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CHAPTER

Motivation and Goal Perspectives In Children's Physical Education

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The research reported in this chapter is based on theories developed in North America (Ames & Archer, 1988; Duda, 1992, 1993; Dweck, 1991; Nicholls, 1989), although they also have received some attention in Europe (e.g., Heckhausen, Schmalt, & Schneider, 1985; see also chapter 10). Nevertheless, there are some important differences. First, unlike the American researchers who have concentrated mainly on competitive or recreational sport, in the present chapter research examining students' motivation in physical education lessons is reported. Further, unlike most of the research in North America, which has examined the effects of individual and situational differences on children's achievement mainly in isolation from each other, the perspective adopted here is an initial attempt to examine the interactional effects of person and environment on students' motivation. Finally, the validity of contemporary theories of children's motivation is examined in a culture other than America (namely, Greece).

I started my investigations into children's motivation in physical activities 6 years ago as research student at the University of Manchester, England. At that time there were three general questions that shaped my research. First, since the role of school physical education in public health is widely recognised (e.g., Morrow, 1991) the issue to be addressed was how can we implement physical education in order (a) to motivate students to try their best during the lesson, (b) to make sure that they really learn as much as possible in the lesson, (c) to ensure that they have an

enjoyable lesson, (d) to make sure that students develop the most positive attitudes towards exercise, and (e) to be confident that after the end of school, students will continue to exercise, effectively using what they have learned? Obviously, the question was one about students' motivation and achievement.

The second general question was concerned with the way these issues should be examined. Some theories focus primarily on the effects of external or objective conditions on people's behaviours. Others put greater emphasis on internal or subjective conditions and deal primarily with dispositional differences. There are also theories that deal quite effectively with both issues, or better, with the interaction between the person and the external environment. Since the latter appears to be the most comprehensive perspective, a theory and a research methodology sharing this view should be adopted.

The third question was an ethical one. It was whether any existing theory could give effective answers with regard to how we can sustain optimal motivation in all children. In my own country of Greece there are two main characteristics that seem to discriminate students in physical education: gender and level of athletic ability. My experience suggests that gender discrimination to a large extent reflects sport ability-based discrimination (see also Griffins, 1989; Kirk, 1990). Thus a theory should be used whose implications ensure, or at least assist in, optimum motivation in students of all levels of ability.

In support of the argument that the theoretical framework of goals can successfully answer the above questions (Nicholls, 1989; Dweck & Leggett, 1988), the remainder of this chapter reports some findings from my recent studies. Because of space limitations, only a brief description of the theory used in these studies will be presented here. For further reading see Ames (1984a), Ames and Archer (1988), Duda (1992, 1993), Dweck (1991), Dweck and Leggett, (1988), Nicholls (1989) and Papaioannou (1992).

Goal Perspectives Theory and Assessment

According to the theoretical framework of goal perspectives, in achievement situations at least two different classes of goals are identifiable: a task or learning goal and an ego or performance goal.

When a task or learning goal is salient, people are concerned with how to accomplish a meaningful task that will lead to greater personal competence. Since the goal is to gain competence, people see effort as the prime antecedent of achievement and, speaking generally, the major prerequisite of success. Therefore, they try hard to learn new skills, and they value the process of learning itself. No external rewards or threats are necessary in order to motivate task-involved children because the most important rewards are in the accomplishment itself and in the gains in knowledge or skills that imply improvement in competence. In other words, when the goal is the development of competence in a meaningful task, children are always intrinsically motivated.

Because people can infer that their competence has been increased if they evaluate it relative to their personal progress rather than normative criteria such as others' performance, when a learning goal is adopted the criteria of evaluation are personal (i.e., where one's performance stands relative to one's past performances). This implies that when a task or learning goal is salient *success is defined as personal improvement*. When someone is task involved, no actual failure is perceived because any mistake serves as a guide for future improvement in competence. Once an error is identified, the probability of its repetition and the corresponding detrimental effect on future performance are progressively eliminated.

The implications of the theoretical framework of goals extend beyond the achievement domain (e.g., see Duda, Olson, & Templin, 1991; Kelley, Hoffman, & Gill, 1990). For example, since no fear of failure exists in task involvement, people do not hesitate to ask for help from others or to co-operate and to help others, because they see co-operation, help-seeking and help-giving as an effective way towards personal and collective improvement.

When an ego or performance goal is salient people are concerned with how good they are at the particular task (e.g., the goals that a high evaluative environment imposes when, for example, children are told 'We are going to have a race to see who is fastest'). Consequently, people's main interest is to show evidence of their ability in a normative sense. For instance, they try to beat others, or to outperform a high normative performance or to achieve success with little effort. In other words, the criteria of evaluation are normative and children feel successful and satisfied when they are evaluated by others as higher achievers than their group of reference (e.g., children of the same gender, same age, etc.). In contrast, children experience failure and negative emotion when they are evaluated as having lower abilities than most of their reference groups. Thus children feel anxious when they foresee that they will exhibit low abilities and generally they either try to avoid the task or exhibit low effort, which will be used as an excuse for their failure.

The validity of the theoretical framework of goal perspectives has received considerable support in the domain of physical activity (see the reviews of Duda, 1992, 1993). Most of the field studies conducted until now have used questionnaires measuring personal goals in sport. For example, two items from Duda's (1989a) questionnaire state 'I feel most successful in sport when the others can't do as well as me' (ego orientation), and 'I feel most successful in sport when I learn a new skill and it makes me want to practise more' (task orientation).

Adopting the same perspective, in the first study with Greek students (Papaioannou, 1990; Papaioannou & Duda, 1992) a questionnaire measuring individual differences in students' goals (dispositional goals) in sport was completed by 211 adolescents. In addition, they completed a questionnaire measuring students' motives for participation in the physical education lesson (similar to that of Gill, Gross, & Huddleston, 1983) and a questionnaire measuring perceived purposes of physical education (similar to that used by Duda, 1989a).

All questionnaires were analysed by factor analysis. The two-factor solution reflecting task and ego orientation respectively (Papaioannou, 1990) was replicated 2 years later with a sample of 394 Greek students (Papaioannou & Duda, 1992).

Factor analysis also produced five factors for motives for participation (status, fitness development, affiliation, excitement and skill improvement) and five factors for perceived purposes of the physical education lesson (fostering of mastery-cooperation, increase of self-esteem, improvement of fitness, increase of status by any means and cultivation of citizens of good character). Analyses using canonical correlation showed that ego orientation was associated with motives for social status while task orientation was associated with motives for skill improvement, fitness development and affiliation.

