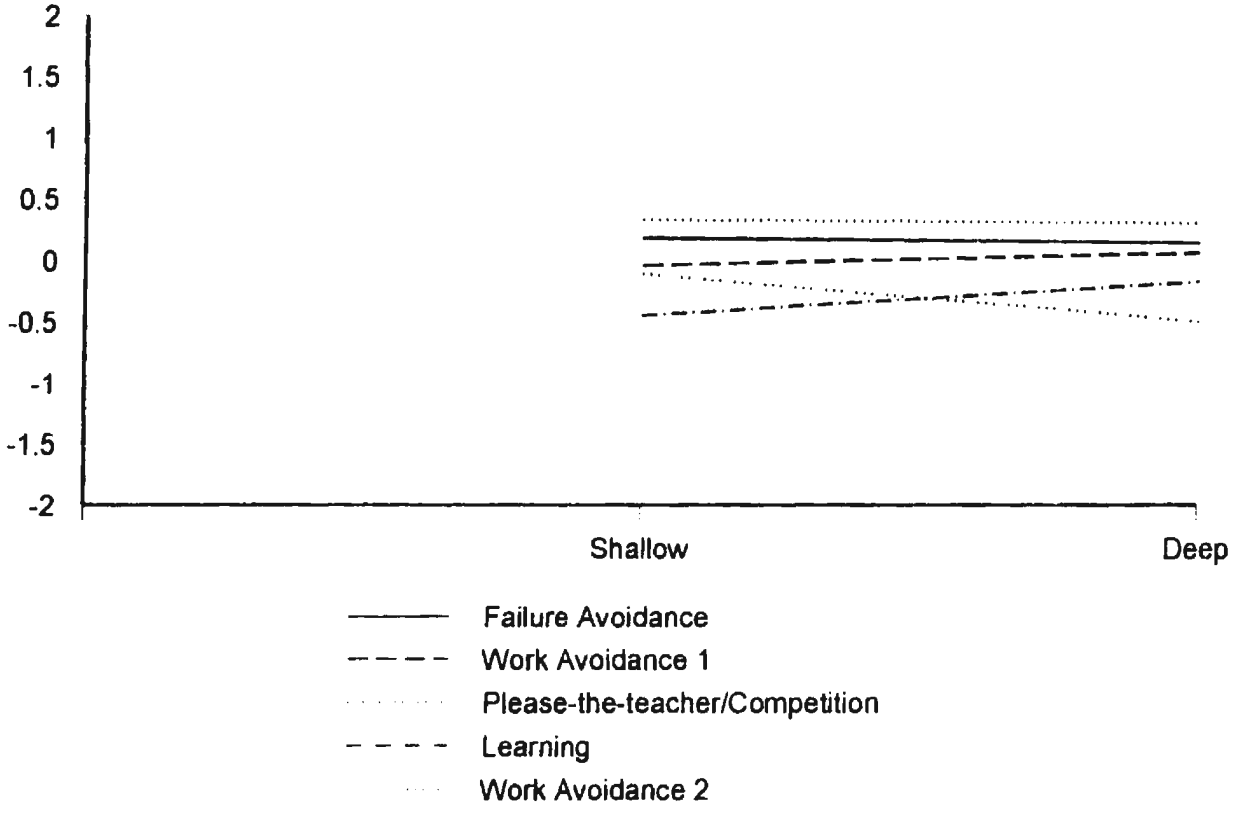


Table 3.11. Summary statistics of repeated measures ANOVA (learning strategies by cluster membership)

Source	d.f.	MS	*F*	*p*
Cluster	4	4.46	4.11	<.05
Error	167	1.08		
Strategy	1	.03	.04	>.05
Strategy x Cluster	4	.79	1.07	>.05
Error	167	.74		

Figure 3.7. Profiles of strategy use scores by cluster



expected, the learning group's score on the use of shallow processing strategies was less than the failure avoidance group ($t=3.48$, $p<.01$) and the please-the-teacher/competition group ($t=3.7$, $p<.01$). Although learning students were expected to report a higher use of deep processing strategies than all other students, this was not so ($p>.01$). The work avoidance 2 group had lower scores on use of deep processing strategies than the failure avoidance group ($t=3.96$, $p<.01$) and please-the-teacher/competition group ($t=4.12$, $p<.01$). Both work avoidance groups did not differ from each other on their reported use of strategies ($p>.01$).

DISCUSSION AND IMPLICATIONS

As discussed in length, the majority of research on achievement goal theory has focused on performance and learning goal orientations. Researchers have also identified the existence of a third goal orientation - a work avoidance orientation (Pintrich & DeGroot,1990; Pintrich & Garcia,1991; Duda & Nicholls, 1992; Patashnick & Nolen, 1985). Consistent with this research, the factor analysis performed on the data collected in this study yielded a learning, competition and work avoidance factor; however, failure avoidance, please-the-teacher, and look-smart factors were also identified.

Correlations

As argued, previous studies would have included students with failure avoidance, please-the-teacher, and look-smart orientations with those pursuing a performance orientation. If so, then one would expect the correlations to be affected by the addition of these three sub-performance goals. For example, although a low correlation implies no relationship between a goal orientation (performance) and a targeted construct (meaning), it is still possible that some performance students do experience meaning. The correlation analysis in this study yielded positive correlations between meaning and competition, failure avoidance, and please-the-teacher orientations. These are not strong correlations; however, it does demonstrate that correlation scores need to be interpreted with caution. It also lends support to the belief that a cluster analysis can provide important information about the relationship between goals and associated behavior.

The use of a factor analytic-correlational methodology yielded findings consistent with previous research on characteristics of mastery oriented students (e.g., Meece, Blumenfeld & Hoyle, 1988; Seifert, 1994; Ames, 1984; Nolen,1988). The findings suggest that students pursuing learning goals tend to experience positive affect - feelings of competency, belonging and meaning. A greater mastery orientation was associated with emotions of pride and happiness, the use of deep and shallow learning strategies, perceptions of the classroom as mastery oriented, and a preference for challenge.

In addition to these results, there was a notable, unexpected presence and absence of findings. As expected, competition oriented students reported that they experienced pressure and used shallow processing strategies. The similarity to past findings ends here. Unlike students in previous studies (e.g., Jagacinski & Nicholls, 1987; Dweck & Repucci,1973), these students also reported feelings of competency, belonging, meaning and pride. Competition oriented students were similar to learning students in their use of both types of strategies, and to a lesser degree, their perceptions of a mastery oriented class and their preference for challenging activities. It appears that the reported measures of affect and emotion for competition oriented students differed from learning students in two ways - competitive students were more likely to feel pressure and less likely to experience happiness. It is reasonable that they might feel pressured to establish their superiority over others, and to maintain this status. Perhaps their happiness is dependent upon this and thus vulnerable to lapses of down times.

The similarities between these two groups of students imply that they are not as different from one another as previous research has consistently indicated (e.g., Dweck & Repucci, 1973; Nolen,1988; Dweck & Leggett,1988). As discussed earlier, this study's factor analysis yielded six, not two, goal orientation factors. It seems likely that students who would have been labeled as performance oriented now fall under one of these other five labels - competition, failure avoidance, work avoidance, please-the-teacher, and look-smart. Other researchers (eg., Diener & Dweck, 1978; Swidler & Deiner, 1983) have suggested the possible existence of performance oriented students who, given specific circumstances, manage to pass as mastery oriented. It is possible that some of the competition students identified in this study would have been included in this category in previous studies because of their resemblance to their learning oriented peers.

