DOCUMENT RESUME

ED 359 166 SP 034 606

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TITLE Toward Creating the Intrinsically Motivating Classroom: Can Students' Motivational Orientations Be Changed?
PUB DATE 93
NOTE 84p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Attitude Change; *Change Strategies; Elementary School Students; Grade 6; Higher Education; *Incentives; Intermediate Grades; Learning Motivation; *Motivation Techniques; *Self Motivation; Social Studies; *Student Attitudes; Student Characteristics; *Student Motivation; Surveys
IDENTIFIERS *Intrinsic Extrinsic Classroom Orientation; Self Report Measures

ABSTRACT

The purposes of this study were: to examine the terms "intrinsic motivation" and "extrinsic motivation" by defining and analyzing characteristics of each; to investigate their relevance to classroom practice; and to determine if students' motivational orientations can be changed. A modified version of Harter's Self-Report Scale of Intrinsic vs. Extrinsic Orientation in the Classroom was administered to two groups of 6th-grade social studies students (N=49). Students were asked to rank themselves along a continuum as being extrinsically or intrinsically motivated. A 2-week unit was then presented using intrinsic motivators for the first group (called the endogonous group) and extrinsic motivators for the second (called the exogenous group). The final step in the study was to determine if the motivational orientations of the students, as measured by readministration of the survey, changed during the course of the unit. Findings indicate that student motivational orientation can be changed based upon exposure over time to an environment with a particular motivational orientation. Appendices provide the survey questions as categorized; the survey as given to students; the contract and questions given to students in the endogenous group; and suggestions for increasing student motivation. Fourteen figures displaying seven categories of data for each group are included. (Author/LL)

Toward Creating the Intrinsically Motivating Classroom: Can Students' Motivational Orientations Be Changed?

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RUNNING HEAD: STUDENT MOTIVATIONAL ORIENTATION

Abstract

Student motivation is an issue which affects teachers of every grade level and subject. The purpose of this study was to bring meaning to the terms intrinsic and extrinsic motivation, by defining and analyzing their characteristics, examining how they are relevant to classroom practice, and determining if students' motivational orientations can be changed. Two groups of sixth grade social studies students completed a survey in which they ranked themselves, along a continuum, as being extrinsically or intrinsically motivated. The two groups then participated in a two-week unit. For the first group, intrinsic motivators were used. For the second group, extrinsic motivators were used. The final step in the study was to determine if the motivational orientations of the students, as measured by readministration of the survey, changed during the course of the unit. Forty-nine students participated during a twelve-day period. Findings indicated that student motivational orientation can be changed based upon exposure over time to an environment with a particular motivational orientation. An overriding theme throughout this study was application of research findings to the classroom. Although the separate components of motivation were examined and measured, the focus of the study was on motivation as a complete entity, as it more closely pertains to classroom reality.

Toward Creating the Intrinsically Motivating Classroom: Can Students' Motivational Orientations Be Changed?

CHAPTER I: INTRODUCTION

Foremost among concerns for every teacher is the question of how to motivate students. Some students enter the classroom ready and willing to work, eager to learn, and constrained only by time. Others, however, appear completely disinterested and must be virtually bribed to accomplish a minimally acceptable level of learning. The traditional solution for such a problem has been to incorporate in the classroom external reinforcement -- token systems, praise, privileges, stickers, gold stars, rewards, and even threats and punishment -- to address the disparity. Recent research, however, has indicated that such an approach can actually function as a motivational disincentive: over time, these externally motivated students may be less likely to join the ranks of the intrinsically motivated because rewards ultimately reinforce their low or extrinsic motivational orientation (Deci & Ryan,

1985; Boggiano, Barrett, Silvern, & Gallo, 1991; Lepper & Greene, 1978; Boggiano, Main, & Katz, 1988).

A significant problem inherent in an analysis and discussion of student motivation is the wide and unwieldy nature of the topic. First, student motivation is highly subjective and open to a range of definitions and interpretations. In addition, a plethora of information and research exists on the topic, making it that much more difficult to analyze in detail. Finally, a wide range of factors, both in isolation and in combination, affect the end result. A few examples which play a role in the outcome include student attitudes, self-perception, self-esteem, ability, interests, prior experiences, and expectations, as well as those of teacher, parents, school, peer groups, and community.

The purpose of this study is to bring meaning to the terms intrinsic and extrinsic motivation, by defining and analyzing their characteristics, examining how they are relevant to classroom practice, and determining if students' motivational orientations can be changed.

To examine these issues, I administered a brief survey (a modified version of Harter's Self-Report Scale of Intrinsic vs. Extrinsic Orientation in the Classroom) to two groups of sixth grade social studies students, in order to determine how the students rank themselves, along a continuum, as being extrinsically or intrinsically motivated (Harter, 1981). Students were told that they did not have to identify themselves on the survey. I then taught a two-week unit on Rome to the two groups. For the first group, intrinsic motivators were used, such as helping students set reasonable and substantial goals for their own learning, having students reinforce and monitor themselves for accomplishing steps toward their goals, and having students choose some final project to show the learning that they accomplished. For the second group, extrinsic motivators were used, including a token system to reward steps toward accomplishing learning, and a final test as a means of expressing accumulated knowledge. The final step in the study was to determine if the motivational orientations of the students, as measured by readministration of the

survey, changed during the course of the two weeks. Observation of student behavior and responses was also recorded.

Hypothesis

If current research findings hold in the classroom as well as in clinical situations, I hypothesize that student motivational orientations can be changed based upon exposure over time to an environment with a particular motivational orientation. I believe that students exposed to the intrinsic environment will become more intrinsic in their responses on the survey, while students exposed to the extrinsic environment will become more extrinsic in their responses on the survey.

An overriding theme throughout this study is application of research findings to the classroom. Research results in the area of student motivation are enlightening only to the extent that they have application to, and can be replicated in, the classroom context. Although the separate components of motivation were examined and measured, the focus of the

study was on motivation as a complete entity, as it more closely pertains to the complexity of classroom reality.

CHAPTER II: LITERATURE REVIEW

INTRINSIC AND EXTRINSIC MOTIVATION: A COMPARISON

Deci (1985) defined intrinsically motivated activities as "ones for which there is no apparent reward except the activity itself" (p. 23). Hence, intrinsically motivated individuals engage in certain activities solely for the pleasure that they derive from the activity and not because performance of the activity leads to some external benefit. These activities are ends in themselves, rather than means to some other end.

The idea of intrinsic motivation focuses on the need and capacity of individuals to interact effectively with their environment (Deci, 1975). People engage in particular behaviors within the environment in order to feel a sense of competence and self-determination. Each individual's "motivational mechanism" will lead that person naturally to situations which provide appropriate challenges for optimum use of abilities (Deci, 1975, p. 57). Intrinsic motivation views humans as organisms actively involved with their environments such that they can

themselves bring about a certain rewarding inner state.

Conversely, extrinsic motivation theory sees humans as naturally passively involved with their environment. Extrinsically motivated individuals perform tasks or exhibit behavior in order to get some reward or comply with some external constraint, rather than to satisfy personal challenge with respect to controlling their environment. Thus, extrinsically motivated behavior is behavior with an external locus of causality (Deci & Ryan, 1985).

Extrinsically motivated activity, then, is a means to some other end, rather than an end in itself, and by extension can be seen as not worthy of performance for its own sake. That could be one explanation for Lepper, Greene, and Nisbett's (1973) finding that rewarding a child for participating in an enticing learning task reduced future motivation and interest in the activity.

The idea of control is also of significance in understanding the implications of extrinsic motivation. Donaldson (1979) postulated that we prefer and engage more readily in those activities we feel to be freely

chosen, because we prefer to control ourselves rather than to be controlled. The offer of a reward is an external control over our behavior, thereby decreasing both interest and pleasure. Although we may accept the condition temporarily by working for the reward, we are less likely to engage in the activity voluntarily and less likely to enjoy the activity when the reward is withdrawn. There is also evidence to suggest that the quality of what is produced as a result of the activity may decline when a reward contingency is present (Donaldson, 1979).

Intrinsically motivated activities, by contrast, bring a higher level of commitment and absorption, as well as "highly organized, energized, and motivated" behavior (Deci, 1975, p. 24). Deci (1986) also found that when learning something in which they have expressed interest, children come to a deeper and more integrated understanding of the topic or skill, and are more creative when they are free from external pressure.

Perhaps of greatest significance to educators is Deci's study comparing students exposed to more

controlling teachers with students whose teachers placed more emphasis on student control over learning. After only six weeks of exposure, students taught by controlling teachers developed a more extrinsic orientation toward learning when compared to their more autonomous counterparts. This increased extrinsic orientation was characterized by lower academic interest, lower student perception of competence, and lower problem solving and decision making abilities, whereas the increased intrinsic orientation of the autonomous group was characterized by higher problem solving and decision making abilities and higher self esteem (Deci, 1986). Motivation in this study was to some extent, then, a function of environment and subject to change over time.

Components of Motivation

In rendering these findings useful to daily classroom use, it is important to identify and examine the components of motivation more closely. Harter (1981), in designing a method to measure students' motivational orientation which would be appropriate for

the classroom environment, examined five separate strands of classroom learning: learning driven by curiosity contrasted to learning to please the teacher; incentive to work for one's own satisfaction or mastery contrasted to working to please the teacher or to get good grades; preference for challenge contrasted to preference for easy work; desire to work independently contrasted to dependence on the teacher for help; and internal contrasted to external criteria for success.

The efficacy for using these particular subscales has been borne out in large measure by other studies in addition to Harter's (1981). For example, in the areas of learning to satisfy curiosity or please the teacher and learning for personal satisfaction or to get good grades, Deci and Ryan (1987) found that extrinsically oriented children, when explaining why they participated in certain activities, gave reasons such as desire for approval, concern over assessment, tangible rewards, and pleasing the teacher. The extrinsic reasoning of these children focused on outcomes in the areas of grades, sanctions, and social approval. In contrast, Blumenfeld and Pintrich (1987)

found that intrinsically oriented students discussed their participation and achievement with explanations involving personal value of learning, attributions of intelligence, and pride, thus pointing to self-affirmation and personal satisfaction as incentives for learning.

Students' preference for challenge over easy work is of particular importance in the classroom. In order to reach their fullest potential, students must challenge their abilities. There is evidence to support that intrinsically motivated students choose more difficult and challenging problems in the absence of a contingency. However, when faced with certain contingency situations, such as grades, the same students are more likely to choose easier tasks which offer greater assurance of success (Harter, 1978). In doing so, students are channelled into relying on external rather than internal criteria to determine their success, and choose the success represented by a grade rather than the success represented by overcoming challenge. This situation will be discussed in greater depth within the context of the relationship of grades

and motivation.

In addition to the areas discussed above, Boggiano, Barrett, Silvern, and Gallo (1991) identified a sixth component of motivation, self-esteem and perceived competence contrasted to learned helplessness, which is quite pertinent to classroom learning. Intrinsically motivated students, in performing activities for the pleasure they derive from overcoming challenge, were resistant to successive failure encounters, and used their failures to build strategies for future successes. In contrast, extrinsically motivated students experienced a decrease in performance quality and self-esteem after failure feedback, and attributed the presence of uncontrollable factors (the task was too hard or their peers performed too well) or control of powerful others (the teacher was in a bad mood) as the primary reason for their failure (Boggiano, Main, & Katz, 1988). Thus, in attributing their outcome not to effort but to some factor beyond their control, these students exhibited the qualities of learned helplessness. From there, it is but a small step to the conclusion that, when faced

with a situation in which their efforts did realize substantial success, extrinsically motivated students will not recognize or acknowledge that effort as having a positive effect, and will not maintain that effort in future situations.

Volitional Processes

In addition to identifying components of motivation, it may also be useful to identify levels of motivation. Corno (1992) has identified two distinct levels of motivation, which she describes using the terms motivational processes and volitional processes. Motivational processes take place at that level where a predisposition toward learning or mastery goals becomes evident. At this level, students exhibit goal directedness in the sense that they expect success in school, and verbalize an orientation toward the value of schoolwork. Corno (1992) maintained, however, that this process is insufficient to explain quality student performance. Some students maintain an attitudinal value of learning and performance, without exhibiting the behavioral correlates of good performance, such as

avoiding or controlling distractions and developing efficient study skills. Volitional processes, which involve assuming active responsibility for learning and regulating concentration and behavior, are necessary to explain the behavioral aspects of motivation. These processes reach beyond goal directedness to involve the more complex area of goal accomplishment, and encompass those strategies involving persistence, discipline, and student metacognitive control over goal oriented behavior. Examples include using self reinforcers, visualizing success, recognizing and addressing distractions (including the student's own thoughts), setting and maintaining goals for accomplishing complex tasks, and persisting through tedious tasks (Corno, 1992). Corno (1992) defined volitional processes as those strategies for "managing complex tasks, protecting plans, and accomplishing task related goals," and theorized that these skills may function to compensate for weaknesses in other areas (p. 72).