Furthermore, ego orientation was a positive predictor of the perceived purposes of 'social status by any means' and 'increase of self-esteem', but task orientation was a positive predictor of 'mastery-cooperation', 'increase of self-esteem', 'cultivation of good-character citizens' and 'fitness improvement'.

These results are in accordance with the assumptions of goal perspectives theory and identical to those of Duda (1989a). Further, a useful implication of these findings is that dispositional goals in sport activities can be reliably and validly measured in a Greek population.

Contextual Differences in Students' Perceptions of Their Class

In addition to dispositional differences, contextual differences in goal perspectives exist (for reviews see Nicholls, 1989; Dweck & Leggett, 1988). In the sport domain, most of the studies in this area have been conducted in laboratories (e.g., Jourden, Bandura, & Banfield, 1991). Since many authors have challenged the usefulness of the laboratory's artificial environment (e.g., Martens, 1979), and given that very few field experimental studies (e.g., Burton, 1989) have been conducted in this area, research is lacking on the effects of situational differences in goal perspectives on children's motivation and achievement. This shortcoming, in conjunction with the limited number of studies dealing with motivational issues in physical education (for a review see Papaioannou, 1992), make explicit the reasons why I chose to examine the effects of the physical education environment on students' motivation.

Dealing with the interaction between person and environment, Murray (1938) noticed that there is a difference between the environment perceived by a detached observer and that perceived by the people involved in it. A typical example of the 'objective' approach to the study of the environment is the systematic observation that adopts instruments such as those described in Darst, Zakrajsek, and Mancini's (1989) book. Typical of the 'subjective' research approach are interviews or questionnaires measuring students' perceptions of the environment such as those described by Fraser (1986).

According to Fraser (1986), student perceptual measures are more economical and have been found to account for considerably more variance in student learning than observational techniques. Moreover, studying the effects of students' perceptions of their classes' climates on their motivation and achievement has the advantage of concentrating on both person and situation simultaneously. Indeed, Stern, Stein, and Bloom (1956) distinguished between the idiosyncratic view that each person has of the environment and the shared view that members of a group hold about

the environment. As many studies reviewed by Fraser (1986) show, the perceived environment reflects both the idiosyncratic and the shared view of its members.

Based on the theoretical framework of goals, Ames and Archer (1988) have developed a questionnaire measuring the two basic dimensions of classroom climate proposed by this theory: mastery and performance orientations in the classroom. Similarly, a questionnaire measuring mastery- and performance-oriented teams has been developed recently by Seifriz, Duda, and Chi (1992). Ames and Archer (1988) found that perceptions of mastery-oriented classes were strongly related to positive attitudes towards the class, preferences for challenging tasks and effective learning strategies. Seifriz et al. (1992) found that perceptions of a mastery-oriented basketball team were associated with enjoyment in playing basketball and the belief that effort leads to achievement in basketball. On the other hand, perceptions of a performance-oriented team were related to the belief that superior ability causes success in basketball. Thus, there is already some evidence supporting the hypotheses generated by goals theory regarding the effects of the environment on students' motivation.

Learning and Performance Oriented Physical Education Classes Questionnaire (LAPOPECQ)

In order to measure perceptions of physical education classes' goals, I developed a questionnaire ('Learning and Performance Oriented Physical Education Classes Questionnaire'; LAPOPECQ) (Papaioannou, 1994) which consists of five factors. Two of them measure perceptions of class learning orientations and three of them perceptions of class performance orientations. Results from confirmatory factor analysis showed that the questionnaire has a hierarchical structure: the two learning factors are first-order factors of a second higher-order factor named learning, and the three performance factors are first-order factors of a second higher-order factor called performance.

The same five first-order factor solution emerged in three different samples consisting of: (a) 122 students from four physical education classes of students aged 14 and 17 years, (b) 1,393 students from 55 physical education classes (28 classes: students 13 years old; 27 classes: students 16 years old), and (c) 394 students from 16 physical education classes (students' age in 8 classes: 14 years old; students' age in the remaining 8 classes: 17 years old). All students were Greek adolescents.

In addition to the LAPOPECQ, the adolescents from the first two samples were asked whether they perceive that their teacher is mainly satisfied by the success of students who: (a) have high athletic abilities although they do not try very hard, (b) have high athletic abilities and try very hard, (c) try very hard although they lack high athletic abilities. As appears in Table 12.1, the perception of a teacher who is mainly satisfied by high ability but not high effort was positively correlated with the three performance scales but negatively correlated with the two learning scales. In other words, students' perceptions of a teacher who is particularly focused on the issue of normative ability were positively related to the scales measuring perceptions of classes' performance orientation but negatively related to the scales assessing perceptions of classes' learning orientation. On the contrary, as is shown

Table 12.1 Correlations Between Perceptions of Teacher's Satisfaction and Perspectives of Classes' Goals

Teacher's satisfaction with	Teacher-initiated learning orientation	Students' learning orientation	Students' competitive orientation	Students' worries about mistakes	Outcome orientation without effort
high ability low effort	-.27**	-.21**	.18**	.11**	.29**
high ability high effort	.28**	.23**	.02	.01	-.10**
low ability high effort	.38**	.28**	-.07*	-.02	-.08*

* $p < 0.01$ ** $p < 0.001$

Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

in Table 12.1, the perception of a teacher whose main interest is students' effort was positively related to the scales measuring learning orientation.

Although most of these relationships are quite low, they imply that the perception of an emphasis on effort and not on normative ability is inherent in the two learning-oriented scales. On the contrary, the perception of an emphasis on normative ability was inherent in the three performance-oriented scales.

Student Motivation and Achievement

In addition to the LAPOPECQ, the students from the second sample of 1,393 Greek adolescents answered a questionnaire measuring attributions of success and failure to ability, effort, task difficulty and luck (Papaioannou, 1992).

In order to search for differences among profiles of students, eight different groups were created according to their scores on the learning and performance scales and physical perceived competence scale. The learning scale consisted of the items of the 'teacher-initiated learning orientation' and the 'students' learning orientation'. The performance scale was constructed by adding the items of the 'students' competitive orientation' and 'outcome orientation without effort' scales. These two new scales were further split, using as criterion the mean of the physical perceived competence scale. Thus eight new groups were created, differing from one another in terms of learning goals, performance goals and perceived competence (e.g., high learning/high performance with high perceived competence). The sample sizes of all groups varied from 106 to 197 students.

Students in the high learning groups perceived effort as a more important cause of success than students in the low learning groups. These findings are in line with past research (Ames & Archer, 1988) implying that when students perceive their environment as highly learning oriented, irrespective of their perceived competence they define success as competence improvement whose main antecedent is high effort.