Sporting events are competitive by nature, and similarly, competitive students might perceive the classroom setting as yet another arena in which to assert their (intellectual) superiority. Elliot and Dweck (1988) suggested that performance students with high ability perceptions do not back down from challenges. Indeed, if one wishes to be a part of a winning team, one must be prepared to stand up to a challenge. Following this reasoning, it seems natural to expect that students who compete within the classroom must also be prepared to face challenges, thus explaining the positive correlation between competition scores and a preference for challenge. Of course, if one wishes to prove superiority over others, one must be willing to take necessary actions - that is, engage in behavior that ensures success. For competition oriented students, this translates into engaging in any type

of learning strategy, deep or shallow, that will help them to achieve that goal. By working hard to succeed, one is likely to experience pride and positive affect. These feelings are likely to intensify if success occurs.

Competitive students' feelings of competency might arise from the knowledge that they have invested time and effort preparing for success (studying, etc.). Then again, competency might be a precursor for success in that feelings of competency guarantee success. Activities such as positive self-talk might increase one's chance at being successful by instilling a sense of self-confidence and competency. Of course, because competitive students wish to prove their superiority over others, it seems logical to assume that some form of pressure accompanies this. Competitive students did perceive the classroom as mastery oriented, though not as strongly as learning students. Perhaps, the classroom environment is irrelevant to these students. They are so intent on competing that they fail to take notice of their environment.

The results of the correlation analysis suggest that the differences between learning and competitive students in this study are subtle. Both groups of students reported feelings of competency, belonging, meaning and pride. However, one must interpret these results with caution. There is no doubt that learning and competitive students strive to achieve and succeed for different reasons. Learning students are interested in increasing their competency, whereas competitive students are focused on proving their superiority.

By exploring these students' emotions and affect in more detail, additional information might emerge regarding their differences. Perhaps learning students experience these

feelings differently. Their feelings of competency, belonging, meaning and pride are not dependent or influenced by the achievement of their goal and are fairly stable across time and situations. However, competitive students' experiencing of these feelings may be influenced by the achievement of their goal. They may be more likely to experience positive affect when they believe they are on the road to proving their superiority.

The correlation analysis yielded results consistent with previous studies on characteristics of students pursuing a work avoidance goal (Duda & Nicholls, 1992). Students with higher work avoidance orientation scores were less likely to find meaning with the school experience. This is not surprising considering their goal is to avoid work at all costs. It is unlikely that one will choose to avoid something that is of meaning to the individual. Although there was no correlation between a work avoidance score and affect scores, these students did report experiencing some pressure. Even though the correlation between a work avoidance orientation and feelings of pressure was weak, its' presence suggests that some of these students do, at times, experience pressure - possibly a result of their decision to avoid working. There is little doubt that educators are apt to notice these students, and to do everything in their power to motivate them. This may be a source of pressure to these students.

Work avoidance students were less likely to engage in deep processing strategies, and were even more unlikely to attempt challenging tasks. All of this makes great sense. Work avoidance students appear to have made their decision to avoid work. By definition, challenging tasks require great effort - something these students are unwilling to exert.

Thus, the negative correlation between a work avoidance score and reported use of deep processing strategies is expected. Indeed, it might be argued that these students pose the greatest challenge to teachers because of their obvious decision to avoid work. Chances are, work avoidance students are often perceived as lazy, or trouble makers. If they would even attempt to succeed, then their teachers might have some information on which to base a positive evaluation.

There was a weak, but positive correlation between a failure avoidance orientation and feelings of belonging, meaning and pressure, as well as reports of happiness and stress. If these students' goal is avoid failure, then one would expect some degree of pressure and stress to accompany this pursuit. As with competitive students, it is likely that positive affect and happiness would be dependent upon the achievement of this goal - thus the low correlations. Achieving these goals may strengthen positive affect; however, failing to accomplish these goals may also threaten positive feelings.

Failure avoidance students did report using shallow processing strategies; however, their choice of strategies implies that they are not competent at choosing, or are refusing to choose, the more effective strategies. One might expect these students to make it a priority to search out and try new strategies that ensure success; however, as suggested by Covington (1984), these students may be using inappropriate strategies such as procrastination, not trying and excuses. Covington (1984) might argue that by sticking with less effective strategies, and avoiding challenging tasks, these students are protecting self-worth. If they

meet with success, all is well because they have achieved their goal. However, if they meet with failure, they can argue that they hadn't really tried hard enough.

A please-the-teacher goal orientation was identified which, in previous studies, might have been labeled as a performance orientation. Students striving to please their teachers reported feeling a sense of belonging and associated meaning to the school experience. They experienced pride and happiness. Not surprisingly, this goal orientation was associated with feelings of pressure. Perhaps, this pressure is a direct result of these students' desire to please their teachers in that they feel that they must de well and do their work if they are to achieve this goal. Maybe a please-the-teacher orientation is adapted as a means to offset the pressure these students experience (they feel that by pleasing their teachers, they will do better in the classroom).

The positive correlation between a please-the-teacher orientation and belonging, meaning, pride and happiness is not surprising. Once again, these positive emotions and affect might be dependant upon the achievement of this goal. Perhaps pleasing the teachers instils a sense of pride in these students, such that they feel as if they belong, which gives meaning to the school experience. To maintain these feelings, they may feel pressured to continue pleasing their teachers. Blumenfeld (1992) suggested that the desire to receive adult approval can be quite strong among the young. If this is true for please-the-teacher students, then perhaps this goal orientation, though not ideal, might lead to the more desired goal of learning for the sake of increasing competence. Maybe, these students are more willing to embrace their teachers' suggestions for academic success - recognizing the role of effort, and improving their study

strategies. Perhaps they are in a prime position to learn, through example, to appreciate the intrinsic value of increasing knowledge. The low, but positive, correlation between please-the-teacher orientation scores and use of shallow processing strategies suggests that these students are trying to succeed. The absence of a correlation with preference for challenge might suggest that these students' desire to please their teachers is at risk should they fail at difficult tasks. Perhaps they feel incapable of succeeding at these activities as is suggested by the absence of a correlation between competency and a please-the-teacher orientation.

There was a positive correlation between a look-smart orientation and the feelings of belonging and pressure and the emotions of happiness and stress. Once again, it might be that these students believe that by looking smart, they will achieve a sense of belonging. Thus, a need to belong may drive this goal pursuit, and achievement of their goal helps to maintain this feeling. Looking smart may also strengthen feelings of belonging and promote feelings of happiness. However, their happiness may be at risk when they believe that they look dumb. It is not surprising that these students experience pressure and stress if one accepts the argument that these students' feelings of self-worth would be threatened should they appear stupid to others. There was no correlation between the reported use of shallow and deep processing strategies and a look-smart orientation. One might be surprised by the absence of a positive correlation; however, it is possible that these students do not engage in these study methods, or want others to think they do not, as a means of protecting their

image. They might fear studying and failing because of the implications of looking dumb. On the other hand, if they do well without studying, they have proven their intellectual superiority to others.

Cluster Analysis

The cluster analysis provided information supporting previous research investigating the possibility of multiple goals (eg. Seifert, 1995; Meece, 1994). The cluster analysis of the learning, competition, work avoidance, failure avoidance, please-the-teacher, and look-smart orientation scores resulted in five distinct clusters: Each cluster was best characterized according to the emergent dominant goal such that cluster 1 had a failure avoidance orientation, cluster 2 had a work avoidance orientation, cluster 3 was a combination of competition and please-the-teacher orientations, cluster 4 was learning oriented, and cluster 5 was a second work avoidance group.