Furthermore, Deci's (1986) finding, as discussed earlier, that students adapt to the motivational styles of their teachers indicated that the skills represented

by volitional processes can to some extent be learned. To foster these processes, Corno (1992) recommended using clear standards and organizational structures, prompting of visual imagery techniques ("imagine what it will feel like to finish this project"), modeling, and providing opportunities for students to practice regulating their environment.

Grades

The thorny issue of grading is currently under debate in the field of education. Educators are faced with the need to assess student knowledge and performance, and to convey assessment information to child, parent, and school. The traditional method for fulfilling this need has involved some form of grade. Yet the very process of receiving a grade for work accomplished can function for many students as an external control over learning, thereby changing the goal of learning. Instead of working for personal challenge, students work for a good grade. This was borne out in an earlier study by Harter (1978), in which she found that when no contingency was present,

fifth and sixth grade students chose to solve problems that provided challenge for their particular abilities. However, when a penalty/reward contingency, such as grading, was introduced, the same students were more likely to choose easier problems, thereby increasing the likelihood of a good grade rather than choosing tasks which offered greater challenge but increased the likelihood of failure. This is compounded by Deci's (1975) claim that negative encounters with the environment tend to reduce intrinsic motivation. If a low grade is seen as a negative encounter with the school environment, then students either risk decreased intrinsic motivation through the possibility of a low grade on a challenging assignment, or choose the less intrinsically motivating option by performing less challenging work in order to maximize grades, which is a goal extrinsic to the activity itself.

Praise

Any attempt at defining reward must also involve the question of understanding praise. As Donaldson (1979) postulated, "if you tell a child he is doing

well, are you rewarding him and perhaps running the same risk as if you gave him a prize?" (p. 122). The effects of praise are determined by the interpretation by the receiver of the praise, and the kind of information conveyed in the praise. For example, students with low ability and external locus of control are more receptive to praise and tend to interpret praise as a self concept message. In this context, praise may serve as a control over students' actions by increasing dependence on the teacher and hindering autonomous thinking and decision making (Canella, 1986). In this situation, the teacher becomes the authority, and success is determined by a source external to the student.

This presents a dilemma for teachers, who wish to encourage student responsibility and decision making, but must also have students understand the progress of their learning. At times, teachers must tell students how they are progressing. In using praise effectively, it is critical to focus on its informational or feedback elements rather than reward elements (Donaldson, 1979). Praise then becomes a vehicle for

communication of genuine information, for example connecting effort to achievement, rather than an indicator of worth.

Summary

A significant body of research indicates that intrinsic motivation offers the greatest benefits for students, as it yields feelings of competence and self-determination, appropriate challenges for optimum use of abilities, more integrated understanding of concepts and skills, higher problem solving abilities, and increased self-esteem. Extrinsic motivation, in contrast, can yield decreased interest in and enjoyment of rewarded activities, as well as lower perception of competence and lower problem solving abilities. It would seem logical, then, that educators should strive to foster intrinsic motivation in students.

The study described below represents one approach to fostering intrinsic motivation. At the same time, for purposes of comparison, it examines extrinsic motivation and the conditions that can bring it about.

CHAPTER III: DESCRIPTION OF STUDY

Subjects

Forty-nine heterogeneously grouped sixth grade social studies students participated in this study. The students involved came from diverse economic and cultural backgrounds. The cooperating school served suburban students, although the building was located within city limits. Seventy-four percent of the students involved with the study were Caucasian, 14 percent were African-American, and 12 percent were from other minority backgrounds, including Hispanic, Asian, and European. In this school, students were teamed in groups of 75. The students on individual teams had the same teachers for core academic subjects, although the students might be grouped differently for each class. For example, the 25 students who took math during third period did not necessarily all take language arts together during fourth period. The 49 participating students were all part of the same team. Twenty-four of the students were girls, 25, boys. Although divided into two classes, the students had the same teacher for social studies, so that exposure to any kind of

conditioning was fairly uniform. The daily schedule was arranged so that these two social studies classes took place consecutively. Therefore, there were no differences between groups as a result of one group taking social studies much earlier or later in the day than the other group.

The classroom portion of the study took place in March. By then, the daily routines and atmosphere of the class were well established, and students were very comfortable with each other, the school, and the teacher. Because I taught in that classroom for eight weeks during the previous semester, they were also familiar with me. My experience with these students was also advantageous in that I had a working relationship with each student, and therefore could draw more accurate conclusions from observing them.

The first class of students, hereafter referred to as the endogenous group, was composed of 12 boys and 13 girls. This group was exposed to motivators designed to encourage learning for internal reasons.

The second class, hereafter referred to as the exogenous group, was composed of 13 boys and 11 girls.

This group was exposed to motivators designed to encourage learning for external reasons.

Method

The first step in this study was to administer a 24-item survey to each student, in order for students to rank themselves along a continuum from very extrinsically motivated to very intrinsically motivated. The first group of students was then exposed to intrinsic motivators, while the second was exposed to extrinsic motivators. After 12 sessions, each 40 minutes in length, the survey was readministered to ascertain any change in student opinion regarding how they were motivated.

The survey was designed using the five categories identified by Harter (1981) in her "Self-Report Scale of Intrinsic vs. Extrinsic Motivation in the Classroom." Item descriptions given in Harter's report were used as a basis for the present survey. In addition, a sixth category, perceived competence/self-esteem contrasted to learned helplessness, was added for a wider variety of information from the students.

Questions in the survey were set up in a two-part statement format. Students were asked to choose which part of the statement best described them, then rank the extent to which it functioned to describe them. The survey as designed showed categorization of items and was organized such that the intrinsic pole of each statement appeared on the left. (See Appendix A.)

The format and wording of the items were designed to legitimize either choice, so that students would be more inclined to answer accurately, rather than to choose the most socially desirable response (Harter, 1981). Similarly, to ensure a more accurate overall picture of students' orientations, category names were removed, questions were scrambled, and half the questions were reversed so that the intrinsic pole appeared as the right portion of the statement, rather than the left. No two questions from the same category appeared next to each other, and no more than two questions which began with identical poles were next to each other. (See Appendix B.)

The survey was tabulated by assigning a numeric value to each self-ranking. For example, on item 1 of

the student version of the survey, "Some students need to have grades to know how well they are doing in school, but some students know whether or not they are doing well in school without grades," an answer of "c: very true for me" next to the latter portion of the statement would be scored as 30, denoting the maximum intrinsic orientation. Other answer choices decreased by increments of 10, such that an answer of "c: very true for me" next to the former portion of the statement would be scored as -30, indicating the maximum extrinsic orientation. A score of 0 indicates a middle ground or neutral point. Each item was scored in this manner, then an average score was calculated for each survey to yield an overall score for each student's survey. The higher the score, the more intrinsically motivated the student ranked himself or herself; the lower the score, the more extrinsically motivated. Each category was also averaged and compared separately, to reduce the risk of masking within-survey changes, and to provide additional information on how student motivation might change.

The post-test survey was tabulated identically to

the pretest. The figures shown in the following chapter display corresponding pre- and post-survey information in graphic form.

Student exposure to conditioning motivators took place in the context of a unit of study on ancient Rome. This unit of study was part of the required curriculum for sixth grade at this school, so as much normal classroom function as possible was maintained. Although the content was identical, the approach to the unit differed greatly for each group. Following, each approach is discussed in detail.

Initial relevance of the unit was established for both groups by showing aspects of ancient Rome which form the basis of American ideas and structures today, for example, governmental concepts, road-building methods, calendar, numeral system, language and vocabulary, engineering principles, and design of particular types of buildings such as the Colosseum.

Endogenous Group

Students of the endogenous group were told that they could choose how to show what they learned during

the course of the unit either by taking a test, completing a large project based on an area of interest for them, or completing two smaller projects if they had two areas of interest. The expectation that everyone would still be responsible for all reading and homework assignments was made clear. A list of potential project topics was distributed so that students could begin thinking about what choice they would make.

On the second day of the study, a contract was distributed to each student in the endogenous group. (See Appendix C.) Students were given three days to complete the contract and bring it in for finalization, conferencing with me, and recording purposes. This contract had three parts. The first required students to choose what form their expression of learning would take: test or project. The second part took the form of a project planner and required students to describe their project, list the steps they would need to take to complete the project, and set goals and dates for completion of portions of the project. The third portion of the contract took the form of a series of

questions students should answer in planning and completing the projects. These questions required students to reflect on their choices, their thinking, and their accomplishments as they completed work on the unit. Students who opted to take the final test were also required to complete the questions.

Each student in the endogenous group was required to conference with me after completing the contract. During the conference time, individual students discussed their plan, schedule, and expected product. A visualization strategy was used during the conference to encourage students to think of times when they had let some assignment wait until the last minute, then to express what it had felt like to be under pressure. Then they were asked if the assignment had turned out as well as they had hoped or expected. Each student was requested to imagine what it would feel like to follow a schedule so that last minute pressure would not appear. Finally, each student was asked to picture himself or herself finishing in plenty of time, then to tell how it would feel. Individual students were then instructed in reinforcing themselves for maintaining

the schedules and goals they had set for project completion. The visualization strategy was maintained throughout the study in the form of follow-up conferences and whole group reminders.

As a result of the use of twelve days of school instructional time, and the utilization within the study of information from the required curriculum, the option of eliminating a grade contingency was not available in this study. Study results for this group may have been affected by the fact that these students were still working toward a grade at the end of the unit. In order to minimize this effect, however, each student's project was graded based upon the extent to which he or she completed the terms of the contract as agreed upon, and the extent to which each student met his or her capabilities. No one who completed a project was graded based on a class-wide comparison.

All students were given a study guide near the end of the unit to prepare for a learning tournament held the day before the test. This tournament functioned to solidify information for those who chose to complete a project, and to review information for those who chose

to take the final test. Scoring of each test item was labeled on the test so that students could choose to invest greater time on the questions with greater point value. The letter grade of each test was generated by a predetermined school-wide grade scale.

Teacher feedback for the endogenous group connected student outcome to student process. For example, rather than saying, "You did a good job on your project," the teacher said, "Your project/test shows the hard work and thorough research/studying you have done." Students could thus feel competent because their effort yielded a quality product, and not because of personal praise given by the teacher. Feedback also came in the form of thought questions for students with regard to their own work, rather than teacher generated statements pointing to weakness or strength in assignments. Teacher communication with respect to behavior management also was designed to encourage student responsibility. For example, at the beginning of class, statements such as, "If you are not quiet and ready to work, you will not be able to learn this very well," were given, rather than, "It is time to get

quiet and begin class." A third broad category of statements used with the endogenous group included time management statements expressed for purposes of student planning, rather than for teacher control over the schedule.

Exogenous Group

All students in the exogenous group were required to take the final test as a means of evaluating what they learned during the course of the unit. These students participated in the use of a token system on a daily basis. This system was organized around daily and weekly drawings. Each student was given a white card at the beginning of each class if he or she had completed the homework from the night before. For each question answered in class, students were awarded a token. At the end of each class period, students were given time to exchange tokens for more white cards. Three tokens were required for one white card. Students wrote their names on the white cards, and put them in a bucket from which two names were drawn daily. The two students whose names were drawn were given the

opportunity to choose a prize from a "goody" bag. No prize cost more than fifty cents. Prizes included items such as packs of gum, pens, pencils, and yo-yos. After the daily drawing, all white cards were removed from the bucket and held until Friday. After the regular daily drawing on Friday, all white name cards from the week were placed back in the bucket, and a weekly drawing was held for a somewhat larger prize. These prizes averaged about $2.50, and included items such as pizza, ice cream, and burger coupons, a prism, a new set of markers, and a small solar picture kit. During the last week of the unit, students had the option of choosing that an extra point be added to their test grade, instead of drawing from the grab bag.

The teacher called on students to answer questions for tokens, thereby introducing an element of teacher control over student participation, and gave significant wait time to allow everyone a fair opportunity to answer questions correctly. Students who were called on but answered incorrectly were awarded tokens for effort or for approximating the answer, but students who raised their hands repeatedly

to give any answer in order to get a token were not so rewarded. That determination was up to teacher discretion, adding another element of teacher control.

The test for the exogenous group was identical to that for the endogenous group. The value of each test item was indicated on the test, and the letter grade was determined by the school-wide grade scale. Homework was described as being part of the final grade as well as a means of learning, rather than simply as a learning tool as it was portrayed for the endogenous group.

Teacher feedback was controlling, as well. "Should" statements, such as, "You should study hard for the test," functioned first to put the teacher in a place of authority over learning, and then to place emphasis on test grades and achievement, instead of learning. Behavior was controlled through references to rules and sanctions, rather than to student benefit or natural consequences.