However, the results showed that when both learning and performance goals are salient, in addition to effort, children consider ability as an important cause of success. Similar results from experimental studies have been reported in the past (e.g., Ames, 1984b). Although these results are possibly not too important from a practical point of view (the differences were quite small), they imply that students were more likely to focus on issues of ability when they perceived a high performance-oriented class.

Regarding attributions of success to ease of task, the results showed that students in the high learning/low performance group scored significantly lower than students in the other three groups of goal perspectives. Similarly, in terms of success attributions to luck, the most important differences were the lower scores of either high or low perceived competence students in the high learning/low performance group than that of low perceived competence students in the remaining three groups. Despite the small or moderate differences found, these findings suggest that irrespective of students' perceived competence, when they perceive a high learning but low performance-oriented environment, they are less likely to make task or luck attributions.

This conclusion was further supported by findings regarding failure attributions given to task difficulty and luck. Students perceiving high learning and low performance goals made relatively weaker attributions of failure to task difficulty or luck than students perceiving high performance goals.

Since both task and luck ascriptions are external and usually considered uncontrollable and to be avoided (e.g., Weiner, 1985; Rudisill, 1989), the sum of these findings implies that perceptions of both high learning and low performance goals are the most promising for students' motivation and achievement.

A questionnaire developed by Eccles (Eccles, 1983; Midgley, Feldlaufer, & Eccles, 1989), measuring interest in the lesson and perceived usefulness of the lesson, was administered to all three samples (Papaioannou, 1994). Many studies have shown that these factors are strong positive predictors of achievement behaviours (e.g., MacIver, Stipek, & Daniels, 1991; Meece, Wigfield, & Eccles, 1990). Furthermore, the students from the first two samples responded to Harter's (1981) 'preference for challenge' scale from the 'Extrinsic versus Intrinsic Orientation in the Classroom Questionnaire'. All scales had been modified for the physical education lesson. The results showed that intrinsic motivation, interest in the lesson and perceived usefulness of the lesson were strongly associated with the two learning scales. By way of contrast, there were either no correlations or negative correlations among these three variables and the performance scales (see Table 12.2).

Because prior research has found that perceived competence is a positive predictor of both intrinsic motivation (e.g., Harter & Connell, 1984; Weiss, Bredemeier, &

Table 12.2 Correlations of Perceptions of Classes' Goals With Intrinsic Motivation, Interest in the Physical Education Lesson, and Perceived Usefulness of the Lesson

	Teacher-initiated learning orientation	Students' learning orientation	Students' competitive orientation	Students' worries about mistakes	Outcome orientation without effort
Intrinsic motivation	.32***	.44***	-.07*	-.09**	-.22***
Interest in the physical education lesson	.46***	.57***	-.01	-.06	-.13***
Perceived usefulness of the lesson	.45***	.59***	.02	-.02	-.12***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

Shewchuk, 1986) and perceived importance of the task (e.g., Meece et al., 1990), hierarchical regression analysis was used in order to examine whether the perceived goal orientation could add further to perceived competence in the prediction of the aforementioned measures. Accordingly, the scores of the learning and performance scales were computed and added into the equation after students' scores on Harter's perceived physical competence scale. The results suggested that irrespective of perceived ability, perceptions of learning goals were strong positive predictors of intrinsic motivation in the lesson, interest in the lesson and perceived importance of the lesson. In contrast, perceptions of performance goals made a small negative contribution to the prediction of students' motivational patterns in physical education.

Developmental Differences in Motivation

Findings regarding developmental differences suggested that junior high school students (aged 13 to 15 years) perceived their classes as more learning oriented than senior high school students (aged 16 to 18 years) (Papaioannou, 1992). Moreover, the younger students had significantly higher scores than the older students on intrinsic motivation, interest in the lesson and perceived usefulness of the lesson (Papaioannou, 1992).

Nevertheless, results from analysis of covariance showed that if students in junior and senior high schools perceived their classes' learning orientation similarly, no difference (at least no considerable difference) would emerge in their intrinsic motivation, interest in the lesson or perceived importance of the lesson. It should be remembered here that results from two different studies did not find any difference between junior high

school and senior high school students' dispositional goals (task and ego orientations) (Papaioannou & Duda, 1992). Hence, assuming that the curriculum is a major cause of differences between junior and senior high school students' perceptions of the learning environment, if teachers in senior high schools adopted the learning orientation in their classes that their colleagues in junior high schools do, older students would be intrinsically motivated to the same degree as the younger students. Thus these data seem to suggest that it may not be developmental differences beyond the age of 12 that make Greek students less intrinsically motivated in the physical education lessons, but the differences in the learning environment that affect their motivation negatively.

Perceived Class Goals and Related Variables

According to many theories of attitudes (e.g., Ajzen, 1988) and motivation (e.g., Bandura, 1986), intention is the major determinant of behaviour. Accordingly, the students from the third sample of 394 adolescents, in addition to LAPOPECQ, answered a series of questionnaires measuring intentions for involvement in all physical education lessons, intentions for high effort in all physical education lessons, perceived physical competence and dispositional goals in sport (task and ego orientation). The results (Papaioannou & Theodorakis, 1993) showed that both dispositional goals and perceived classes' goals increased the prediction of intentions beyond that accounted for by perceived competence.

For most theories of human motivation perceptions of control are major determinants of motivation and achievement (e.g., Ajzen 1988; Bandura, 1986; Harter & Connell, 1984). Following Ajzen's (1988) instructions, students' perceptions of control over involvement in all physical education lessons were measured in 394 adolescents (Papaioannou & Theodorakis, 1993). These students had already answered LAPOPECQ, the questionnaire measuring dispositional goals in sport, and Harter's (1982) measure of perceived athletic competence.

The results showed that, in addition to perceived competence, task orientation in sport and perceived learning goals added further to the prediction of perceived behavioural control. In contrast, there was no relationship between ego orientation or perceived performance goals and perceived behavioural control.