Cluster descriptions

Cluster 1 (failure avoidance) students are best described by a need to avoid failure. These students' desire to appear smart to others, please their teachers and compete out weighed their wish to avoid work. Previous research has identified a group of students similar to these failure avoidance students. Deiner and Dweck (1978) described a group of "overly action oriented" children similar to helpless children in their perception of failure and choice of strategies. Swidler and Deiner (1983) identified a group of "overpersisters".

Seifert (1995) has suggested that failure avoidance students' goal pursuit may best be explained by Covington's (1984) self-worth theory. Failure avoidance students are motivated to avoid failure and low ability judgements in an attempt to protect their self worth. If this is the case, it is not surprising that failure avoidance students in this study were also interested in looking smart, pleasing their teachers, and competing. If they were to avoid working, then these goals would be jeopardized. As far as they are concerned, by avoiding failure they will look smart and please their teachers. They may compete in order to protect their self-worth because avoiding competition would be an admission of inability and failure. On the other hand, perhaps failure avoidance students believe that looking smart and pleasing teachers will help them achieve their goal. Choosing to avoid work may result in displeasing the teacher, thus it might be utilized as a strategy only when one believes that one is incapable of achieving success. It this occurs, failure at a task cannot be attributed to the student's inadequate efforts, thus perceptions of low ability are avoided. Unfortunately in their quest to avoid failure and its implications, these students have apparently given up on learning.

Cluster 2 is one of two work avoidance clusters. These students were primarily concerned with avoiding work; however, they also expressed a desire to look smart and learn that surpassed their need to compete and avoid failure. Nicholls (1984) suggested that students who are ego-involved with low ability perceptions are likely to adopt work avoidance orientations. The students in cluster two appear to match this description. Perhaps they, too, pursue their goal with hopes of protecting their self-worth judgements as well. By avoiding work they have also avoided low ability judgements from others given that they fail

at the task. If, however, they should succeed without having exerted any effort, they will have protected self-worth and maintained the appearance of looking smart. On the other hand, competing with others carries with it the risk of failure and damage to perceptions of self-worth; thus, these work avoidance students' desire to compete is not as strong as their need to learn and look smart. If nothing else, at least these students may still want to learn; however, no doubt their need to avoid work interferes with this process. Despite this, their desire to learn might be their saving grace; however, their work avoidance techniques sabotages the achievement of this subgoal which, in turn, may damage self-worth perceptions. Work avoidance 1 students need intervention, otherwise they risk losing their desire to learn altogether.

One might argue that this first group of work avoidance students are similar to failure accepting students described by Covington (Covington & Omelich, 1984) and identified by Dweck (Diener & Dweck, 1978). Perhaps these work avoidance students have developed a work avoidance goal as some sort of defense mechanism. Why bother to exert any effort when one believes that one will meet with failure anyway? Not only does it imply that these students lack confidence in their ability to meet with success, it also suggests that they have very distorted views on the role of effort in learning. Unfortunately, they are setting themselves up for failure.

Students in cluster 3 were best described by their desire to please their teachers; however, their need to outperform others was stronger than their desire to learn, avoid failure and avoid work. Thus, these students were characterized as please-the-teacher/competition oriented.

No doubt they compete to win, thus the avoidance of failure is implied in the achievement of this goal. Avoiding work may interfere with their goal pursuit and learning might actually occur as an added benefit to the attainment of their primary goals. Their look-smart scores did not differ from their competition scores. Of course, please-the-teacher/competition students will look smart if they outperform others and this may also help them in their quest to please their teachers.

Cluster 4 identified a group of students who appeared to be mastery oriented. They were also characterized by feelings of competency and an appreciation of the schooling experience that was greater than their need to belong and their experiencing of pressure. Perhaps, the learning students' need to increase their repertoire of knowledge overshadows any desire to feel as part of the gang. In fact, their desire to learn might actually set them apart from the rest of the class thus, any attempt to fit in with their peers may interfere with their goal pursuit. Seifert (1996) provided evidence that emotions can predict goal pursuits. Therefore, it is possible that these students' strong sense of self, or competency, together with the value they place on the schooling experience gives rise to a mastery goal orientation. Also, mastering new material enhances perceptions of competency and meaning. Indeed, no other cluster was identified by these traits.

In addition to pursuing a work avoidance goal, the students in the second work avoidance group, cluster 5, also expressed little interest in learning. One would expect these students to pose the greatest challenge to their teachers because they have no desire to learn or work. These students were also more likely to experience stress than pride. Perhaps the stress they

experience is a direct result of their goal pursuit. It is doubtful that they can remain in the classroom without bearing the brunt of harsh criticism from their teachers. Of course, given their lack of effort, what do they have to be proud of? For the same reason, it is hardly surprising that these students were more likely to feel pressured than competent. On the other hand, these students' goal orientation might be a direct response to feelings of stress and pressure; however, continuing to avoid work does nothing to reduce these negative feelings thus a negative response pattern is set up. Unlike their work avoidance 1 peers, students in the second work avoidance cluster were not concerned with protecting their self-worth. As a result, they may not feel the need to protect themselves from negative judgements from others. This might be the key to understanding what distinguishes these two groups of students from one another.

Not surprisingly, work avoidance 2 students perceived the classroom environment as ability oriented. Quite simply, this might be a reflection of a very negative attitude these pupils have developed. No other cluster held this perception (nor did the other clusters perceive the classroom as mastery oriented). Work avoidance 2 students' perception of the classroom environment might be influenced by other factors - their lack of effort, the lack of value they place on learning and schooling, and feelings of incompetency. Obviously, such behaviors and beliefs would result in a very negative attitude. Such an attitude no doubt has a negative influence on these students' relationship with their teachers. Teachers may be and are irritated by these students' behavior and students may not appreciate, or want,

their teachers to bug them about their choices. Thus, their relationship is most likely tense and strained, and far from ideal.

Between groups contrasts of goal orientation

Not only were failure avoidance students best defined by their goal of avoiding failure, their need to accomplish this goal was greater than both work avoidance groups and the learning group, but did not differ from students pursuing please-the-teacher/competition goals. By referring to Figure 3.3 , one can see that the profiles for the failure avoidance and please-the-teacher/competition clusters are quite different. Please-the-teacher/competition students' please-the-teacher and competition scores surpassed their own failure avoidance scores, as well as the failure avoidance students' please-the-teacher and competition scores.

The work avoidance 1 students' work avoidance scores were greater than the remaining four clusters. Thus, even though these students had two secondary goals of looking smart and learning, their dominant goal of avoiding work was greater than the other clusters including the second work avoidance cluster. The second work avoidance cluster's work avoidance goal however, was greater than the remaining three clusters. The profiles for both work avoidance clusters (refer to Figure 3.3) shows that despite the fact that these two clusters were characterized by work avoidance goals, they are quite different from one another. The first work avoidance cluster's learning, competition, please-the-teacher and look-smart scores were higher than those of the second work avoidance group. The first group of work avoidance students also pursued learning and look-smart subgoals, whereas the second work avoidance group's learning score was the lowest of all the clusters. Unlike

work avoidance 1 students who apparently adopted a work avoidance goal as a means of protecting self-worth, work avoidance 2 students appear to have adopted this goal for other reasons.

Although cluster 3's please-the-teacher scores were greater than their competition scores, their scores on these two goals were quite higher than those of the remaining clusters (refer to Figure 3.3). Interestingly, please-the-teacher/competition students had the highest look-smart scores, and had one of the two highest failure avoidance scores. Their look-smart and competition scores did not differ. Perhaps these students believe that looking smart and asserting their superiority over others may be two ways of pleasing their teachers. It is not so surprising that they would have high failure avoidance scores relative to the other clusters if avoiding failure is yet another way of pleasing teachers, implies successful competition, and helps them look smart.