As described above, students in the endogenous group were treated, both individually and collectively, as autonomous, as well as responsible for and able to

take a great deal of control over their own learning. Students in the exogenous group were treated in a very controlling fashion, both in the way they were spoken to and in the learning they were expected to accomplish.

Following, the results of this treatment will be discussed. First will be an analysis of pre- and post-survey results for the endogenous group. Results of the surveys for the exogenous group will then be detailed. Finally, teacher observations of the two groups will be compared.

CHAPTER IV: RESULTS OF THE STUDY

Survey Responses

As hypothesized, the endogenous group became to some extent more intrinsic in their motivational orientation in almost all categories. However, some students did become more extrinsic in their responses. As seen in Figure 1, there was a general shift to the right apparent in the graph of the post-test for the

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Insert Figure about 1 here

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overall tabulation of the surveys. Both the extrinsic and intrinsic extremes were pushed upward. Closer analysis does show, however, that the pre-test indicated two subgroups of students, one clustering at 4, and the other clustering at about 16.5. The post-test indicated two subgroups of students as well, but the spread between them was greater. These subgroups clustered at about -5 and 16.5. The higher cluster on the post-test graph was located at about the same level of motivational orientation, but showed almost twice the number of responses at that level. Some students,

however, became significantly more extrinsic in their motivational orientation. In summary, the group as a whole became more intrinsically oriented, with a marked shift downward of a few responses, indicating that there seemed to be two separate groups within the class, with respect to motivational orientation.

In the category of preference for challenge contrasted to preference for easy work (see Figure 2), the post-test indicated a shift toward a greater intrinsic orientation. There were fewer students at

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Insert Figure 2 about here

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the extrinsic extreme. The number of intrinsic responses remained relatively stable. Although two separate groups of students appeared in the post-test as in the pretest, the difference between them was less extreme.

In the area of learning for curiosity contrasted to learning to please the teacher, a somewhat modified shift was apparent (see Figure 3). Here, while the intrinsic orientation was not extended, the extreme

Insert Figure 3 about here

extrinsic boundary was pushed upward, indicating that some students did become less extrinsically motivated. The presence of two noticeable subgroups did not appear in this area.

In the area of learning for mastery contrasted to learning in order to please the teacher or learning to get a good grade, the post-survey indicated a marked shift toward an extrinsic orientation (see Figure 4). The extrinsic extreme was pushed ten points downward,

Insert Figure 4 about here

while the intrinsic extreme was pushed down over two points. The greatest cluster, however, was significantly higher in the second graph, again indicating a within-scale shift, and the presence of a subgroup of students who did respond favorably to the intrinsic motivators.

The students in the endogenous group exhibited a

downward shift in the category of independent judgment contrasted with dependence on the teacher's judgment

Insert Figure 5 about here

(see Figure 5), similar to the results of Harter's (1981) study. Her explanation that students tend to be more dependent on the teacher when content knowledge or expertise comes into play seemed also to hold here.

Unlike Harter (1981), however, the students in this study showed a shift upward in the area of internal contrasted to external criteria for success (see Figure 6). Both the extrinsic and the intrinsic extremes were pushed downward. Initially, these

Insert Figure 6 about here

students' responses spread evenly along the continuum. After exposure to the motivators used, however, a pronounced middle cluster appeared, again indicating a within-scale shift.

In the category of perceived competence/self-

esteem contrasted to learned helplessness, an increased extrinsic orientation was noted. The extrinsic extreme was pushed downward five points, and the greatest cluster was also pushed slightly downward (see Figure 7). This may be explained by the fact that only one student out of the entire class had been exposed to a contract like the one used here. The contract was a format that was very unfamiliar, and students required

Insert Figure 7 about here

a great deal of guidance and support in completing and implementing it. Perhaps their unfamiliarity and lack of comfort with this format made them feel less comfortable and less competent in this situation.

As hypothesized, some students in the exogenous group, after exposure to extrinsic motivators, exhibited a shift toward an extrinsic orientation. However, some students became more intrinsic in their responses. The extreme extrinsic boundary for overall tabulation of the surveys was shifted downward almost seven points, while the intrinsic extreme was shifted

Insert Figure 8 about here

upward almost two points (see Figure 8). Originally, a central cluster appeared at 10. However, the presence of two separate groups appeared again in the second graph, clustered at 0 and at 15. At the same time, a somewhat larger cluster appeared at 15 on the second graph than appeared on the initial graph. In sum, while some students became more extrinsically oriented, some students became more intrinsically oriented, according to their survey responses.

In the category of preference for challenge contrasted to preference for easy work (see Figure 9), the extrinsic extreme moved downward five points, but at the same time, there was a greater cluster than

Insert Figure 9 about here

originally at the intrinsic end of the scale. Again, the presence of two groups of students, one relatively extrinsically oriented and one relatively extrinsically

oriented, appeared in the final survey results.

In the area of learning for curiosity contrasted to learning to please the teacher, the range of responses was shifted slightly in both directions: the intrinsic extreme was pushed upward, while the extrinsic extreme was pushed downward. Again, some

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Insert Figure 10 about here

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students became more intrinsically motivated after being exposed to extrinsic motivators (see Figure 10).

In the area of learning for mastery contrasted to learning in order to please the teacher or get a grade (see Figure 11), the results were similar: there were

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Insert Figure 11 about here

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more responses at both the intrinsic and extrinsic extremes than initially.

As with the endogenous group, in the category of independent judgment contrasted to dependence on teacher's judgment, student responses became more

Insert Figure 12 about here

extrinsically oriented (see Figure 12). There were fewer responses at the intrinsic extreme, and the extrinsic extreme was pushed downward. Again, results in this area may be affected by dependence on teacher in areas of content knowledge and expertise. Also, teacher control was quite high for this group.

In Figure 13, the graph representing internal contrasted to external criteria for success indicated a higher intrinsic extreme (up over seven points to the

Insert Figure 13 about here

maximum point value), but a slight downward overall shift. Again, two distinct subgroups of students appeared in the post-test, clustered at 0 and at 15.

The most dramatic change for the exogenous group appears in the area of perceived competence/self-esteem contrasted to learned helplessness (see Figure 14). The extrinsic extreme moved downward almost eighteen

points out of a total of sixty. However, the greatest number of responses at the intrinsic extreme of the scale increased by 150% over the pretest. While the

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Insert Figure 14 about here

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group as a whole moved downward, there again was evidence of two separate groups of students, clustered at 15 and at 27.5. Thus, some students appear to have felt competent with the procedures used and the information discussed, as was borne out by the test grades in this group: 45% of the students in this group got A's on the final test.

Observation

A major concern for increasing student control over learning is the possibility of student misuse of that control. The potential for that misuse was present with the endogenous group, as the teacher overheard four students comment to their peers that the contract could provide an opportunity for them to do the least amount of work possible and still get an

acceptable grade. Two of these students were generally among the highest achieving in the class. It would seem that these students were adept at manipulating the system to maximize their grades.

Four of the generally highest achieving students in the class chose to take the final test, rather than complete a project. Initially, only five students indicated that they would take the final test. On the test date, which was also the due date for the projects, twelve students actually took the test. Overall, 18% of the test grades were A's, and 63% were D's and F's. Of the seven students who changed their minds at the last minute, five received D's or F's on the test, representing 42% of those letter grades overall. This brings into play the significance of Corno's (1992) volitional strategies: all of these seven students indicated in initial and follow-up conferences that their projects were proceeding at a satisfactory rate. The end result indicates that this was not the case. These students may have lacked the strategies which would enable them to accomplish this kind of project independently, and, by the time they

made that realization, it was too late to prepare adequately for the final test.

The test grades for the exogenous group were, as a whole, much higher. Forty-five percent of the test grades were A's, while 42% were D's and F's. Additionally, this group showed a much higher homework completion rate of 73%, a figure which does not include assignments turned in late. The total homework completion rate of the endogenous group was 50%. All students in both groups had the option of turning homework assignments in late with no penalty, although only the students in the exogenous took advantage of that opportunity.

Also worth acknowledgment is the affective difference between the groups. Although the endogenous group indicated that they preferred having the choice of how to express their learning, and despite the fact that they indicated enjoyment of unit activities, the overall atmosphere of the class was negative and unenergetic, with greater off-task behavior and talking during class. Some degree of this lack of engagement may have been because the students who chose projects

knew, ultimately, that they would not be responsible for the entire body of information as the test takers were. A mechanism to ensure that students learned all the information presented in the unit, beyond making the information as relevant and interesting as possible, was simply not within the scope of this project. This would be fertile ground for additional research. Ascertaining the extent to which all students learned the unit material would yield interesting and fruitful information regarding the efficacy of this kind of motivational approach to classroom learning.

The idea of extinction also may have played a part in this lack of involvement for many students in the endogenous group. They were expected to accomplish certain assignments and maintain certain behaviors without reward while others were rewarded for achieving those goals. Students, naturally, shared with each other their experiences with respect to the study. The endogenous group discovered that the exogenous group was being rewarded for completing their assigned work. Naturally, they were curious as to why they were not

being so rewarded. When the teacher explained to the endogenous group that they could choose their assignments, which the other group could not, they were not completely satisfied, and wanted the reward also. Thus, perhaps the knowledge that another group was being rewarded for completing the same work functioned to extinguish their work completing behaviors.

Students in the exogenous group, in contrast, were continually energetic, more consistently on task, and worked more efficiently. They knew that a reasonable amount of work must be completed for the drawing to take place, and entered the class ready to get that work done much more often than the endogenous group. They also exhibited much higher levels of excitement and involvement, and much lower levels of off task conversation during class.

Summary

Survey results indicated that student motivational orientation can be changed, but not necessarily consistently as a group. In both the endogenous and the exogenous groups, there were subgroups of students

who responded favorably and who did not respond favorably to the motivators used. This points to the conclusion, to be discussed in greater detail in the following chapter, that one motivational strategy will not work with all students. In addition, the positive atmosphere noted in the exogenous class indicated that there are aspects of extrinsic motivation that, when applied to the more complex classroom situation, can yield very positive results. This, too, will be examined further in the next chapter.

CHAPTER V: DISCUSSION AND APPLICATION OF RESULTS

Potential interfering conditions of this study included time limitations and prior conditioning of students. Although this study was designed to take twelve consecutive class days, because of two snowfalls and subsequent rescheduling difficulties, the unit in actuality spanned three and one half weeks. Thus, exposure to the motivators was neither intense nor consistent over time. Also, this study did not take into consideration Deci's (1975) argument that after being rewarded for learning, student interest in learning decreases over time. There existed no mechanism or time allowance within this study to measure that change over time. An extended study could well yield quite different results.

The issue of prior conditioning in the form of habit also may have affected the results of this study. All their academic lives, students have worked for good grades, for academic achievement, for praise, for some form of external recognition. Indeed, even as adults if we enjoy some activity for intensely personal reasons, it is an integral part of human nature to feel

some sort of pride for being recognized as having performed that activity well. This combines to create in our schools and in our classrooms an expectation for this sort of extrinsic recognition or goal. In twelve forty-minute sessions, it may be unreasonable to expect to change habits formed over the course of twelve years.

Perhaps the most significant, and the most logical finding of this study is the repeated presence of at least two distinct subgroups of students. Virtually every educator would agree that different students learn in different ways. The next natural step is that different students are motivated in different ways. Each student brings a unique set of abilities, needs, preferences, expectations, and interests to the classroom. Just as the use of one kind of lesson or teaching strategy will not reach every student, it is simplistic and naive to think that one motivational strategy or plan will be effective for every student.

In addition, Deci and Ryan (1985) indicated, "there are numerous learning and behavioral goals which our culture requires students to master in school but

which are not in themselves interesting or engaging" for all students (p. 49). Indeed, for many students there will be multiple aspects of the curriculum which are not "spontaneously compelling or inherently interesting" (Deci & Ryan, 1985, p. 49), and some of the students who participated in this study may simply have found ancient Rome to be one of those aspects. To use a motivational system which incorporates only intrinsic motivators assumes that schools will provide students opportunities to learn only what is interesting to them and that schools will not demand that students learn those things which do not interest them. This is neither reasonable nor wise, for two reasons. First, in doing so, we effectively teach children that this is an accurate representation of reality in both childhood and adulthood. This is not the case. Second, in not requiring students to do or learn some things which may not be of paramount interest to them, they miss learning information which may be vital for later success, and they may miss learning those volitional strategies which allow all of us to accomplish certain necessary tasks.