Interaction Between the Individual and the Environment

The correlations presented in Table 12.2 show the relationships of each student's total score on each scale of the LAPOPECQ and the three motivational variables. However, these coefficients reflect the combined effects of differences between physical education classes and individual differences in students' views within each class. In order to examine whether the above correlations reflect the effects of actual differences in the environment of the physical education classes or the effects of different perceptions within the same physical education classes, correlations were calculated between the class means (C) of each scale of the LAPOPECQ and the three motivational factors. The results shown in Table 12.3 suggest that, in most

Table 12.3 Correlations of Intrinsic Motivation, Interest in the Lesson, Perceived Usefulness of the Lesson, and Worries About Performance With Means of Classes' Goals (C) and Individual Differences Within Classes (I)

		Teacher-initiated learning orientation	Students' learning orientation	Students' competitive orientation	Students' worries about mistakes	Outcome orientation without effort
Intrinsic motivation	(C)	.23***	.26***	-.03	-.04	-.10***
	(I)	.24***	.37***	.06*	-.08**	-.20***
Interest in the lesson	(C)	.34***	.36***	-.02	-.03	-.11***
	(I)	.36***	.48***	-.01	-.07**	-.11***
Perceived usefulness of the lesson	(C)	.39***	.42***	.02	.03	-.11***
	(I)	.33***	.46***	.02	-.03	-.09***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

cases. the relationships described previously emerged between classes' mean score (C) on each scale of LAPOPECQ and the other constructs as well.

The next task was to examine the relationships between individual differences within classes and the three motivational variables. To this end, partial correlations were computed between the latter variables and children's perceptions of their classes' goal structure (I) after the variance due to class differences was removed (that is, the means of the classes in each scale of LAPOPECQ were the control variable). Again, each scale of LAPOPECQ showed similar relationships to the other self-related reports as the relationships described for the combined score of each scale of LAPOPECQ with the other self-related constructs.

In sum, these results imply that both between-class differences and within-class differences in the perceptions of classes' goals affect students' motivation. More generally, both situational and dispositional differences in goal perspectives seem to affect students' motivation and achievement.

Determinants of Student Perceptions of Class Goals

Because both between- and within-class differences in the perception of classes' goals affect students' motivation, it is quite important to discover the major determinants of these differences.

To the sample consisting of 394 students from 16 physical education classes with eight different physical education teachers (two classes from each teacher), in addition to LAPOPECQ, questionnaires measuring the following variables were administered: dispositional differences in task and ego orientation in sport, perceived physical competence, attitudes towards exercise, attitudes towards the students' physical education teacher and beliefs about physical education teachers in general (Papaioannou, 1992).

In addition, for each scale of LAPOPECQ two new variables were computed. The first variable was 'teacher' which, for each scale of LAPOPECQ, is the score of the two classes taught by the same teacher. This variable is supposed to measure teacher's contribution to the formation of students' perceptions of their classes' orientation. For example, in the case of the 'teacher-initiated learning orientation' scale, the variable 'teacher' is the mean of the scores on the 'teacher-initiated learning orientation' scale of the two classes belonging to the same teacher. The second variable was 'class' which, for each scale of LAPOPECQ, is the mean score of each class. This variable was created because it was assumed that in addition to the influence of the teacher, between-class differences might remain because of different types of classes taught by the same teacher.

Results implied that the particular teacher and the particular class (both of them represent between-class differences), as well as individual differences in attitudes towards exercise, task orientation in sport, attitudes towards the particular teacher, and beliefs about physical education teachers in general, were positive predictors of a learning orientation. In other words, the above variables determined the way that students perceived their classes' learning orientation.

Regarding the three performance-oriented scales, it was found that the variable 'teacher' and students' ego orientation were positive predictors. Further, perceived competence and attitudes towards the teacher were negative predictors of the 'students' worries about mistakes scale', and the attitudes towards exercise score was a negative predictor of 'outcome orientation without effort' scale.

These findings imply that both the teacher and the students from each particular class are responsible for the creation of the learning orientation of the class. Nevertheless, the within-class differences in the perception of classes' goals appeared to exceed between-class differences. These results question the overemphasis on the observation of teachers' behaviour observable in North American work on sport pedagogy. Further, they suggest that in addition to the teacher, many other factors determining individual differences in goals, attitudes and beliefs should be considered in the study of students' motivation and achievement (e.g., family, friends, media, etc.). Moreover, since many of the findings discussed here suggest that increased perceptions of learning-oriented classes have very positive effects on students' motivation, the most important practical implication of these findings is that teachers may wish to consider adopting a high learning orientation in their classes, and students should become more task oriented, have more positive attitudes towards their teacher and more positive views about teachers and school in general.

Overall, the implications of these findings for teachers, coaches, lecturers, parents, politicians, journalists and anyone who is interested in education, physical education

and sport are the same: Create a learning-oriented environment in the class, team, or family; increase adolescents' task orientation in school and sport; strengthen students' positive attitudes and beliefs about their teachers, coaches and school in general. In sum, adopt the policy and behaviours that emphasise learning goals in school, in physical education and in sport contexts.

Determinants of Differences in Goal Perspectives Between Classes

In order to examine whether there were differences in the context of the lesson, in students' involvement in the lesson and in student-teacher interactions in physical education classes differing in goal perspectives, one class of each of eight physical education teachers was observed for three or four consecutive lessons (Papaioannou, 1993). In the study described earlier, two classes of each of these eight physical education teachers had responded to LAPOPECQ (394 students from 16 physical education classes). These answers were used to classify four teachers as having high learning-oriented classes (the classes' score on the learning scale was above the median), and four teachers as having low learning-oriented classes. Results revealed that there were large differences in the learning orientation of the classes taught by these two groups of teachers. Similarly, four teachers were classified as having high performance-oriented classes and four teachers as having low performance-oriented classes. The differences in the performance orientation of the classes taught by these two groups of teachers were also significant.

The observational tools used were the Cheffers Adaptation of Flanders's Interaction Analysis System (CAFIAS; Cheffers, Mancini, & Martinek, 1980) and Academic Learning Time in Physical Education (ALT-PE; Parker, 1989). With respect to the categories of ALT-PE, results revealed that more practice and technique but less game time was observed in high rather than in low learning-oriented classes (see Figure 12.1). Furthermore, in high learning-oriented classes students were more cognitively involved and exhibited less off-task behaviour than in low learning-oriented classes (see Figure 12.2). With regard to the categories of CAFIAS, results suggested that more teacher's verbal instruction and more teacher's verbal orders and directions were recorded in high than in low learning-oriented classes (see Figure 12.3).

The results from both observational systems imply that one very important feature of high learning-oriented physical education classes in Greece is the emphasis placed on instruction and skill development. This is evident from the higher proportion of time spent on skill practice and teaching issues of technique (as recorded by the ALT-PE), and the higher proportion of teacher's verbal instruction and teacher's verbal orders and directions (as recorded by CAFIAS) in high rather than in low learning-oriented classes.