Cluster 4's learning goal was greater than the second work avoidance group only; however, one must interpret this result only after examining the learning group's profile and how it compares with the remaining clusters (refer to Figure 3.3). It is quite apparent that the learning group's profile is quite distinct. Despite not having the highest learning goal scores, the learning group's learning goal dominates its profile. Obviously, these learning students are primarily concerned with increasing their competence and learning for its own intrinsic value. In fact, these students had the lowest failure avoidance and work avoidance scores. Their please-the-teacher scores were one of the two lowest groups of scores, and their competition scores were one of the three lowest.

Between groups contrasts of affect

Students in the second work avoidance group were less likely to feel competent than the other four clusters, including their work avoidance 1 peers. Surprisingly, the learning group's reported level of competency did not surpass any of the other clusters. By saying one feels competent, students are admitting that they do not feel stupid, have trouble with school work, or find school work hard. Seifert, Bulcock, and Schultz's (1996) report on findings from a survey of 8120 grade eight students in Newfoundland and Labrador indicates that 70% of these students rate their competency as very high. Perhaps this is the "norm" for Newfoundland students. One conclusion is that students in all groups except for the second work avoidance group feel relatively competent, at least as measured by this questionnaire. Such a conclusion implies that the scale is absolute, which is an inaccurate assumption. Another possible explanation is that learning students were more conservative with their responses than the other students. Learning students have nothing to prove to anyone regarding their ability; however, admissions of incompetency by the other students might interfere with their goal pursuits. For example, admissions of incompetency may be perceived by failure avoidance students as an admission of failure, might make work avoidance 1 students look stupid, and displease please-the-teacher/competition students' teachers.

Exploring competency in more detail might provide additional insight. For example, examining the direction of the relationship between competency and goal orientation might make things clearer. Research on goal theory has suggested that goal orientation predicts

affect (Dweck & Leggett, 1988). Seifert (1996*a*) re-analyzed data collected in an earlier study (Seifert, 1995) with hopes of providing support for the claim that emotions drive goal pursuit. Two models were postulated. In model 1, emotions were postulated to be predicted by goal orientation; whereas, in model 2, emotions were considered to be causes of goal pursuit. Model 2 was supported, thus suggesting that goal pursuits may be defense mechanisms responding to emotions experienced.

Assuming that emotions are not only outcomes, but may also give rise to goal pursuits, then it becomes necessary to explore the relationship between affect and goal orientation keeping this in mind. Although learning students did not report feeling more competent than their peers, this is not to say that they experience competency the same as their peers. Unlike the performance students, learning students's perceptions of competency may not be threatened when they encounter difficulties as they strive to achieve their goal. Thus, competency may be fairly stable for those with learning pursuits.

Unfortunately, students in the other clusters may engage in maladaptive response patterns as they strive to establish and maintain competency perceptions. For example, should failure avoidance students fail, feelings of competency may suffer. Once this occurs, failure avoidance students may feel the need to repair the damage by increasing their efforts to avoid failure.

Although work avoidance 1 students were mostly interested in avoiding work, they also expressed a desire to look smart and learn. These students may have chosen their goal of avoiding work believing that success without effort will help them look smart, thus increase

competence. It may be the case that a perception of competency is necessary for these students to pursue their goal. That is, work avoidance 1 students may actually believe that they are capable of doing well without working hard; however, if they do not do well, failure can be blamed on lack of effort and feelings of competency are not threatened.

As with failure avoidance students, please-the-teacher/competition students' perceptions of competency might become damaged should they fail to achieve their goals. This may strengthen these students' need to achieve their goals. It is also possible that competency perceptions may also drive these students' goal pursuit. Please-the-teacher/competition students may believe that they can outperform others before actually attempting to do so, thus the risk of displeasing their teachers is minimal.

Seifert, Bulcock, & Schultz's (1996) report found that 40% of grade eight Newfoundland students reported high meaning to their work, whereas the remaining students reported school as having low to moderate levels of meaning. Seifert *et al.* (1996) suggested that this lack of meaning will translate into motivational problems. If this is so, how does one explain that the learning students' reported level of meaning surpassed the work avoidance 2 students only? Thus, even though learning students experienced more meaning than belonging and pressure, they did not perceive the schooling experience as being any more or less interesting or useful than their peers. Once again, this variable needs to be explored in further detail. It is possible that these students do not find their school work particularly meaningful, but strive to achieve in spite of this. Perhaps their desire to learn is not dependent on the meaning they find in school work. If this is so, the need to study mastery oriented students in more detail

is vital. They might possess a certain something not measured by this questionnaire and overlooked by other researchers. It is also possible that the items measuring meaning need to be re-evaluated.

Please-the-teacher/competition students found school more interesting and useful than failure avoidance and both groups of work avoidance students. Meaning might be predictive of their goal pursuit. It seems pointless for someone to strive to prove their superiority in a situation that holds no value. Also, if school had no meaning for these students, why would it matter what their teachers thought of them? On the other hand, by achieving their goals perceptions of meaning may not only maintained, but intensified.

As expected, work avoidance 2 students were less likely to find school meaningful than their failure avoidance, please-the-teacher/competition, and learning peers. Of course, school would have little to no meaning to someone who has no desire to learn. One would expect similar results for work avoidance 1 students as well however, work avoidance 1 students reported higher levels of meaning than students in the second work avoidance group. This is yet another way that these two clusters differ. If, as argued, work avoidance 1 students have some interest in learning and looking smart, then it is not entirely surprising that they find some meaning in school.

Learning students' reported sense of belonging was lower than all clusters but the work avoidance 2 cluster. The achievement of their learning goal may, in no way, be influenced by whether or not learning students feel as though they are important part of the class. Also, learning students may not pursue their goal with the hopes of belonging. Please-the-

teacher/competition students' higher reported levels of belonging makes sense when you consider that they are concerned with impressing their teachers. For please-the-teacher/competition students, belonging might be somewhat dependent upon the achievement of their two goals. In other words, pleasing their teacher and outperforming others are two ways of helping them feel as though they are an important part of their class. Also, feelings of belonging may be strengthened with the achievement of their goals.

As expected, the failure avoidance, work avoidance 1 and please-the-teacher/competition students reported higher levels of pressure than the learning students. Learning students' desire to master material may not be dependent on outside factors. Chances are, any pressure they experience is self-inflicted (i.e., to reach personally set goals). Failure avoidance students may feel pressured to avoid negative judgements from others; work avoidance 1 students may feel pressured to defend self-worth; and competition/please-the-teacher students feel pressured to compete successfully, thereby pleasing their teachers. Learning students did not experience less pressure than work avoidance 2 students; however, it is not all that surprising when you consider that students in the second work avoidance group have little to no desire to learn. They apparently have made a conscious decision to avoid work. If this is a deliberate decision they choose to live with, then wherein lies the pressure?

Between groups contrasts of emotion

Please-the-teacher/competition students' perceptions of pride surpassed students in the failure avoidance, learning and both work avoidance groups. Also, please-the-

teacher/competition students experienced more happiness than students in the learning cluster and both work avoidance clusters. Perhaps the pride and happiness please-the-teacher/competition students experience is a direct result of achieving these goals. They may take pride and are happy pleasing their teachers. Of course, it is also possible that they strive to please their teachers and do better than others in order to maintain their feelings of pride and happiness.