Given this, Deci and Ryan (1985) raise the question of what it is that we want schools to do, help students "develop viable cognitive structures which relate meaningfully to the rest of their lives," or insist that students accomplish a prescribed body of tasks and knowledge (p. 212). I believe that we must find some middle ground for accomplishing both. The dilemma for teachers is that students are not always capable of deciding for themselves what they should learn, and often need help through the actual process of learning (Donaldson, 1979). Also, freedom of choice may not be appropriate for the student who lacks self-responsibility and self-direction. In addressing this, we must not go to the other extreme, denying all choice, and thereby stifling creativity and resourcefulness through requirement of trivial and meaningless learning and activities. We must, while accomplishing that body of knowledge, also teach students responsibility and self-regulation. And, as Corno (1992) believes, waiting until later, when students are more mature and in middle or high school, may contribute significantly to the problem of habitual

undermotivation.

In conclusion, early on, we must find some balance between intrinsic and extrinsic motivators, taking into account individual student needs and abilities. We must remain aware of the fact that extrinsic motivators, like rewards, have some unintended negative effects, but can have positive effects as well. They may be necessary to produce the initial desired behavior, or to make a person aware of intrinsic interest in an activity. Intrinsic interest must also be developed through introduction of student choice, relevant and engaging learning activities, purposeful learning, and using grades as an informational method of feedback, rather than a statement of worth (see Appendix D). In this process, we must redefine learning as what results from striving for personal improvement rather than performance in exchange for a grade. In doing so, we will place emphasis on learning as something that is vital to our daily lives, and not something that has to be done for the teacher or for the grade.

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Figure 1. Endogenous Group
Overall Orientation