With reference to performance orientation, the only difference from either ALT-PE or CAFIAS emerged in the CAFIAS category 'teacher's verbal orders and directions' which was higher in classes with high performance orientations than in low performance-oriented classes (see Figure 12.4). These results imply that in high

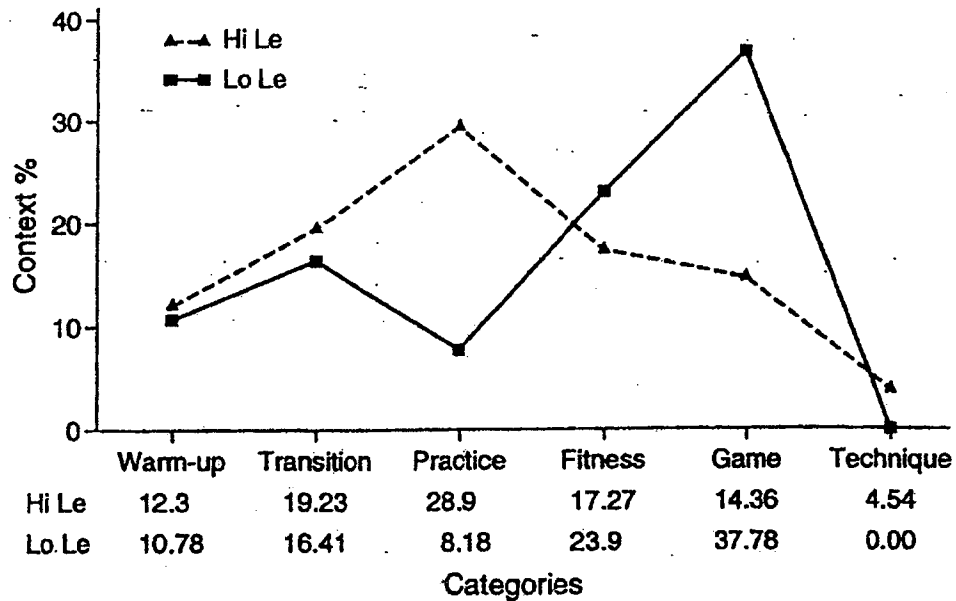


Figure 12.1 High learning-oriented classes displaying more practice and technique-related behaviours, but less game-related activity, than low learning-oriented classes (Hi = high; Lo = low; Le = learning-oriented class).

Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

performance-oriented classes students were given less autonomy by their teachers than in low performance-oriented classes.

Overall, though the observational tools were not the most appropriate for assessing the classes' climate (I believe that no quantitative observational tool can present an accurate picture of the climate of a class), large differences were observed between classes differing in achievement orientations. The most important were those between high and low learning-oriented classes because there is already a great deal of evidence suggesting that learning orientation is strongly associated with students' motivation. As the above findings suggest, the most prominent characteristic of high learning-oriented physical education classes in Greece is the emphasis on students' skill development. Further, these results imply that Greek teachers should not expect to increase students' motivation in the physical education lesson through the entertainment that the games offer. On the contrary, they can promote students' motivation by focusing their efforts on students' learning and by setting goals for skill and knowledge development. This does not necessarily imply that students should not play games during the physical education lesson. It does suggest, however, that an optimal balance should be adopted between the time devoted to skill practice and the time for playing games.

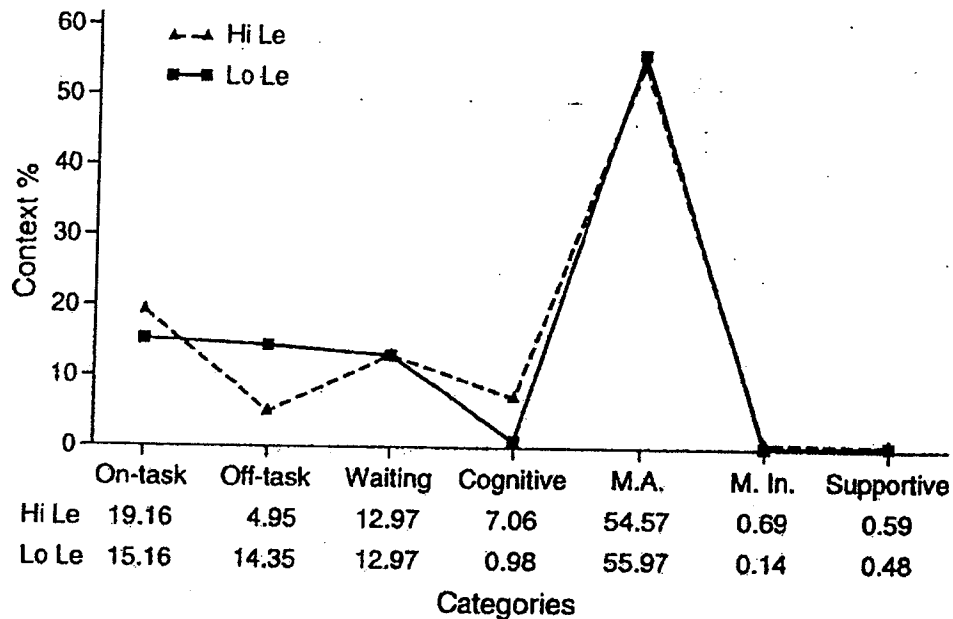


Figure 12.2 High learning-oriented classes displaying more cognitive involvement and less off-task behaviour than low learning-oriented classes (M = motor; A = appropriate; In = inappropriate; Hi = high; Lo = low; Le = learning-oriented class).
 Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

Differences in Goal Perspectives Between Individuals

As has been suggested, perceived competence and dispositional differences in task orientation are positive predictors of student motivation. On the other hand, dispositional differences in ego orientation do not seem to affect motivation. Indeed, as can be seen in Table 12.4, for the sample consisting of 394 Greek students, intention for participation in all lessons was positively related to perceived competence but weakly related to ego orientation.

However, these relationships concern the whole sample. As I have argued elsewhere (Papaioannou, 1992), there is a hidden cost when we aggregate the data from different individuals and different situations. Moreover, as Nicholls (1989) suggested, students' perceived competence is a stronger predictor of students' motivation when students are ego involved rather than task involved. Accordingly, I divided the whole sample into four different groups: (a) students perceiving high-learning and low-performance goals, (b) students perceiving high-learning and high-performance goals, (c) students perceiving low-learning and high-performance goals and (d) students perceiving low-learning/low-performance goals. In each of these groups, the relationships among intentions for involvement in all physical education lessons and perceived competence and ego orientation were examined.