Surprisingly, learning students did not experience less stress than any of the other clusters. In fact, work avoidance 1 students actually experienced less stress than all students except those pursuing a learning goal. Perhaps work avoidance 1 students feel confident that their work avoiding techniques are their best defense for threats to self-worth and ability perceptions. If they succeed, they will look smart however, if they fail they will not look dumb. Thus, work avoidance 1 students may feel minimum levels of stress. If, indeed, the failure avoidance, please-the-teacher/competition, learning and work avoidance 2 students experienced similar levels of stress, this suggests a need to examine the sources of their stress in more detail. Such information may help determine how these clusters differ from one another and may provide more insight into their make-up. For example, work avoidance 2 students' goal pursuit sets them up for negative interactions with their teachers thus, some of their stress may be a result of their interactions with their teachers. On the other hand, work avoidance 2 students' goal pursuit may be, in part, in response to the stress they experience in school. If this is so, no doubt the relationship between teachers and work avoidance 2 students reinforces and feeds this negative cycle.

Chances are, failure avoidance and please-the-teacher/competition students also experience some stress as a result of their goal pursuits. It is also possible that these students are pursuing their goals with the hopes of offsetting some of the stress they experience. Of course, this argument may also hold true for learning students. The difference between students pursuing a learning goal and those pursuing performance goals may lie in their responses to stress. For example, learning students may respond to stress positively by taking action to solve the problem. Thus, their goal pursuit and feelings of competency are not threatened. Students in the other clusters may also attempt to reduce stress however, their responses may not be as adaptive. For example, failure avoidance students may try harder at avoiding failure and work avoidance 2 students may withdraw their efforts further. Such attempts may, unfortunately, increase stress.

Between groups contrasts of classroom environment

Students in the failure avoidance and please-the-teacher/competition groups were more likely to perceive the classroom as learning oriented than those in the first work avoidance group. One might expect this relationship to exist with the second work avoidance group as well. Perhaps, if work avoidance 1 students admit that their classroom is constructed to promote learning, then they are left to explain their choice of work techniques. Explanations would point the guilty finger at them, thus threatening feelings of self worth and competency.

Although it was expected that learning students would be more likely to perceive their classroom as mastery oriented than their peers, this was not so. Perhaps it is the "norm" for Newfoundland classrooms to be structured in a mastery oriented manner. Seifert, Bulcock

& Schulz (1996) reported that 60% of grade eight students find teachers to be helpful, supportive and caring - the same conditions necessary to the creation of a mastery oriented environment. Perhaps, this perception persists throughout the schooling experience. Too few classrooms were sampled in this study to make such a conclusion however, considering that Seifert, Bulcock and Schulz's (1996) sample consisted of 8129 students, it is possible that similar results would be found in the higher grades. It is a question worth exploring. One's goal orientation might be fairly well established by the time students reach junior high school, and attempts to teach the importance of mastering new skills and information as a means in itself requires more effort than creating a mastery orientated environment. This is not to say that such efforts would be wasted. Indeed, this is an invaluable part of the learning process; however, limiting one's focus to this might be underestimating the challenges accompanying the promotion of learning goals and overestimating the influence of the classroom environment on student goal formation.

Perhaps the key lies in exploring the relationship between the teacher and the student. If Newfoundland students do find school an OK, but not terrific place to be (Seifert, Bulcock, and Schultz, 1996), then perhaps the challenge is to work harder at improving the school experience. It stands to reason that given students' positive perceptions of their teachers, then their teachers might be in a position to help promote mastery goals. Seifert *et al.* (1996) suggested that school and teachers are in a position to influence students' desire to learn. Given the results of their report, it appears that Newfoundland schools are on the road to achieving this goal however, they are in need of fine tuning. Thus, the need to explore the

relationship between teachers and their students might provide information that will assist educators in their quest to create self-motivated learners.

Even if teachers do present themselves as caring and supporting to the majority of the students, there are others who may fail to see this. Both groups of work avoidance students makes things harder for themselves. For example, work avoidance 2 students are without a doubt the most challenging students to reach because of their decision to avoid work and attitudes to learning. Teachers might find it more difficult to be supportive and patient with these students. Work avoidance 2 student's perceptions of the classroom and their negative attitude toward learning might be in response to their beliefs that they are incompetent. The key to helping these students might be to focus on feelings of competency and meaning. Their teachers are in a position to do this however, it is a challenge compounded by large class size and heavy teacher work loads. Thus, work avoidance 2 students are of great concern and are more likely at risk of dropping out of school altogether. There is no doubt, that they need to be examined in more detail.

Unlike students pursuing the second work avoidance goal, work avoidance 1 students still have some desire to learn. Even though they were less likely to perceive the classroom as mastery oriented than failure avoidance and please-the-teacher/competition students, unlike work avoidance 2 students, work avoidance 1 students were not characterized by perceptions of an ability oriented classroom. This provides hope that work avoidance 1 students might be able to benefit from their teachers' influence in a positive way - once again stressing the importance of exploring the role of the teacher-student relationship. Despite wanting to learn,

feeling more competent and valuing school more than their work avoidance 2 peers, the very nature of the work avoidance goal and its implications puts the work avoidance 1 students at risk of becoming more like their peers pursuing the second work avoidance goal. Students pursuing the first work avoidance goal need to be taught that the benefits of working and succeeding far outweighs the benefits of success without any effort. Undoubtedly, work avoidance 1 students can experience only so many failure before their feelings of competency are threatened. If, as argued earlier, work avoidance 1 students' perception of competency give them confidence to pursue their work avoidance goal because of their belief that they will succeed and accomplish their learning and look-smart subgoals, then it stands to reason that any threats to competence may have a detrimental effect on their learning subgoal.

Between groups contrasts of learning strategies

The results of the cluster analysis indicate that all five groups of students did not differ from one another on their reported use of deep and shallow processing strategies. It is not all that unreasonable that the failure avoidance and please-the-teacher student would utilize any type of strategy ensuring success. Use of effective study skills would increase failure avoidance students' chance of avoiding failure and help ensure that please-the-teacher/competition pupils will meet with success. In fact, please-the-teacher/competition students might be more likely to listen to their teachers' suggestions and employ strategies teachers suggest because of these students' need to impress and please others.

Learning students were expected to use more deep processing strategies than their peers. It is possible that the deep processing strategies used by learning students may not have been

targeted by this questionnaire. Perhaps learning students engage in study skills unique and specific to them. That is, their ability to develop and implement study strategies when the need arises is advanced when compared to their peers. Maybe, there should have been some space provided on the questionnaire to allow students to list other methods of studying.

If work avoidance students have adopted the goal of avoiding work, then why didn't the cluster analysis indicate that they use less deep and shallow strategies than the other clusters? By referring to the questionnaire, one can see that work avoidance students were identified by their desire to do only what is necessary, to do the least amount of work possible to get good grades, and to study only enough to take a test. Implied in these responses is that these students do study; however, because they put in minimal effort, one would expect these students to use the less effective strategies. If students pursuing the first work avoidance goal still have some desire to learn (as indicated by the within groups contrast), then one might expect them to occasionally attempt such strategies.

Comparisons of Factor and Cluster Analysis

The data collected for this study was subjected to a factor-correlational and cluster analysis to determine if these methodologies would produce different interpretations. Although these two methods did yield similar findings, contradictions between the methodologies were evident. The cluster analysis indicated that failure avoidance students had stronger feelings of belonging than work avoidance 2 and learning students; got more meaning out of school than students in the second work avoidance cluster; and experienced more pressure than learning students. Failure avoidance students also reported higher levels

of happiness than both work avoidance students and learning students and felt more stress than work avoidance 1 students.