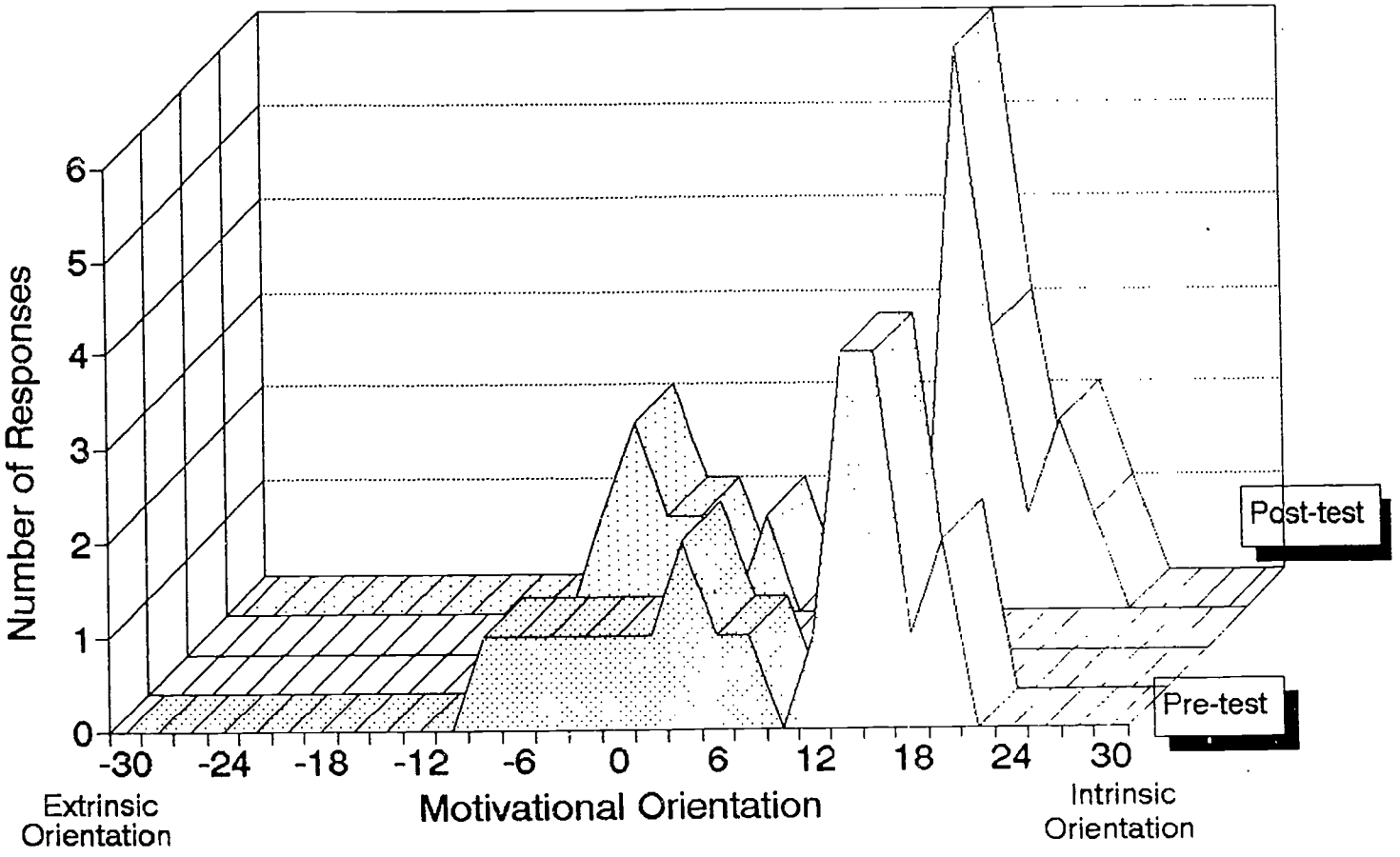


Figure 2. Endogenous Group
Preference for Challenging v. Easy Work

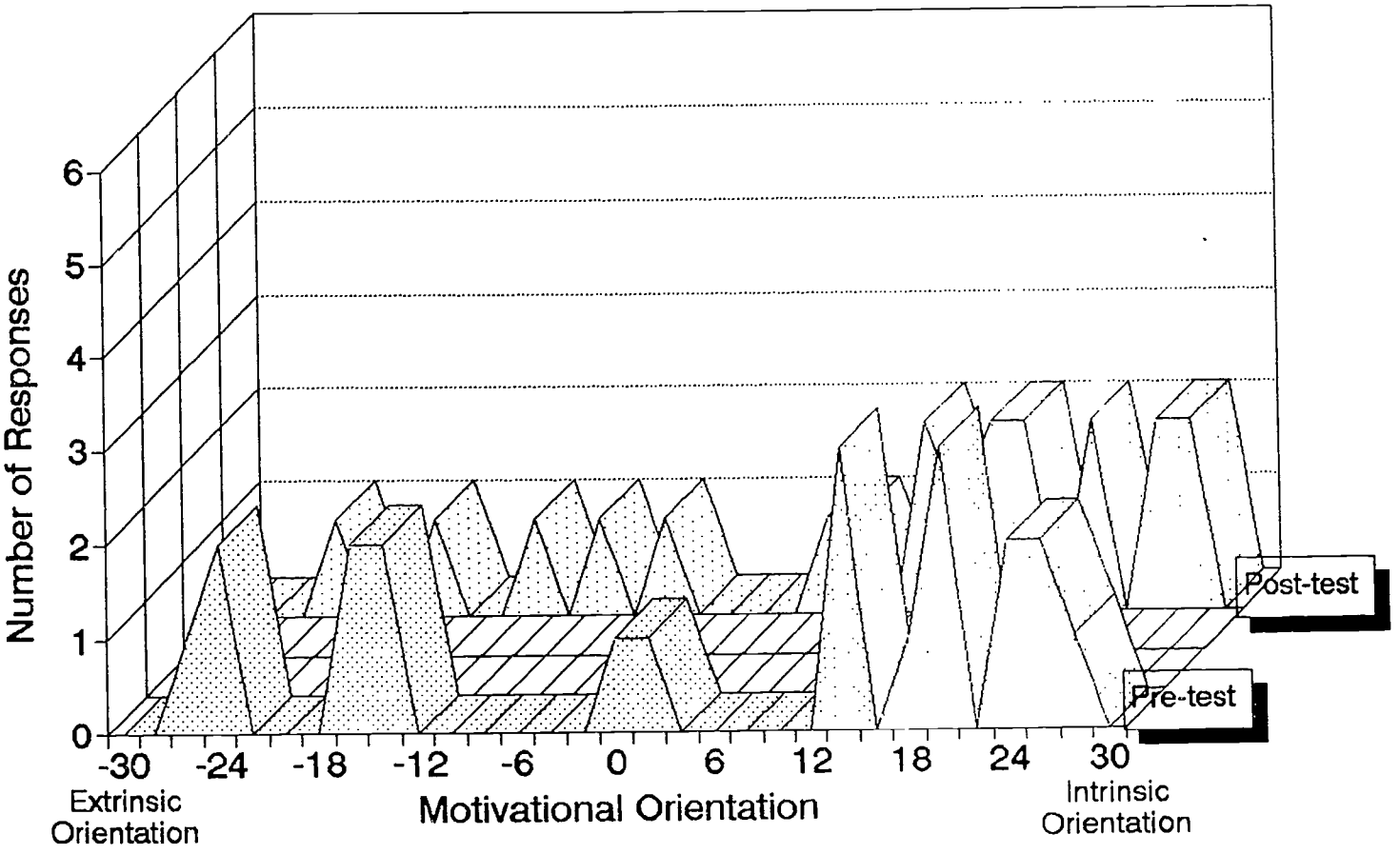


Figure 3. Endogenous Group
Curiosity v. Pleasing Teacher

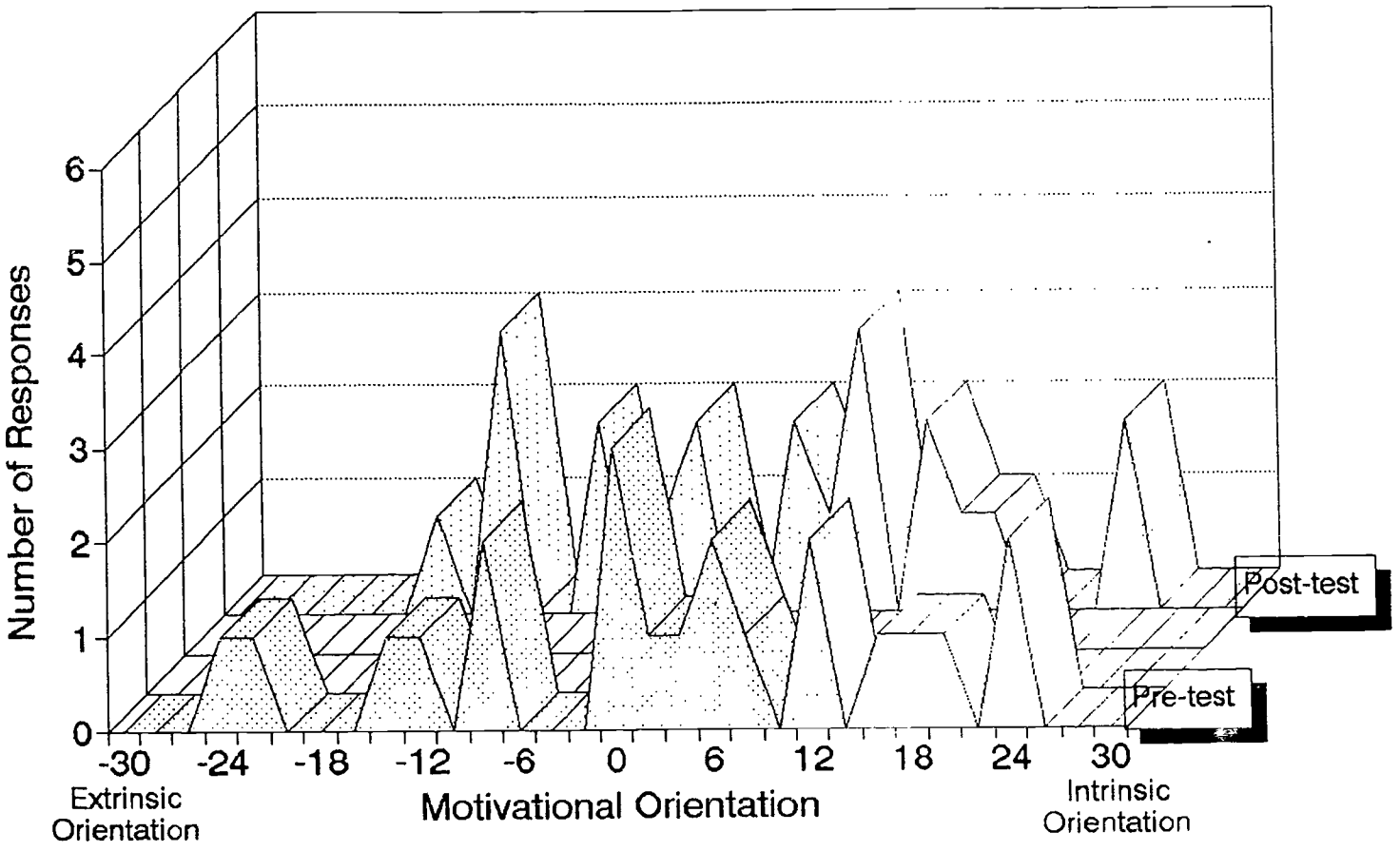


Figure 4. Endogenous Group
Concept Mastery v. Getting Good Grade

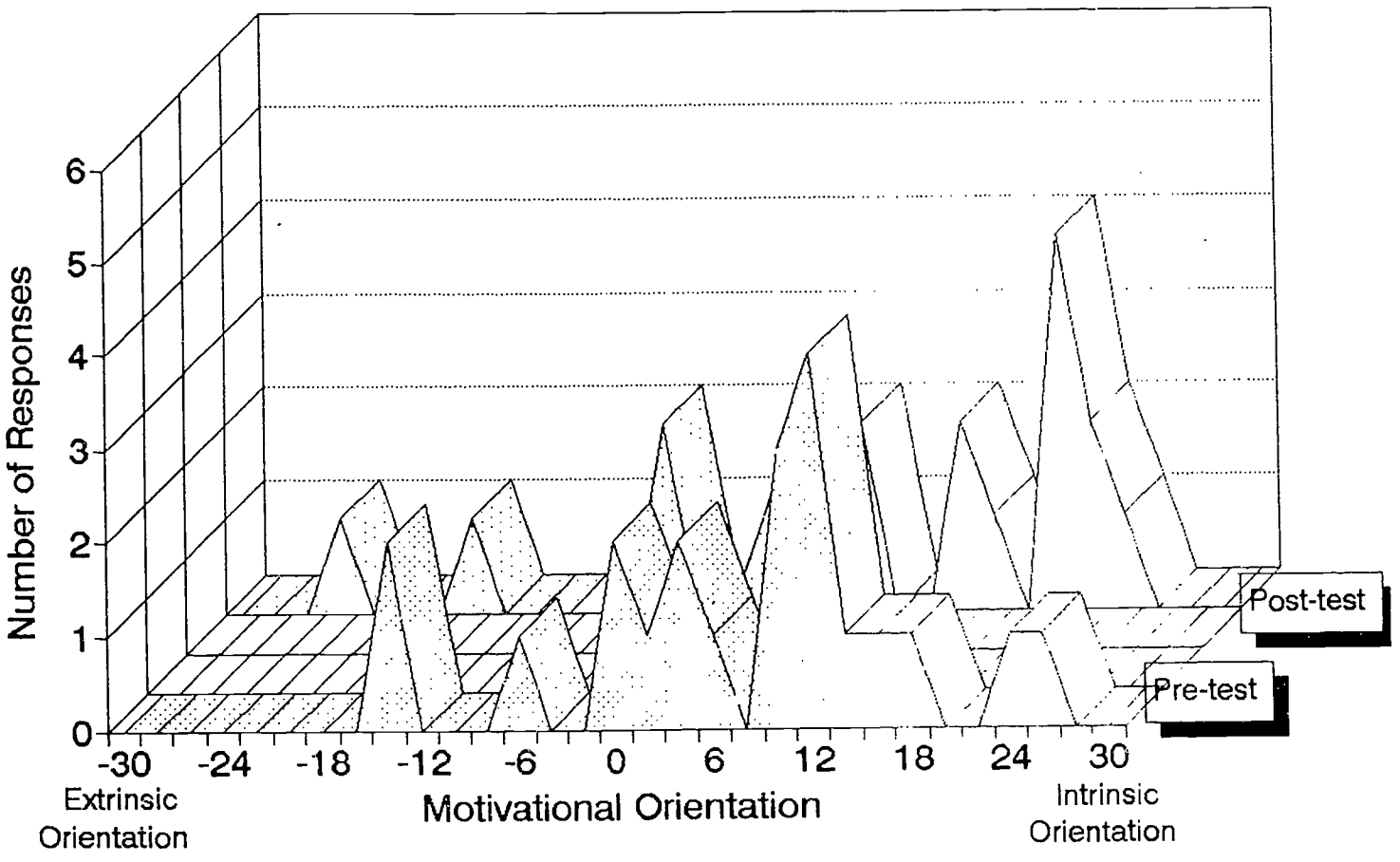


Figure 5. Endogenous Group
Judgment: Independent/Teacher-Dependent

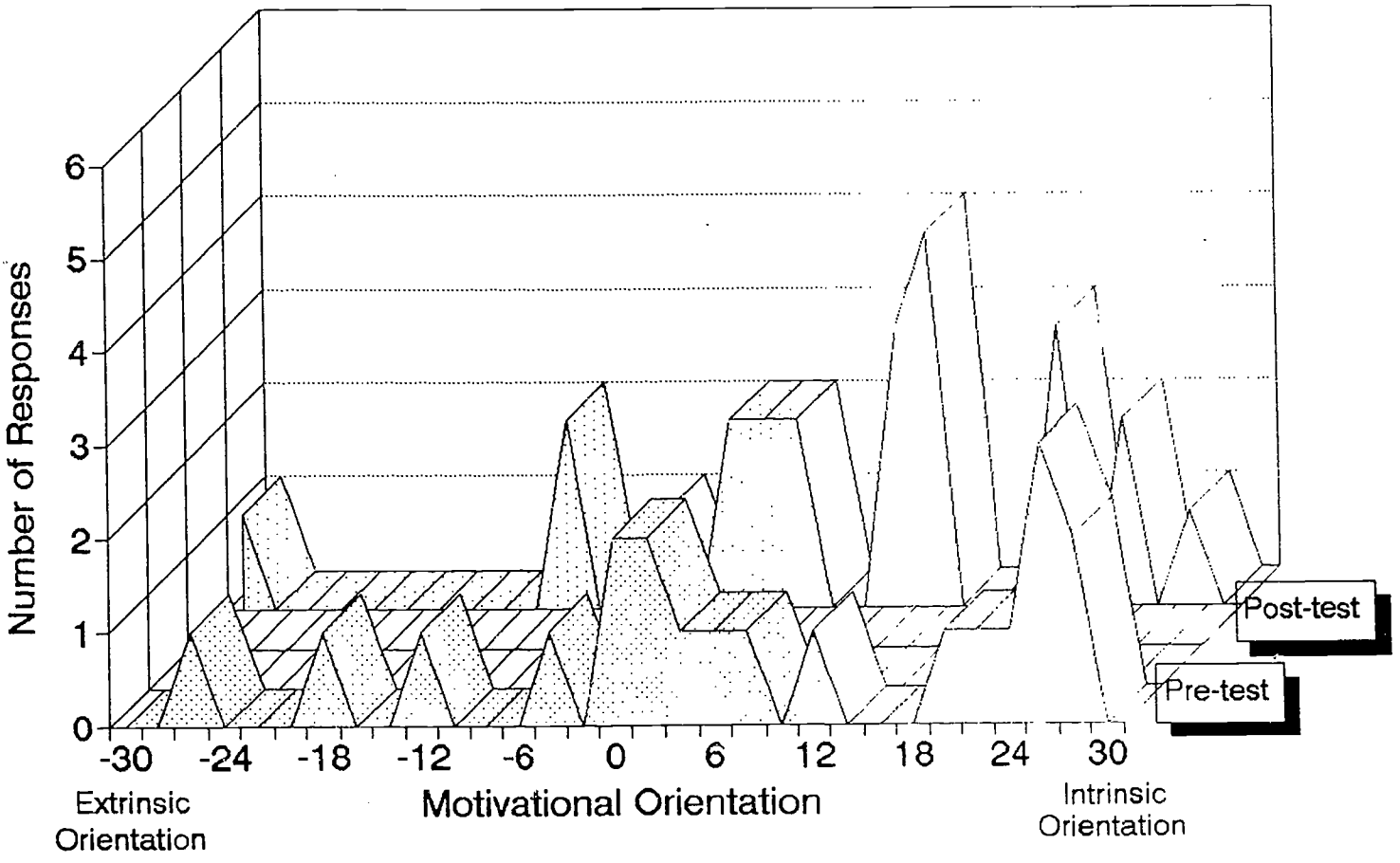


Figure 6. Endogenous Group
Success: Internal v. External Criteria

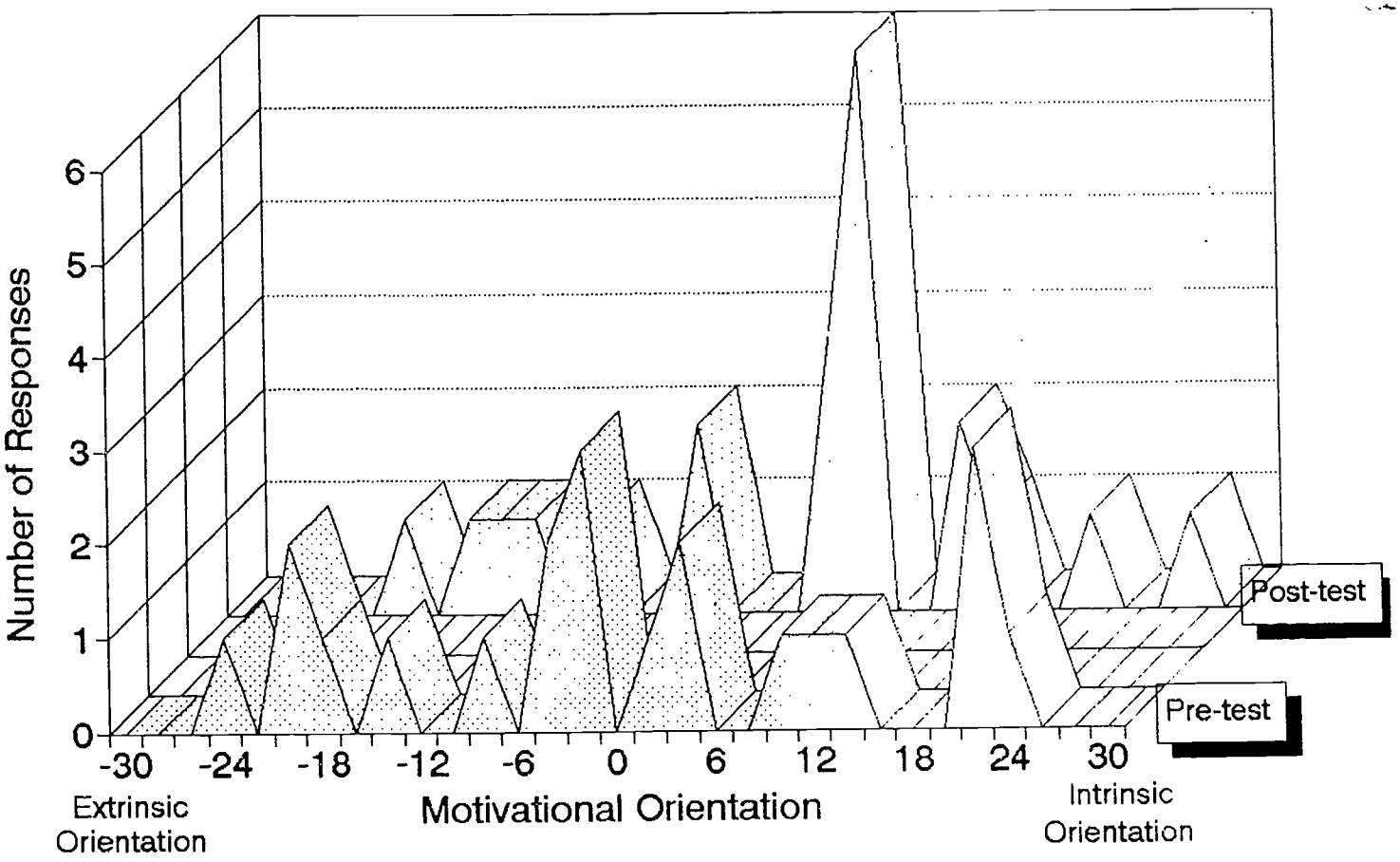


Figure 7. Endogenous Group
Perceived Competence v. Helplessness

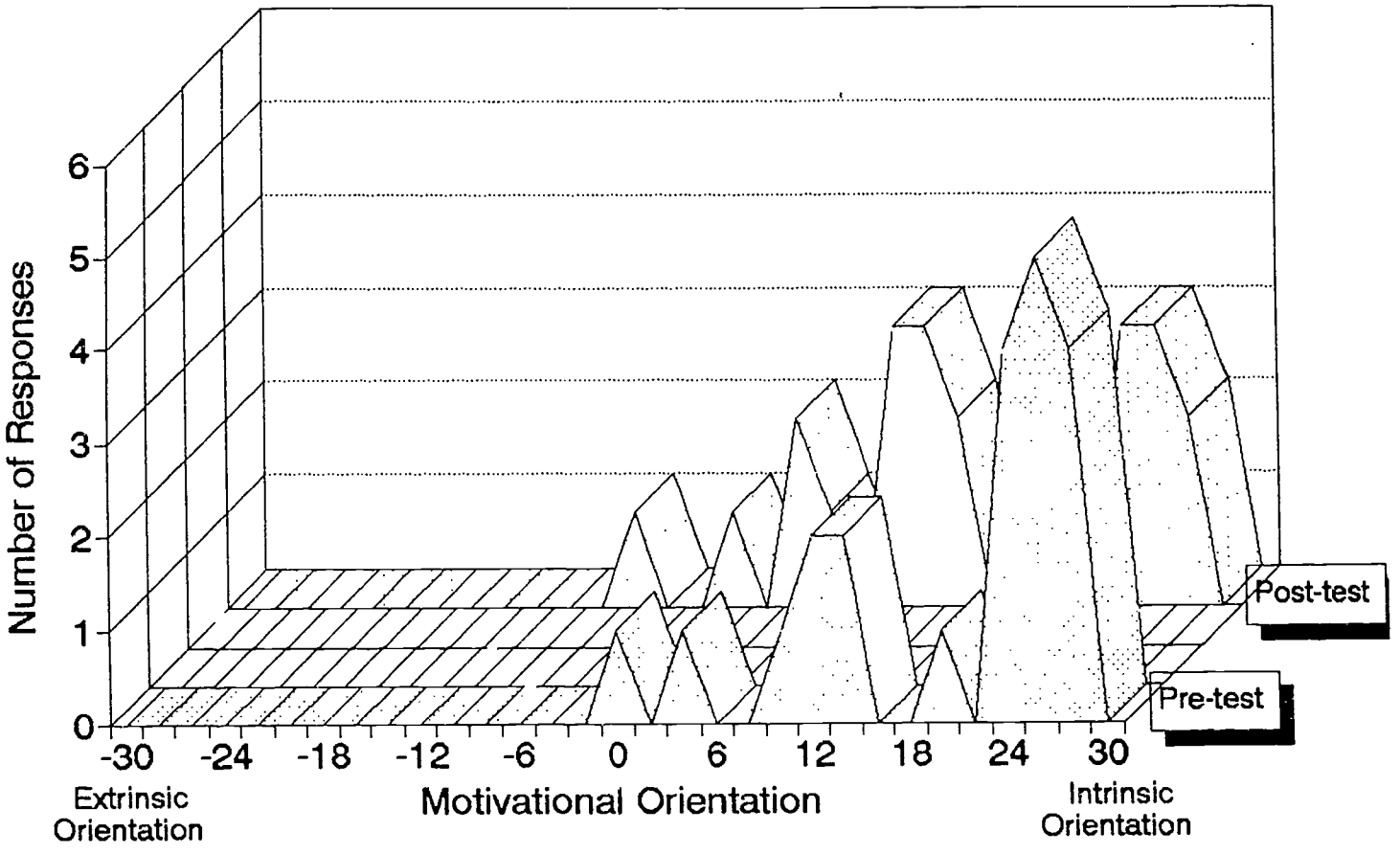


Figure 8. Exogenous Group
Overall Orientation

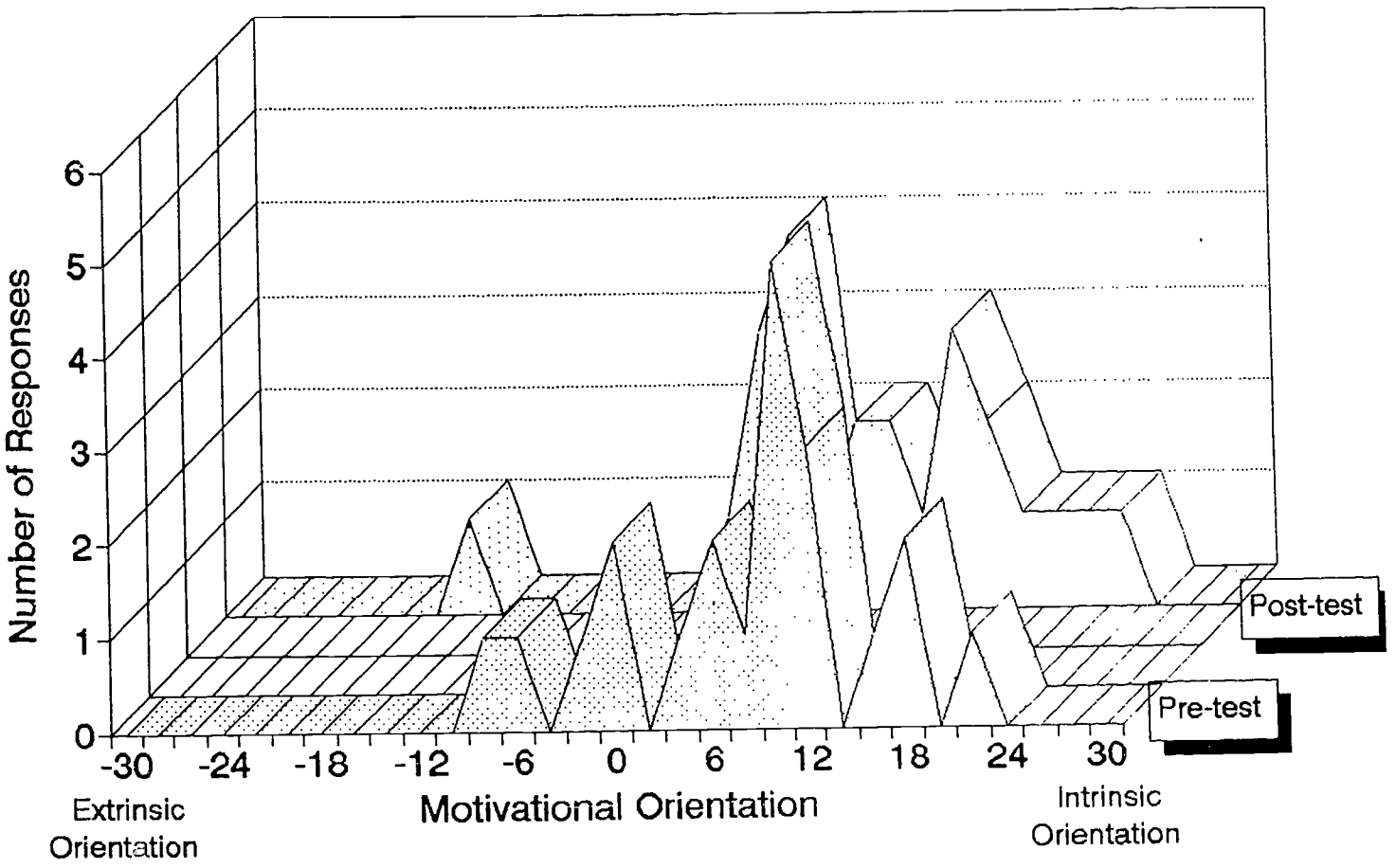


Figure 9. Exogenous Group
Preference for Challenging v. Easy Work

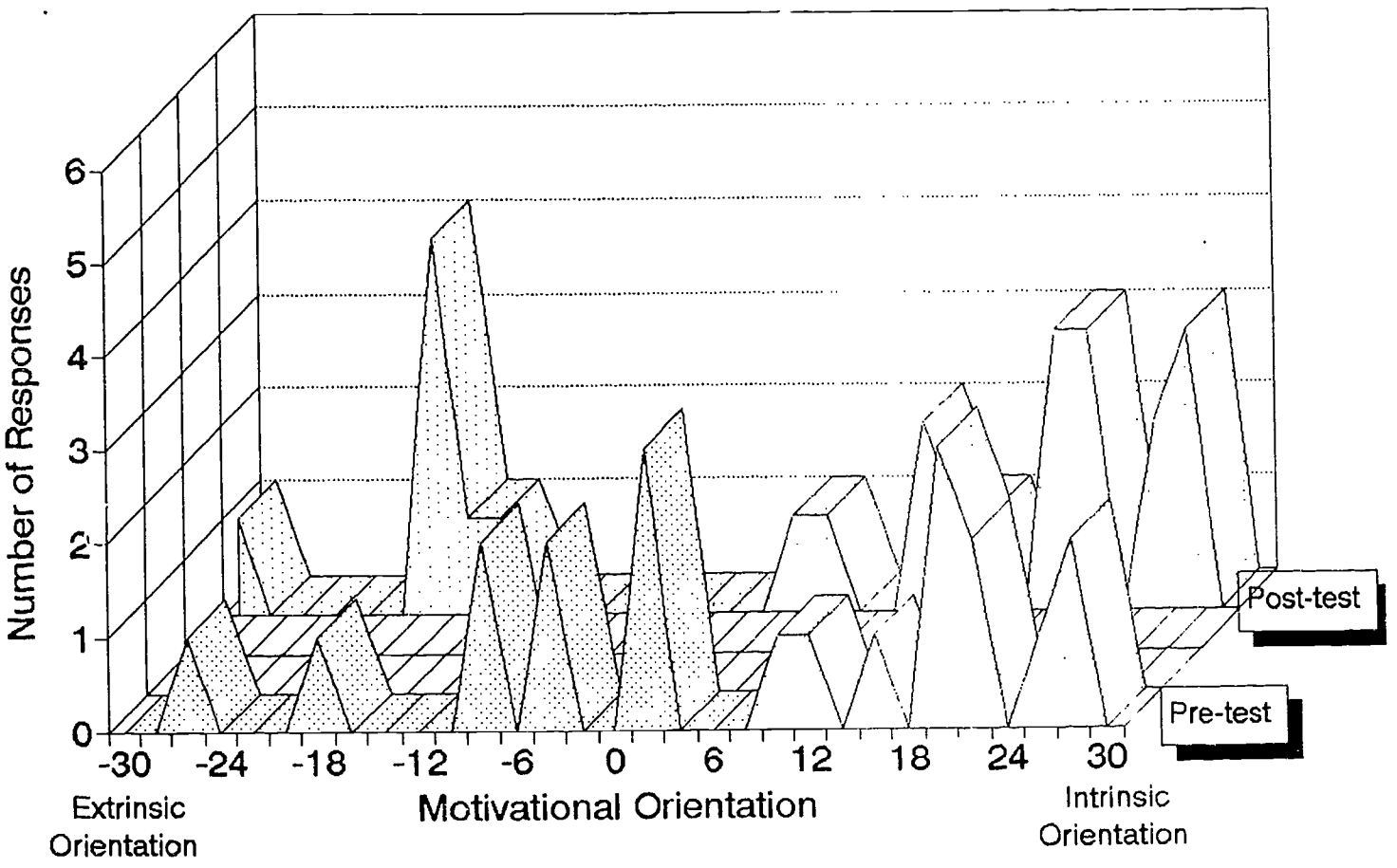


Figure 10. Exogenous Group
Curiosity v. Pleasing Teacher

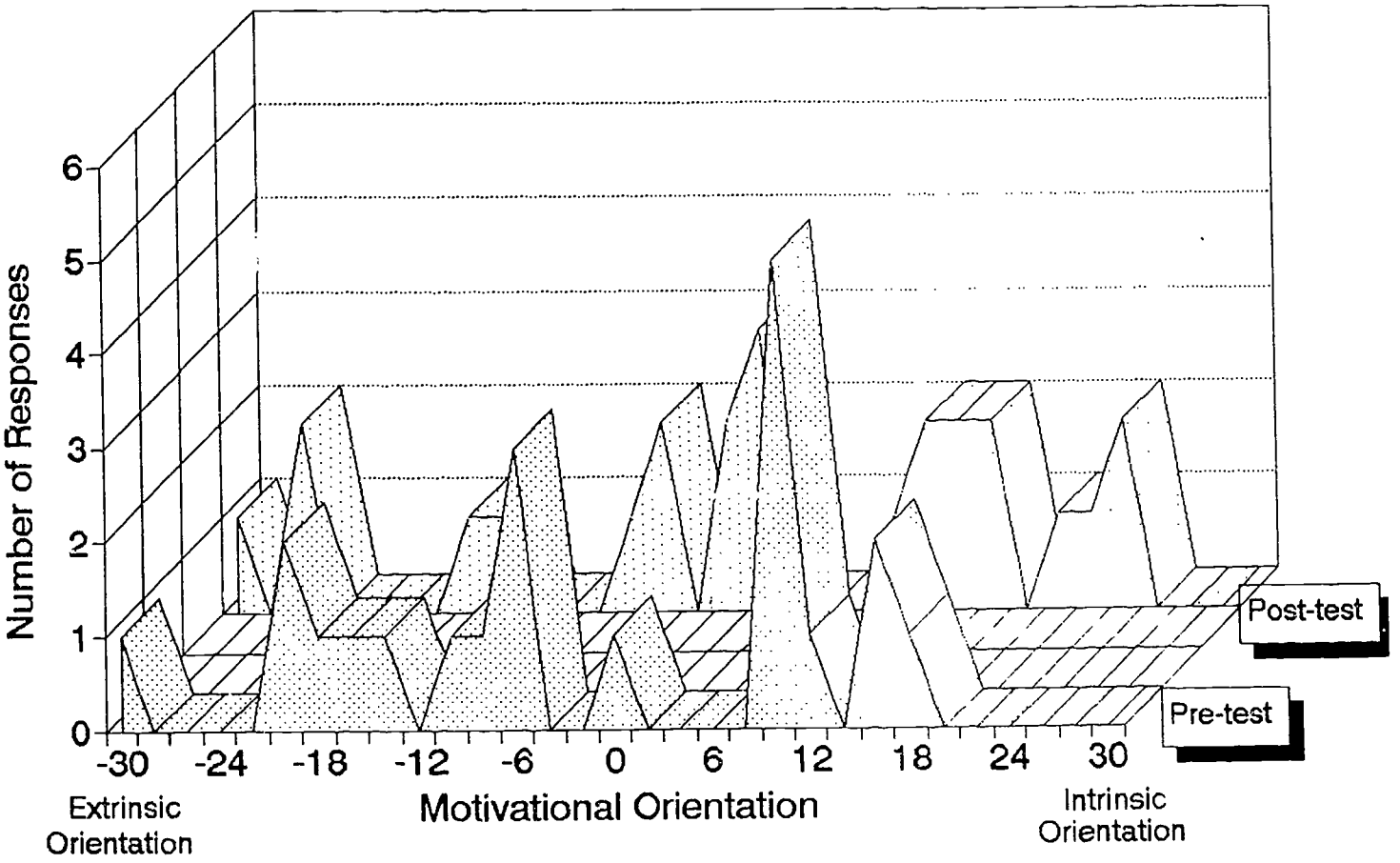


Figure 11. Exogenous Group
Concept Mastery v. Getting Good Grade

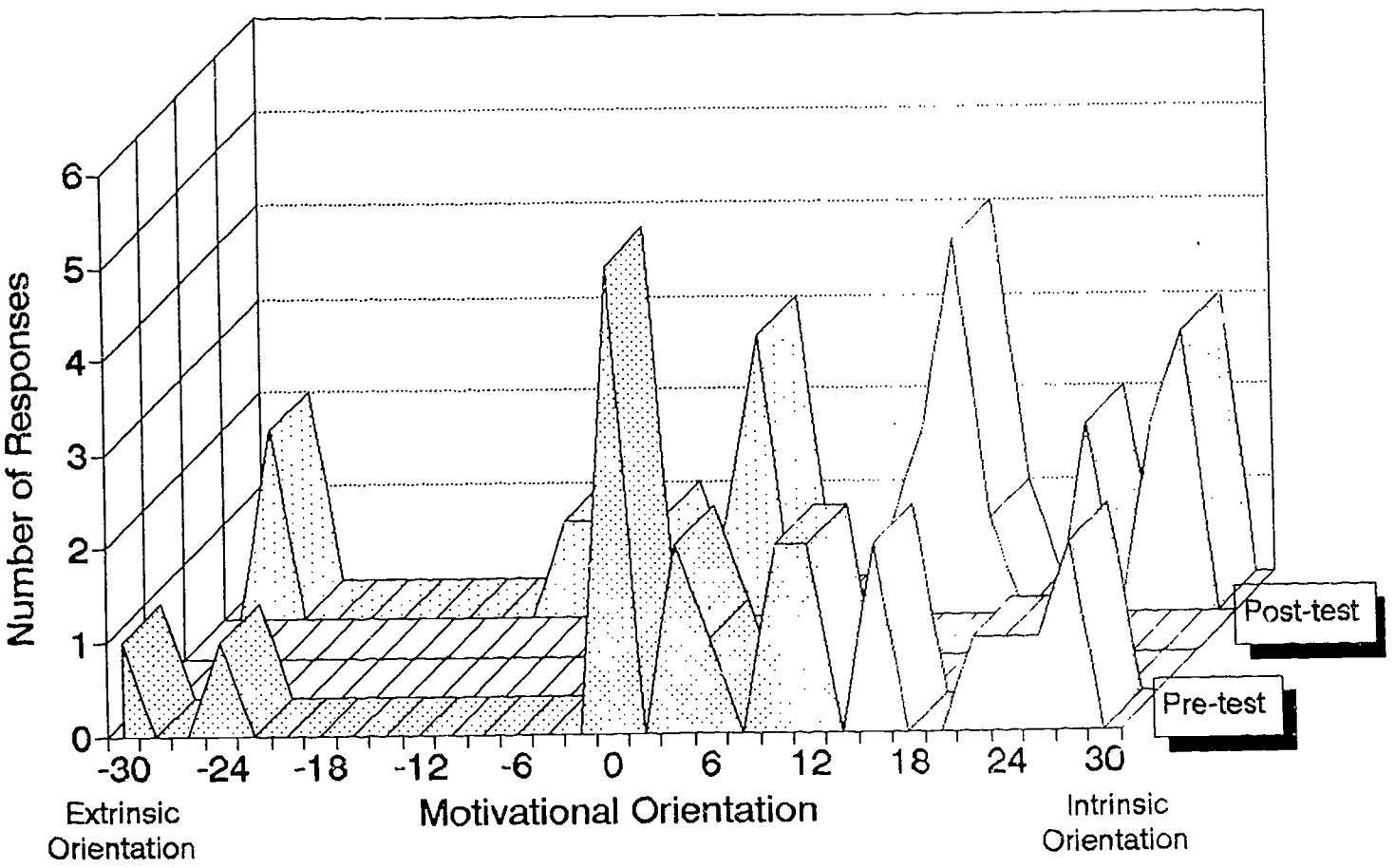


Figure 12. Exogenous Group
Judgment: Independent/Teacher-Dependent

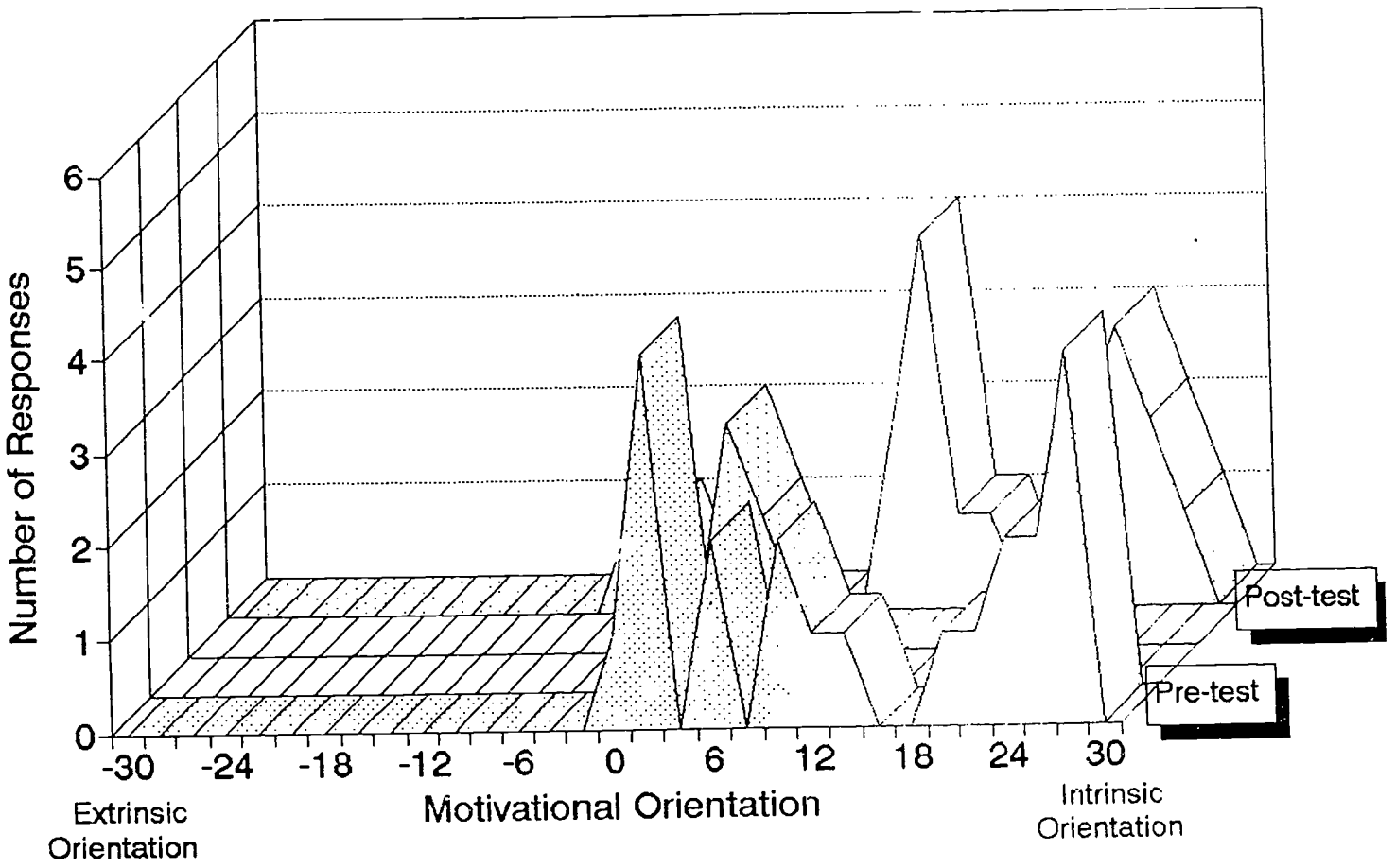


Figure 13. Exogenous Group
Success: Internal v. External Criteria

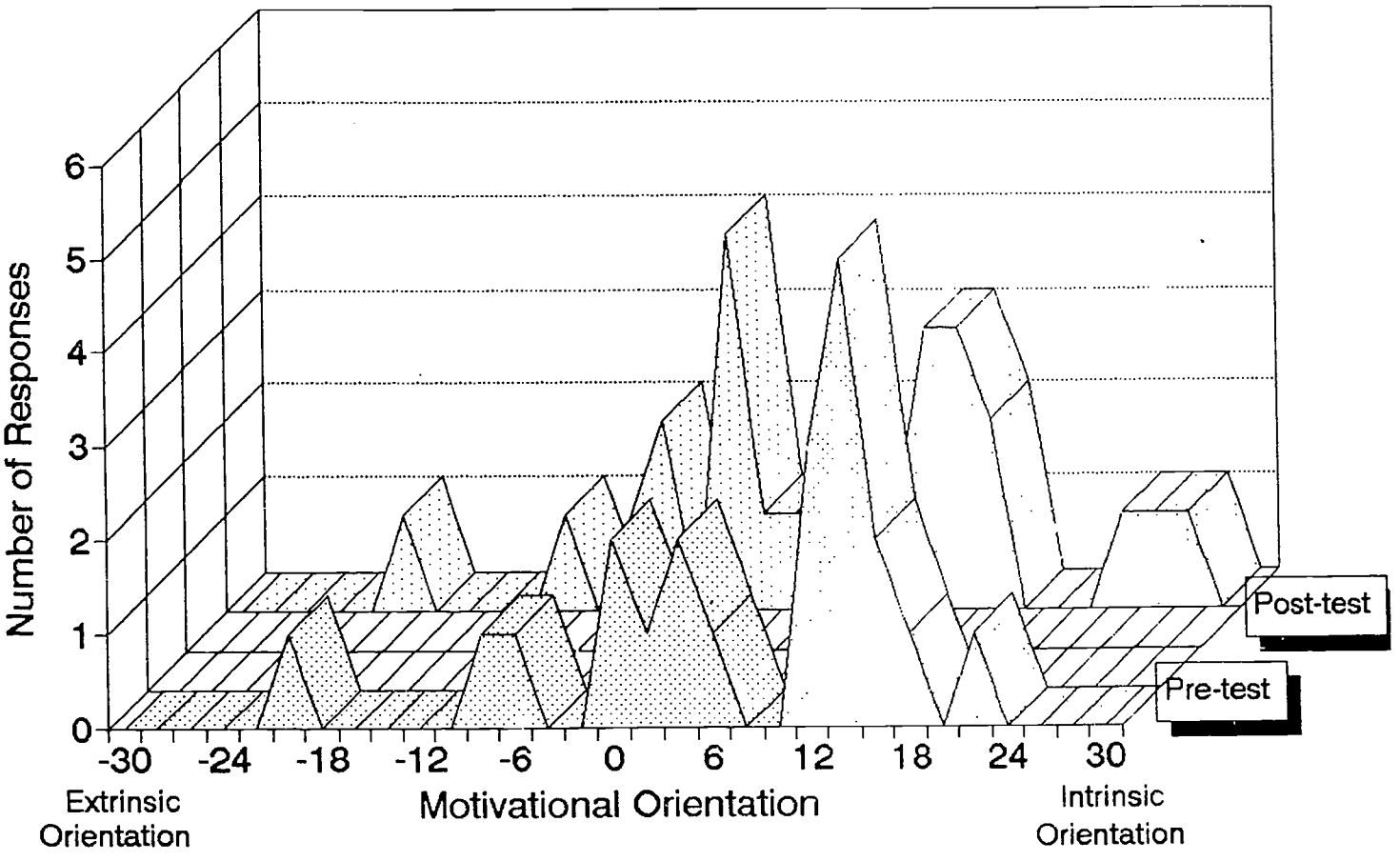
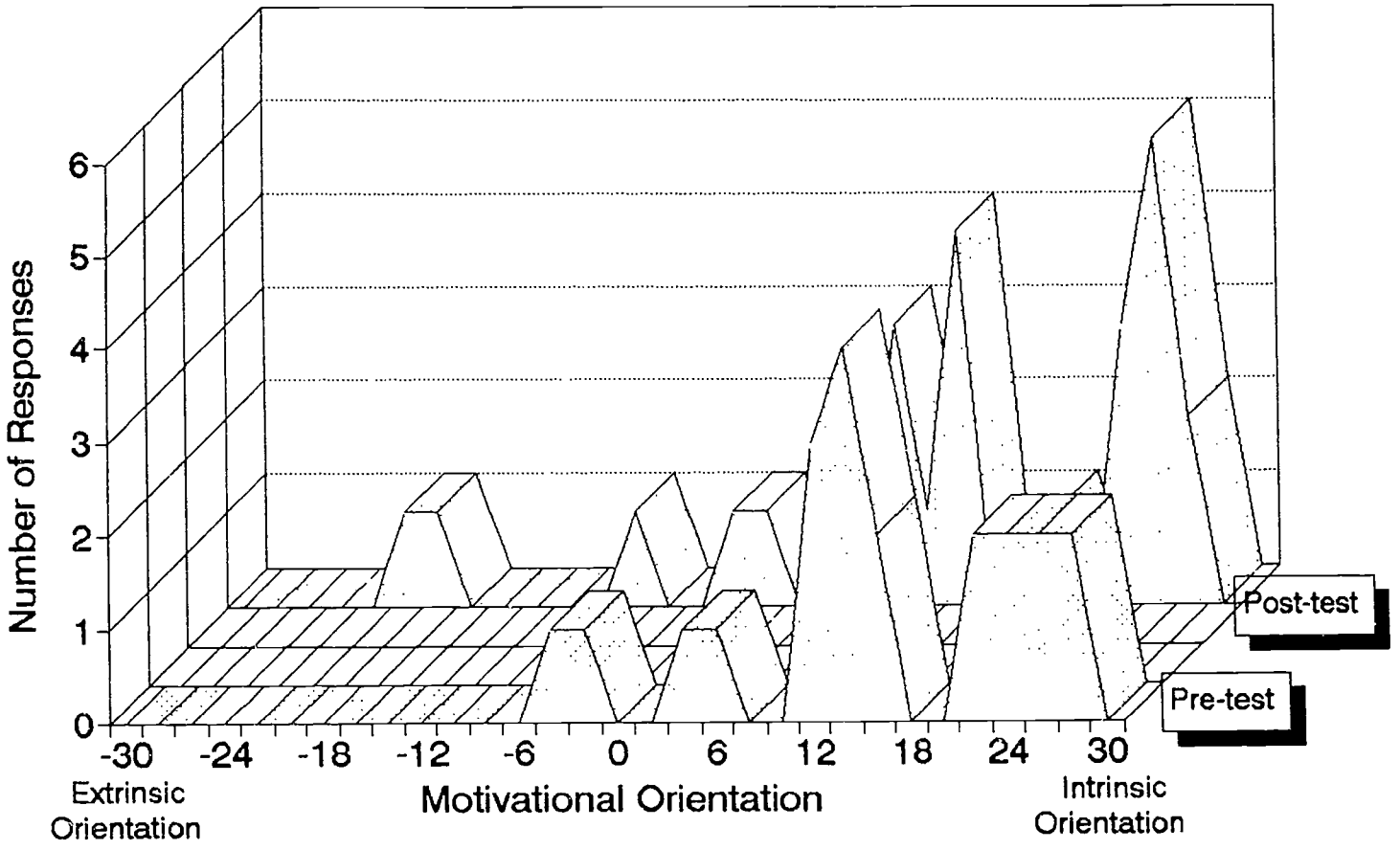


Figure 14. Exogenous Group
Perceived Competence v. Helplessness



APPENDIX A: SURVEY QUESTIONS AS CATEGORIZED

Survey: Determining Extrinsic v. Intrinsic Motivational Orientation

Category: Challenge v. Easy Work

1. ___	Some students like to go on to new work that is at a more difficult level	BUT	Some students would rather stick to the assignments that are pretty easy to do.	___
2. ___	Some students think it is fun to solve difficult problems	BUT	Some students like to solve problems they already know how to solve.	___
3. ___	Some students like to take classes that are hard	BUT	Some students prefer to take classes they know they will do well in.	___
4. ___	Some students like to learn as much as they can, even by reading and studying materials that are hard	BUT	Some students like to learn what they can from materials that are easy to read and understand.	___

Category: Curiosity v. Pleasing Teacher/Getting Grades

5. ___	Some students read extra books at home because they are interested in the subject of the book	BUT	Some kids read only the books the teacher tells them to read.	___
6. ___	Some students do extra projects because they learn about things that interest them	BUT	Some students do extra projects so they can get better grades or some reward.	___

7. ___	Some students try on their own to find out things they want to know	BUT	Some students wait to see if their questions are answered in class.	___
8. ___	Some students like to read and study extra materials they are interested in	BUT	Some students read and study mostly the materials they think will be on the test.	___

Category: Independent Mastery v. Dependence on Teacher