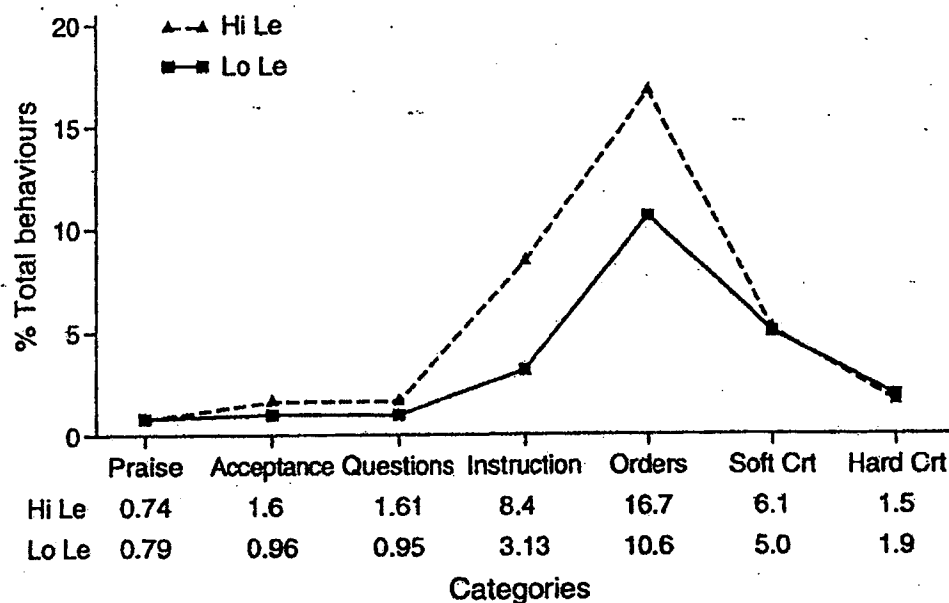


Figure 12.3 Differences in teacher behavior between high and low learning-oriented classes (Crt = criticism; Hi = high; Lo = low; Le = learning-oriented class).
 Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

A stronger relationship was found between intention and perceived physical competence in the low-learning/high-performance group than in the high-learning/low-performance group. These findings support Nicholls's (1989) arguments that the role of perceived competence in students' motivation and achievement is more prominent when low learning and high performance goals are adopted. This is predictable because when low learning and high performance goals are adopted the main incentive for participation in the lesson is the demonstration of high ability. Hence, the lower the learning goals and the higher the performance ones, the more the high perceived ability students and the less the low perceived ability students intend to take part in the physical education lesson. Accordingly, if we want to maintain equality in educational and sport contexts (i.e., if we want to motivate all students irrespective of how able they are), these results suggest that both high learning and low performance goals should be adopted.

Further, there was a positive relationship between intention and ego orientation in the two low learning groups but almost a zero relationship in the two high learning ones. This is not an unpredictable finding because when students realise that they have no chance to improve their competence by taking part in the lesson an important reason that can possibly motivate them is the satisfaction deriving from demonstrating their abilities to others. On the other hand, the almost zero association between ego orientation and perceived learning goals implies that when the value of all students' improvement is stressed in the class, students cannot derive satisfaction

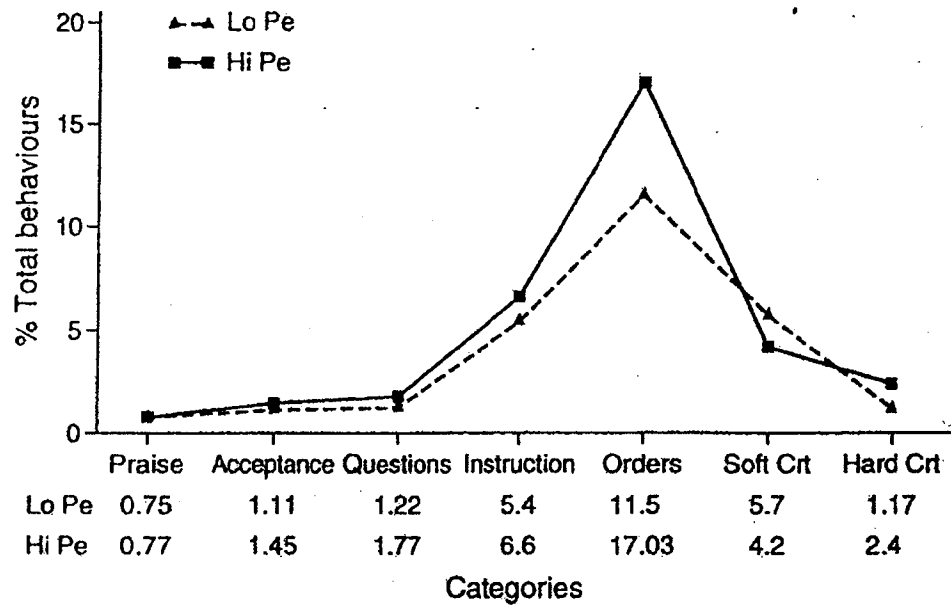


Figure 12.4 Differences in teacher behaviour in high and low performance-oriented classes (Cri = criticism: Hi = high; Lo = low; Pe = performance-oriented classes).
 Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

Table 12.4 Correlations Among Intention for Involvement in all Lessons and Perceived Competence and Ego Orientation in Groups Perceiving Different Goals.

	INTENTION				
	Whole sample	High learning, low performance	High learning, high performance	Low learning, high performance	Low learning, low performance
Perceived competence	.34***	.21	.31**	.45***	.28*
Ego orientation in sport	.14**	.04	.04	.28**	.37***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

by demonstrating their competence to others. Therefore, high ego-oriented students have no greater incentive than low ego-oriented students to take part in the class.

In sum, although the above results need replication with a larger sample and in different contexts, they suggest that when students perceive differently the goals that are salient in their classes (a difference due both to individual and situational differences), different incentives motivate them and different psychological mechanisms function. Moreover, they offer initial support to the argument that if we want to provide equal motivation for both high- and low-ability students, and to avoid the encouragement of ego orientation, both high learning and low performance goals should be adopted in physical education.

Goal Perspectives and Equality in Physical Education

Some issues about equality and goal perspectives were raised previously and a further elaboration will be attempted here. The focus of discussion is whether we can promote optimum motivation in children of all levels of ability and whether we can eliminate teachers' and students' differential behaviour towards high- and low-ability students. All findings reported below are based on the responses of 1,393 Greek students (Papaioannou, 1992).