Indeed, there were positive correlations between a failure avoidance orientation and each of these variables. The factor analysis did however, indicate that there was a stronger relationship between a learning orientation and belonging, pressure and happiness. How does one explain this? It is possible that the cluster analysis identified students as failure avoidance who did not fall into this category with the factor analysis, thus strengthening the relationship between a failure avoidance orientation and some of these variables. For example, even though a look-smart orientation emerged from the factor analysis, the cluster analysis did not identify such a group. Perhaps, some of the look-smart students now meet the criteria of failure avoidance students as identified by the cluster analysis. A closer look at the correlations shows that students pursuing look-smart and failure avoidance orientations are very similar to one another. For example, both groups experienced belonging, pressure and happiness (correlations being stronger with the look-smart orientation). The possibility of some look-smart students being characterized as failure avoidance as a result of the cluster analysis is not entirely far fetched considering that students in the failure avoidance cluster had the highest look-smart scores.

Although there was a negative correlation between a work avoidance orientation and meaning, work avoidance 1 students experienced less meaning than please-the-teacher/competition students only. Despite the factor analysis-correlational methodology's

suggestion that work avoidance scores were associated with the experiencing of pressure and negatively associated with use of deep processing strategies, the cluster analysis indicated that there were no statistical differences between the first work avoidance group and the remaining four clusters on these variables.

The cluster analysis suggested that work avoidance 2 students experienced more pressure than competency, and perceived the classroom as ability oriented. They were also less likely to derive meaning from the schooling experience than their failure avoidance, please-the-teacher/competition and learning peers. According to the correlation analysis, higher work avoidance orientation scores were associated with higher levels of pressure, whereas there was no relationship with competency. Also, students with higher work avoidance scores were less likely to perceive the classroom as mastery oriented and to believe that school is meaningful. However, even though work avoidance 2 students were more likely to experience stress than pride, there were no statistically significant correlations between a work avoidance score and stress and pride.

As discussed earlier, a correlational analysis may overlook many possibilities. The emergence of two work avoidance clusters suggests that there was more than one group of students pursuing a work avoidance goal as identified by the factor analysis. A low to zero correlation between a work avoidance orientation and perceptions of the class as ability oriented might be interpreted as meaning that there is no relationship between the two. However, the cluster analysis indicated that students in the second work avoidance group

actually perceived the class as ability oriented, whereas their work avoidance 1 peers did not. Thus, although these two clusters pursue a work avoidance goal, they differ from each in important ways. By the same argument, despite the fact that the correlational analysis yielded a fairly strong negative correlation between a work avoidance orientation and meaning this is not to say that both work avoidance clusters will be less likely to place value on schooling than their peers. Even a moderate to strong correlation does not mean that all students within the group will experience the targeted affect.

In general, the factor analysis-correlational and cluster analysis methodologies yielded similar results for please-the-teacher/competition students. Before discussing this any further, it is important to acknowledge that the please-the-teacher/competition cluster represents a group of students who pursue two goals. A closer examination of the correlations between competition and please-the-teacher orientation scores and the motivational construct scores shows that the results are quite similar. With the exception of the correlations between these two goal orientation scores and competency and use of shallow processing strategies, the remaining correlation scores are within the same direction although they may differ in strength. There is a fairly strong correlation between a competition orientation and competency, whereas a please-the-teacher orientation is not associated with competency.

Students in the please-the-teacher/competition cluster experienced more pride than any of the other four clusters, and correlations between this emotion and competition and please-the-teacher scores were positive. Positive correlations existed between these two goal

orientation scores and belonging, meaning, happiness and pressure. The a priori between groups contrasts indicated that please-the-teacher/competition students experienced more belonging than any other group of students, more pressure than the learning and work avoidance 2 students, more meaning than both groups of work avoidance students, and more happiness than students in the work avoidance 1, work avoidance 2 and learning groups. Higher competition and please-the-teacher scores were associated with perceptions of the class as mastery oriented and the use of shallow processing strategies. Please-the-teacher/competition students were more likely to perceive the class environment as mastery oriented than work avoidance 2 students, but did not differ from the other clusters on their use of shallow processing strategies. Although higher competition and please-the-teacher scores were associated with greater use of deep processing strategies, please-the-teacher/competition students did not differ from their peers on this.

The emergence of please-the-teacher/competition cluster indicates that a cluster analysis can identify groups pursing multiple goals. Thus, what appears as an insignificant and unimportant relationship in a correlation analysis, can take on new meaning in a cluster analysis. For example, a weak correlation between a competition score and happiness would normally be overlooked. However, students with a please-the-teacher orientation merged with competition students to form a please-the-teacher/competition cluster. As a result, happiness now becomes a way of distinguishing students pursuing please-the-teacher/competition goals from their peers.

Higher learning orientation scores were associated with higher levels of positive and negative affect. The cluster analysis supported these results. Learning students were more likely to feel competent and to derive meaning from school than they were to feel like one of the gang, or to experience pressure. Indeed, students pursuing a learning goal experienced lower levels of belonging than failure avoidance, work avoidance 1 and please-the-teacher/competition students and less pressure than students pursuing failure avoidance, please-the-teacher/competition and work avoidance 2 goals. Learning students also experienced more competency and meaning than their work avoidance 2 peers.

Contradictions between these methodologies also exist. Higher learning scores were associated with increased usage of deep and shallow processing strategies, experiencing of pride and happiness, and perceptions of a mastery oriented class environment. The cluster analysis suggested that this is not so. Learning students' reported use of shallow and deep processing strategies did not differ from their peers, and learning students experienced less happiness than failure avoidance and please-the-teacher/competition students. Students pursuing a learning goal were no less or no more likely to experience pride and perceive the class as mastery oriented than their peers.

Implications

As with other studies (Seifert, 1995, Meece, 1994), a comparison of the interpretations of the two methodologies in this study emphasizes the need to use a cluster analysis in order to provide more accurate and detailed profiles of students and the goals they pursue. The results of the cluster analysis suggest that interactions among constructs are possible and need

to be explored further. Also, the results suggest that non-statistically detectable correlations do not necessarily mean that there is no relationship between two variables. To the contrary, this study has proven that despite a low correlation, interactions among constructs may be occurring and needs to be examined in more detail. Of course, increasing the sample size might help to provide more detailed portraits of the different groups of learners.

As a result of this study important possibilities emerged which, if examined in more detail, may lead to refinement of motivation goal theories. When discussing the results of the factor analysis-correlational and cluster analysis methodologies, it was suggested that affect and emotions might be factors that helps determine goal pursuit. Exploring the possibility that emotions may be predictive of goal pursuit helped to clarify some of the findings in this study. For example, please-the-teacher/competition students experienced more pride and belonging than any of the other groups. It was argued that these emotions may be partly responsible for driving these students towards their goals. Students in the second work avoidance group experienced less competency than the other four clusters. It is not all that unreasonable to suggest that these feelings of incompetency may give rise to these students' goal orientation. In fact, this might be what ultimately distinguishes these students from their work avoidance 1 peers.

If, indeed, emotions may play some role in predicting goal pursuit, what emotions give rise to a failure avoidance, work avoidance 1 or a learning orientation? When answering this, one must keep in mind that the argument is not that emotions alone give rise to goal pursuit.

Instead, even though previous studies have focused on emotions as being outcomes of goals, now there is evidence that emotions may also play a part in encouraging specific goal pursuits.

Seifert (1996*b*) conducted a study to examine the stability of goal orientation and characteristics. Data collected in October and March of the same school year was subjected to a correlational methodology and a combination of a cluster analysis and repeated measures methodology . These two methodologies yielded slightly different interpretations of the same data and the cluster analysis revealed that there were different groups of students showing different patterns of behavior over time. Seifert (1996*b*) suggested that the stable constructs of worth and ability perceptions might be the best predictors of motivation.