9. ___	When students get stuck on a problem, some keep trying to figure out their mistakes on their own	BUT	Some students wait to ask the teacher for help.	___
10. ___	Some students figure out their mistakes on their own	BUT	Some students ask the teacher to explain their mistakes to them.	___
11. ___	Some students finish their schoolwork independently	BUT	Some students get the teacher to look at it first to make sure they are doing it right.	___
12. ___	Some students like to figure things out themselves	BUT	Some students ask a teacher in order to figure things out.	___

Category: Independent Judgment v. Reliance on Teacher's Judgment

13. ___	Some students think they should have a say in what work they do	BUT	Some students think the teacher should decide what work they do.	___

14. ___	Some students prefer their own ideas or answers	BUT	Some students think that the teacher's ideas or answers are right.	___
15. ___	Some students think that their own ideas are important	BUT	Some students think that the teacher's ideas or opinions are more important.	___
16. ___	Some students learn about things that interest them	BUT	Some students learn about things the teacher thinks are important.	___

Category: Internal Criteria v. External Criteria

17. ___	Some students know whether or not they are doing well in school without grades	BUT	Some students need to have grades to know how well they are doing in school.	___
18. ___	Some students know whether or not they have made mistakes without the teacher telling them	BUT	Some students need the teacher to tell them when they have made mistakes.	___
19. ___	Some students know how well they have done on a project before the teacher tells them	BUT	Some students aren't sure how well they have done until the teacher tells them.	___
20. ___	Some students know how much they have learned when they turn their work in	BUT	Some students aren't sure how much they have learned until they get their work back from the teacher.	___

Category: Self-Confidence v. Helplessness

21. ___	Some students think they can learn anything they want to	BUT	Some students think they can learn only the things that aren't too hard to learn.	___
22. ___	When students get back a grade that is lower than they like, some will work harder next time to show that they can do better	BUT	Some students will think that they can't get a better grade and will do about the same amount of work next time.	___
23. ___	When students try to do something new and can't do it the first few times they try, some keep trying several more times	BUT	Some students give up because they don't think they can do it.	___
24. ___	When students get a good grade, some think it is because they worked hard	BUT	Some think it is because the teacher liked what they did.	___

APPENDIX B: SURVEY AS GIVEN TO STUDENTS

Directions: Below are a list of 25 statements for you to respond to. Each statement has two parts, one on the left and one on the right. Read both parts of each statement. Decide which part is most like you. Then, using the scale below, decide how much that part of the statement describes you. Write the appropriate letter in the blank next to the part you chose. You should write a letter next to only one part of each statement. The other side should remain blank.