Goal Perspectives and Motivation of Students With Different Sport Experiences

Using students' answers regarding their participation in out-of-school sport activities, four different groups were created: the first group was not currently involved in either recreational or organised sport activities on a regular basis (the word 'regular' was defined as participation in any kind of sport activity at least twice a week); the second group was involved in recreational sport activities only; the third group participated in organised sport only; the last group was involved in both recreational and organised sport activities.

Results (Papaioannou, 1992) suggested that students who were not involved in any physical activity in their out-of-school lives scored much lower in intrinsic motivation, interest in the lesson and perceived usefulness of the lesson than students with experience of organised sport. Nevertheless, after adjusting for differences in perceptions of learning goals and perceived competence, the differences in intrinsic motivation and perceptions of the lesson were not of particular importance. These findings suggest that no important differences would emerge in students' motivation as a result of their divergent sport experiences if they did not differ in terms of perceived sport ability and perceptions of learning goals.

It should be noted here that the differences in perceived classes' learning orientation among students with different sport experiences are most probably caused by dispositional differences in task orientation (e.g., Duda, 1989b). Thus, the sum of the above findings suggests that despite students' differences in sport experiences

(and correspondingly in sport abilities), if students were involved in activities where perceptions of physical ability had no effects on their personal achievement (as previous findings showed, this is likely in a very high learning and very low performance oriented environment), dispositional task orientation would make the most important difference to their motivation.

Teachers' Differential Behaviour Towards High and Low Achievers

A well-known research area dealing with the issue of equality in education and physical education is that of self-fulfilling prophecies. Major reviews by Brophy (1983), Dusek (1985) and Martinek (1989) suggest that teachers' different behaviour towards high and low achievers affects their expectations for future success as well as future achievement itself.

Since a teacher's different behaviour towards high and low achievers focuses students' attention on issues of ability rather than how to master the task, a positive relationship should exist between performance orientation and teacher's different behaviour towards high and low achievers. When a performance goal is adopted what is most valued in the class is ability, and only students with high normative ability are rewarded. In contrast, when a learning goal is adopted in the class, the issue of normative ability is irrelevant and therefore incompatible with perceptions of different treatment of high and low achievers.

These hypotheses were tested using LAPOPECQ and a modified questionnaire developed by Weinstein (Weinstein, Marshall, Sharp, & Botkin, 1987) in order to measure students' perceptions of their teacher's treatment of high and low achievers (Papaioannou, in press). The latter questionnaire asked students how often their physical education teacher would treat a student who is very able in the manner described by 10 items. A similar question, with the same 10 items was used to measure the teacher's treatment of a student who is not very able. The score resulting from the difference of the two scales measured teachers' differential behaviour. In all 55 classes surveyed, this score indicated that teachers favoured high achievers.

As shown in Table 12.5, the two learning-oriented scales of the LAPOPECQ were positively related to teachers' treatment of low achievers and negatively related to perceptions of differential treatment. In contrast, the three performance-oriented scales were positively related to teachers' treatment of high achievers and positively related to perceptions of differential treatment. These findings suggest that in the physical education context, learning orientation is associated with sustaining equality whereas performance orientation is connected with maintaining inequality.

Students' Intrinsic Motivation and Anxiety When Participating With High or Low Achievers

One of the most important criticisms that Nicholls (1989) and Dweck (1986) have made of other theories of achievement motivation, such as those of Atkinson (1964) and Weiner (1985), is that they are not applicable to the people who adopt high learning goals.

According to these achievement motivation theorists, students with high perceived ability have higher expectations of success and are therefore more motivated than

Table 12.5 Correlations Among Perceptions of Teacher's Treatment of High and Low Achievers and Classes' Motivational Orientations

	Teacher-initiated learning orientation	Students' learning orientation	Students' competitive orientation	Students' worries about mistakes	Outcome orientation without effort
Teacher's treatment:					
High achievers	-.06	.01	.20**	.26**	.21**
Low achievers	.32**	.31**	.01	-.04	-.02
Differential treatment score	-.27**	-.20**	.15**	.22**	.17**

** $p < 0.001$

Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

students with low perceived ability. Nicholls (1989) argues that this is true when students are concerned about their ability relative to others. However, when students are instead particularly interested in increasing their competence, perceived ability should be irrelevant to their motivation.

Achievement motivation theorists predict that students expect failure when they are forced to become involved in activities that are too difficult for them (e.g., play against more able opponents) and consequently experience anxiety. According to goal perspectives theory, this is true when low learning goals are adopted. However, when the student's goal is improvement in competence, he or she does not worry about failure even when confronted with very difficult tasks.

In order to test these assumptions, in addition to LAPOPECQ and to Harter's (1982) perceived physical competence scale, 1,393 Greek students responded to a modified version of a questionnaire used by Csikszentmihalyi and Larson (1984). Students were asked how they feel when they play or exercise with classmates who are not very able in sport. Factor analysis revealed two stable factors measuring intrinsic motivation and anxiety. A similar factor solution emerged from students' responses to the same questionnaire measuring students' intrinsic motivation and anxiety when they play with classmates who are very good in sport (see Papaioannou, 1992).

Figure 12.5 shows results regarding the intrinsic motivation scores of students extremely high and extremely low in perceived competence for play or exercise with either high or low achievers when they perceive their classes as extremely

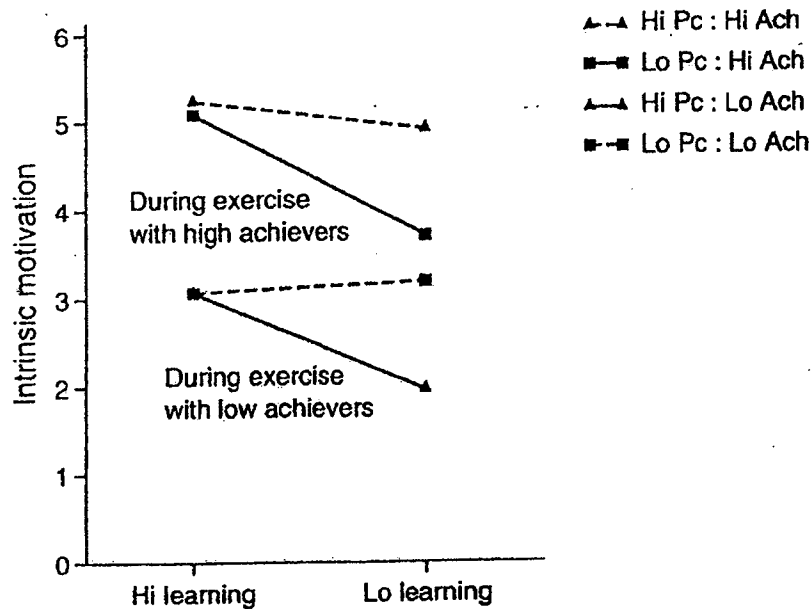


Figure 12.5 Interaction between intrinsic motivation, perceived competence, and perceptions of learning goals (Hi = extremely high; Lo = extremely low; Ach = achievers; Pc = perceived competence).

high or extremely low learning oriented. These results imply that all students are more motivated to play with high rather than low achievers. This finding is hardly surprising because almost every theory of motivation stresses the importance of challenging tasks to the increase of students' intrinsic motivation. For all students, play or exercise with high achievers is a more challenging task than play or exercise with low achievers.