It was argued that the learning students in this study may respond to threats against competency perceptions more positively than the other four groups of students. Perhaps this is so because students pursing a learning goal have more stable perceptions of competency. Also, unlike learning students, failure avoidance, work avoidance 1, and please-the-teacher/competition students may be concerned with protecting self-worth. If these three groups of students' perceptions of competency are not stable one would expect these students' feelings of competency to be threatened when they fail to reach their goals. Given these possibilities, not only is it necessary to study the direction of the relationship between goals and emotions, there is a need to continue to explore the stability of emotions and goals over time.

Another important conclusion emerged. It has been suggested that meaning may play an important role in promoting learning goals (Seifert, Bulcock & Schultz, 1996). The results

of this study indicate that even though learning students were characterized by a tendency to experience meaning, they did not experience any more or less meaning than any of the other clusters of students. This is not to say that enhancing the school experience will not encourage more healthy approaches to learning. As pointed out, there is little doubt that teachers are in a position to help bring some meaning to the schooling experience for students. There is a need to explore, in much more detail, the role or influence that teachers may have over their students. By the same token, if ability and worth perceptions promote motivation, teachers may still play some role in improving students' ability and worth perceptions.

Another area in need of improvement in this study lies with the questionnaire. Given that goals may not be stable across time, there arises the question of whether or not goals are stable across domains (ie. subjects). Also, teachers may have some impact upon students' goals and students' affect and emotions as experienced in the classroom. This study's questionnaire included questions that were not subject or teacher specific. As a result, students might have been uncertain as to whether or not answers were to reflect students' perceptions and beliefs as they pertained to a specific classroom or teacher, or whether or not answers were to reflect feelings of teachers and school as a whole. Perhaps one can examine predictors of motivation more accurately, especially the impact of teachers on student motivation, by making the questions teacher specific. By the same logic, there is also a need to make the questionnaire subject specific as well.

Also, rather than rely solely on students' perceptions of the classroom environment, more accurate perceptions of the classroom structure might be provided by an objective observer who could sit in on and observe a targeted classroom over a period of time. Additional insight regarding the classroom structure and teacher interactions with students could help with the interpretation of the data. For example, an observer might perceive the classroom as mastery oriented and the teacher as being equally helpful to all students. However, data analyzed from a questionnaire might indicate that work avoidance students are the only group of students who perceive the classroom as ability oriented.

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APPENDIX A

May, 1995

Dear Parent(s)/Guardian(s),

I am requesting your permission to have your child participate in an investigation I am conducting . Presently, I am working towards the completion of a Master's degree in educational psychology with my supervisor Dr. Tim Seifert of Memorial University. I would like to conduct a study entitled "Student Achievement Motivation: Single or Multiple Goals?" examining the relationship between student motivation and their behaviour. Specifically, I am interested in how thoughts and feelings influence behaviour in school. It is hoped that such information can help educators in their efforts to enhance student motivation.

I would like to have students complete a questionnaire. This questionnaire, which will take approximately 30 minutes of school time, will ask students about their thoughts and feelings toward school. It has the approval of the Avalon Consolidated School Board, the principals of various schools, and the Ethics Committee of Memorial University.

Please be assured of the following:

1. Your child has **NOT** been signalled out to participate in this study. All students in the class will be asked to participate.
2. Students will be asked **NOT** to write their names on the questionnaire. It will be **anonymous** and **confidential**.
3. Students can withdraw from this study at any time without prejudice of any kind.
4. Students can **omit** any questions they prefer to omit.
5. In writing this report, your child's school will **NOT** be identified.
6. Total results of the class study will be available upon request.

In order for this study to be successful, I will need approximately 200 students. Therefore, I am hoping that all will participate. However, participation is voluntary. If you would like to discuss this matter further, please call me at 368-4528 or Dr. Seifert at 737-4470. A third person you may contact (not associated with this study) is Dr. Steve Norris, Associate Dean of Research at 737-8693.

If you wish to give permission for your child to participate, please complete the attached consent form and return it as soon as possible. Thank-you for your time.

Sincerely,

Michele Davis.

Consent Form

I give permission for my child to take part in this study. In giving permission I understand the following:

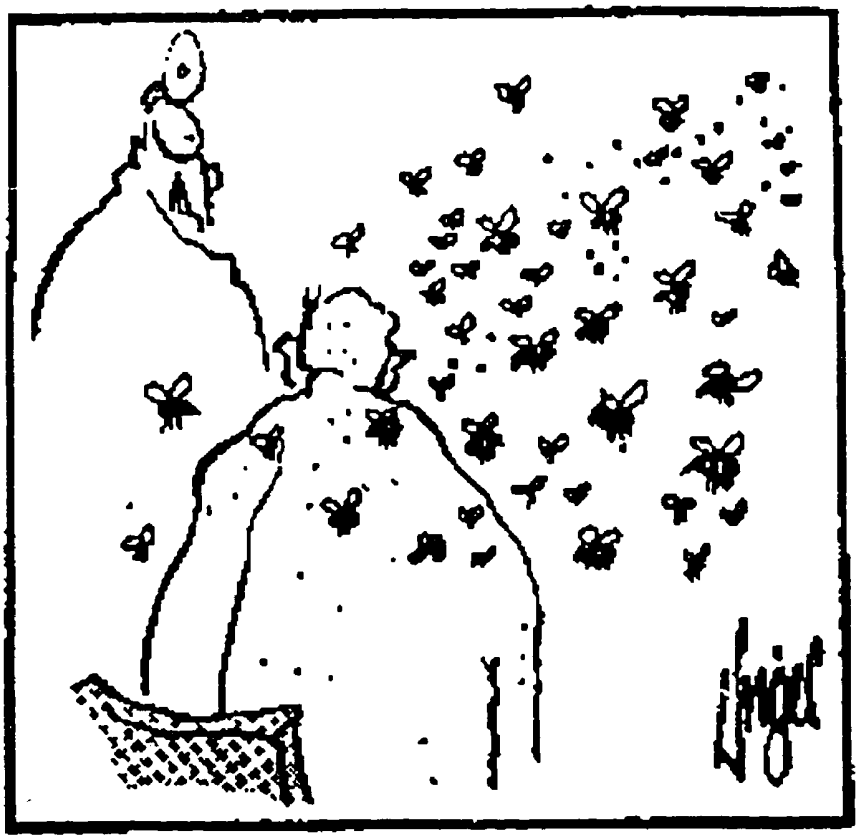
1. This questionnaire will only be used for the purpose described above.
2. My child will not be required to write his/her name on the questionnaire.
3. My child is free to omit answering any questions he/she prefers.
4. I may withdraw my permission at any time without prejudice of any kind.
5. My child can withdraw from the study at any time without prejudice of any kind.
6. In writing this report my child's school will not be identified.
7. In writing this report my child's name will not be used (This is ensured considering that my child's name will not be on the questionnaire).
8. I may receive the results of the study on request.

Signature of Parent:_____

Child's Name:_____

Date:_____

APPENDIX B



"You're eating too much sugar."

Students have different thoughts and feelings about school. What are your thoughts and feelings? The questions inside this booklet ask you about your thoughts and feelings. Try to answer the questions as best as you can. Be honest - remember, there are no right answers. We are interested in what <u>you</u> think and feel.

Thanks for cooperating! Your opinion helps a lot!

In school, students want to do different things. Listed below are some things students might want to do. How true is each sentence for you? Read each sentence carefully. Circle the number that best describes how true that sentence is for you.