a: Rarely true for me
b: Somewhat true for me
c: Very true for me

Example:

Some people like chocolate ice cream	BUT	Some people like strawberry ice cream.	___

___

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1. ___ Some students need to have grades to know how well they are doing in school	BUT	Some students know whether or not they are doing well in school without grades.	___
2. ___ Some students like to go on to new work that is at a more difficult level	BUT	Some students would rather stick to the assignments that are pretty easy to do.	___
3. ___ Some students think the teacher should decide what work they do	BUT	Some students think they should have a say in what work they do.	___

4. ___	When students get stuck on a problem, some keep trying to figure out their mistakes on their own	BUT	Some students wait to ask the teacher for help.	___
5. ___	Some students think they can learn only the things that aren't too hard to learn	BUT	Some students think they can learn anything they want to.	___
6. ___	Some students prefer their own ideas or answers	BUT	Some students think that the teacher's ideas or answers are right.	___
7. ___	Some students figure out their mistakes on their own	BUT	Some students ask the teacher to explain their mistakes to them.	___
8. ___	Some kids read only the books the teacher tells them to read	BUT	Some students read extra books at home because they are interested in the subject of the book.	___
9. ___	Some students think it is fun to solve difficult problems	BUT	Some students like to solve problems they already know how to solve.	___
10. ___	Some students finish their schoolwork independently	BUT	Some students get the teacher to look at it first to make sure they are doing it right.	___

11. ___	Some students do extra projects so they can get better grades or some reward	BUT	Some students do extra projects because they learn about things that interest them.	___
12. ___	Some students need the teacher to tell them when they have made mistakes	BUT	Some students know whether or not they have made mistakes without the teacher telling them.	___
13. ___	When students get back a grade that is lower than they like, some will work harder next time to show that they can do better	BUT	Some students will think that they can't get a better grade and will do about the same amount of work next time.	___
14. ___	Some students think that their own ideas are important	BUT	Some students think that the teacher's ideas or opinions are more important.	___
15. ___	When students try to do something new and can't do it the first few times they try, some students give up because they don't think they can do it	BUT	Some keep trying several more times.	___
16. ___	Some students know how well they have done on a project before the teacher tells them	BUT	Some students aren't sure how well they have done until the teacher tells them.	___