Nevertheless, the most interesting result was an interaction between intrinsic motivation, perceived competence and perceptions of learning goals (see Figure 12.5). This finding implies that when the students' class is perceived as extremely high learning oriented, there is no difference at all between extremely high and extremely low perceived competence students' intrinsic motivation during play or exercise with either high or low achievers. In contrast, when students perceive their class as extremely low learning oriented and play or exercise with high achievers occurs, there is a substantial drop in extremely low perceived competence students' intrinsic motivation but no decrease at all in extremely high perceived competence students' motivation. Moreover, when the class is perceived as extremely low learning oriented, and when exercise or play with low achievers takes place, there is a substantial decrease in extremely high perceived competence students' intrinsic motivation but no decrease at all in extremely low perceived competence students' motivation. Further examination of the results revealed that all the aforementioned differences were very large (see Papaioannou, in press).

The prediction that perceived competence determines students' motivation was true when students perceived low learning goals. However, when extremely high learning goals were adopted, students' intrinsic motivation did not differ in accordance with their perceptions of ability. In other words, when learning goals are strongly emphasised in the class, both high and low perceived competence students prefer difficult, challenging tasks (i.e., play or exercise with high achievers) because this is most likely to lead to further improvement in competence. Importantly, although students may differ in perceptions of competence, they are equally motivated to engage in difficult tasks. Similarly, students are equally motivated during play with low achievers despite the vast differences in their perceptions of competence. Thus, once again, these data suggest that if we want to provide optimum motivation for students of all levels of ability, a learning orientation should be adopted.

Regarding the assumptions about anxiety, the most interesting result was an interaction between anxiety and perceptions of learning goals (see Figure 12.6). The results imply that when play or exercise with high achievers occurs, all students perceiving extremely low learning-oriented classes are more anxious than students perceiving extremely high learning-oriented classes. In contrast, during play or exercise with low achievers, all students perceiving extremely low learning goals are less anxious than students perceiving high learning goals. To express the previous results in a different way, although there is no difference in students' anxiety during

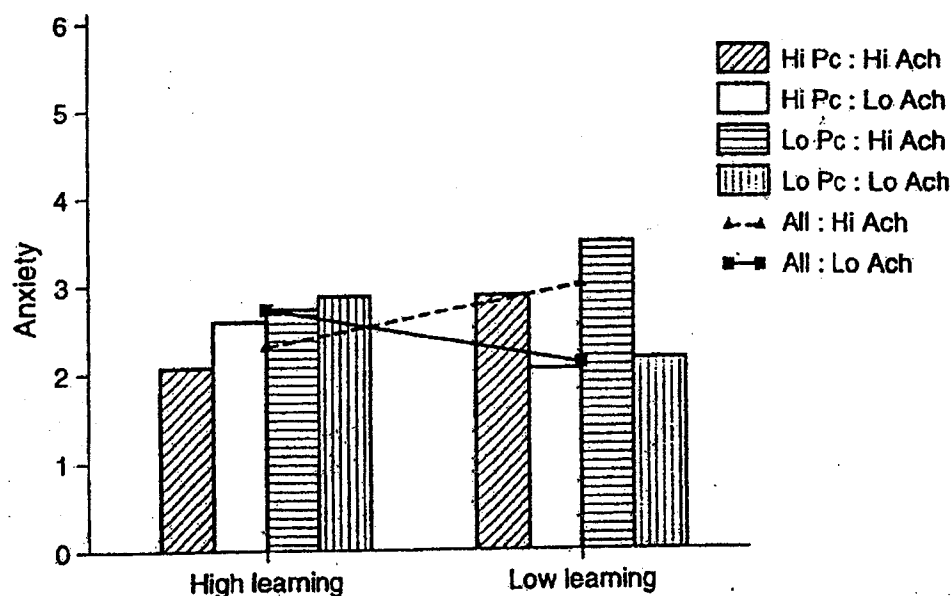


Figure 12.6 Interaction between anxiety and perception of learning goals: (H) = high; Lo = low; Ach = achievers; Pc = perceived competence; All = all students.
 Note. From *Students' Motivation in Physical Education Classes Which Are Perceived to Have Different Goal Perspectives* by A. Papaioannou, 1992, unpublished doctoral dissertation.

play or exercise with either high or low achievers when they perceive their classes as high learning oriented, students perceiving extremely low learning-oriented classes are much more anxious when they play with high rather than low achievers.

Overall, when low learning goals are adopted, students perceive the task as relatively difficult (i.e., play or exercise with high achievers), and they experience higher levels of anxiety than when they perceive the task as relatively easy. This is true for either extremely low or extremely high perceived competence students. On the other hand, when high learning goals are adopted there is no difference in students' anxiety due to the level of task difficulty. Students experience the same level of anxiety irrespective of whether they face difficult or easy tasks.

In sum, if we want to increase all students' motivation and to decrease aversive emotions like anxiety, the adoption of high learning goals in the class is recommended. Importantly, taking into consideration the possibility that in the future people will exercise with their wives, husbands, children and friends rather more, that is with people who will have different abilities from their own, the adoption of high learning goals appears to be the best way to motivate adolescents to adopt exercise as a lifestyle habit.

Conclusion

At the beginning of this chapter three general issues were addressed: how we can maximise students' motivation and achievement in the lesson; how we can sustain equality in the class; how we can learn about these issues by adopting a research methodology that considers the interactional effects of dispositional and situational differences.

Overall, the findings presented suggest that the adoption of a high-learning- and low performance-oriented environment is the most appropriate in order to maximise motivation and achievement for children of all levels of ability.

With regard to teachers of physical education, it is proposed that they should direct their efforts to how to increase all students' skill learning and not focus on individual differences in athletic ability; spend more time for skill practice, knowledge about skill or fitness development and health promotion; support students' autonomy; consider students' mistakes as a guide for further learning and not as an indication of low ability; provide challenging, difficult tasks for all students; and stress the values of personal progress and cooperation.

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