I study hard so that I will be better than other students.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I really like to learn how things work.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I really want the other students to like me.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I work really hard so that I will be one of the top students.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I study so I will not get the lowest mark in the class.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I try to understand the material in school.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I work hard so I will not be the worst student in class.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I work hard so I will not get a failing mark.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I really want the teacher to think I am smart.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I do my work to please the teacher.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7

I work hard so my teacher will think I am smart.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I only study to learn the material for tests.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I really want other students to think I am smart.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I work hard so other students will think I am smart.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I work hard to learn as much as I can.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
It's important that I don't look stupid in front of others.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I study really hard so that I will get the highest grade in the class.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I try not to let other students think I'm dumb.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I try to do my work as well as I can.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I want to learn new things in school.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I do not want the teacher to think I'm dumb.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I try to do only what I have to do to get a good grade.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7

I try to get the other students to say nice things about me.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
It's important that I don't look stupid to the teacher.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I try to do the least amount of work possible to get a good grade	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I work hard so the teacher will like me.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I really want the teacher to say nice things about me.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7

Students have different feelings about school. School and school work makes some students feel good. Others do not like school. How does school make you feel? Listed below are some ways students might feel about school. Read each sentence carefully. Circle the number that best describes how true that sentence is for you.

Do you feel stupid in school?	*Almost never* 1	2	3	4	5	6	*Almost always* 7
Do you have trouble with schoolwork?	*Very little trouble* 1	2	3	4	5	6	*A lot of trouble* 7
Do you find school is hard?	*Really easy* 1	2	3	4	5	6	*Really hard* 7
How good are you at learning things?	*Not very good* 1	2	3	4	5	6	*Really good* 7

Do you do well in school?	*Not very well* 1	2	3	4	5	6	*Really well* 7
Can you understand most things in school?	*No, I cannot* 1	2	3	4	5	6	*Yes, I can* 7
Do you feel pressured to learn or do well?	*Very little pressure* 1	2	3	4	5	6	*A lot of pressure* 7
Do you feel that you must do well?	*Almost never* 1	2	3	4	5	6	*Almost always* 7
Do you feel that people expect alot from you at school?	*Almost never* 1	2	3	4	5	6	*Almost always* 7
Do you feel that you are being forced to do your school work?	*Almost never* 1	2	3	4	5	6	*Almost always* 7
How interesting is your school work?	*Not very interesting* 1	2	3	4	5	6	*Very interesting* 7
Are the things you learn in school important to you?	*Not very important* 1	2	3	4	5	6	*Very important* 7
How boring is school for you?	*Not really boring* 1	2	3	4	5	6	*Really boring* 7
Do you find the things you do in school seem to be useless or have no meaning?	*Almost never* 1	2	3	4	5	6	*Almost always* 7
Do you feel like "a somebody" or a "nobody" when you are in school?	*Like a nobody* 1	2	3	4	5	6	*Like a somebody* 7
Does being in school make you feel like a worthwhile person?	*Not very worthwhile* 1	2	3	4	5	6	*Really worthwhile* 7

Do you feel like you are an important part of your class?	*Not very important* 1	2	3	4	5	6	*Really important* 7
Do you feel out of place or like you don't belong in school?	*Don't belong* 1	2	3	4	5	6	*Really belong* 7

In school, how often do you feel ...

proud	*Almost never* 1	2	3	4	5	6	*Almost always* 7
satisfied	*Almost never* 1	2	3	4	5	6	*Almost always* 7
excited	*Almost never* 1	2	3	4	5	6	*Almost always* 7
stressed out	*Almost never* 1	2	3	4	5	6	*Almost always* 7
anxious	*Almost never* 1	2	3	4	5	6	*Almost always* 7
nervous	*Almost never* 1	2	3	4	5	6	*Almost always* 7
tense	*Almost never* 1	2	3	4	5	6	*Almost always* 7
frustrated	*Almost never* 1	2	3	4	5	6	*Almost always* 7

	Almost never						*Almost always*
discouraged	1	2	3	4	5	6	7
disappointed	1	2	3	4	5	6	7
cheerful	1	2	3	4	5	6	7
happy	1	2	3	4	5	6	7
pleased	1	2	3	4	5	6	7
worried	1	2	3	4	5	6	7
delighted	1	2	3	4	5	6	7

Students have different reasons why they do well in school. What are some reason you might do well? Read each reason carefully. For each reason, circle the number that best describes how true that reason is for you.

	Not at all like me						*A lot like me*
1. If I do well it is because the teacher likes me.	1	2	3	4	5	6	7
2. If I do well, it is because I get lucky.	1	2	3	4	5	6	7

	Not at all like me						*A lot like me*
3. If I do well, it is because I work really hard.	1	2	3	4	5	6	7
4. If I do well, it is because the work is too easy.	1	2	3	4	5	6	7
5. If I do well, it is because I study well.	1	2	3	4	5	6	7
6. If I do well, it is because I'm just smart.	1	2	3	4	5	6	7

Students have different reasons why they don't well in school. What are some reason you might not do well? Read each reason carefully. For each reason, circle the number that best describes how true that reason is for you.

	Not at all like me						*A lot like me*
1. If I don't do well, it is because the teacher doesn't like me.	1	2	3	4	5	6	7
2. If I don't do well, it is because the test is too hard.	1	2	3	4	5	6	7
3. If I don't do well, it is because I didn't work hard enough.	1	2	3	4	5	6	7
4. If I don't do well, it is because I'm just not very smart.	1	2	3	4	5	6	7
5. If I don't do well, it is because I didn't study very well.	1	2	3	4	5	6	7

6. If I don't do well, it is because I'm not feeling very well.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7

Some students do not like working on really hard problems, while some do. Do you like working on hard problems? Read each statement carefully. Circle the number that best describes how you feel about working on hard problems.

I like it when the teacher gives us problems to make us think.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I don't like it when the teacher gives us problems to make us think.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7
I like working only on the easy problems.	*Not at all like me* 1	2	3	4	5	6	*A lot like me* 7

Different teachers do different things that they feel are to help students learn. What are some things your teachers do. Below are some statements that describe some things that teachrs might do. Read each statement careful and circle the number that best describes how true that statement is about your teacher.

My teachers make sure I understand the work.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers compare me to others.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers encourage us to study together for tests.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7

My teachers pay attention to whether I'm improving.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
Only a few students can get good marks.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers assign group work often.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers give us a chance to correct mistakes or do make up tests.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers tell the whole class how many students got A's, B's, and so on.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers encourage students to help each other.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers encourage us to try new things.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers make students feel bad if they don't do well.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers encourage us to get help from each other if we need help.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7
My teachers read out marks when handing back tests or assignments.	*Not at all true* 1	2	3	4	5	6	*Definitely true* 7

Some students have different ways of studying. What are some ways that you study? Some things students might do are listed below. Read each method carefully, and circle the number that best describes how often you use that method.

When I am studying I usually ...

	Almost never						*Almost always*
read the textbook chapter over several times	1	2	3	4	5	6	7
	Almost never						*Almost always*
copy out my notes	1	2	3	4	5	6	7
	Almost never						*Almost always*
say the information over and over to myself	1	2	3	4	5	6	7
	Almost never						*Almost always*
make pictures in my head of what I read	1	2	3	4	5	6	7
	Almost never						*Almost always*
ask myself questions to help me understand	1	2	3	4	5	6	7
	Almost never						*Almost always*
make a diagram or chart to help me understand	1	2	3	4	5	6	7
	Almost never						*Almost always*
try to think carefully about what I've read	1	2	3	4	5	6	7
	Almost never						*Almost always*
try think of my own examples of ideas	1	2	3	4	5	6	7
	Almost never						*Almost always*
try to summarize the important ideas	1	2	3	4	5	6	7