17. ___	Some students wait to see if their questions are answered in class	BUT	Some students try on their own to find out things they want to know.	___
18. ___	Some students like to take classes that are hard	BUT	Some students prefer to take classes they know they will do well in.	___
19. ___	Some students ask a teacher in order to figure things out	BUT	Some students like to figure things out themselves.	___
20. ___	Some students like to read and study extra materials they are interested in	BUT	Some students read and study mostly the materials they think will be on the test.	___
21. ___	Some students know how much they have learned when they turn their work in	BUT	Some students aren't sure how much they have learned until they get their work back from the teacher.	___
22. ___	When students get a good grade, some think it is because the teacher liked what they did	BUT	Some think it is because they worked hard.	___
23. ___	Some students like to learn as much as they can, even by reading and studying materials that are hard	BUT	Some students like to learn what they can from materials that are easy to read and understand.	___
24. ___	Some students learn about things that interest them	BUT	Some students learn about things the teacher thinks are important.	___

APPENDIX C: CONTRACT AND QUESTIONS GIVEN TO STUDENTS IN ENDOGENOUS GROUP

Contract

To show what I have learned during the unit on Rome, I plan to (circle one):

a. Take a test on Friday, March 19
b. Complete a large project (due on Friday, March 19)
c. Complete two small projects (due on Friday, March 19)

Signed: _____ Date: _____

Project Planner

Topic I have chosen for my project:

Title of my project:

What I want to do in my project (give a short description of what you plan to do):

Steps I need to take to get there:

How I will present what I have learned:
A. Written material:

B. Visual material:

So that I do not have to rush to finish most of my project on the night before it is due,

I will finish the reading/research for my project by _____.

I will complete the written part of my project by _____.

I will complete the visual part of my project by _____.

Signed: _____ Date: _____

Questions

1. Do you think your choice will challenge you to work hard?

2. Do you think this represents your best work?

3. Do you think this represents your best thinking?

4. What grade do you plan to get?

20. When rewards must be used,
    a. they must be desirable to the students,
    b. the teacher must explain clearly the behaviors which merit a reward, and
    c. the rewarding process must be consistent in order to maintain the integrity of the reward.

APPENDIX D: SUGGESTIONS FOR INCREASING STUDENT MOTIVATION

1. Take individual student differences into account and plan for them. Get to know each student as an individual with a unique background, abilities, and needs. Do not expect all students to learn, or be motivated, in the same ways.

2. Incorporate student choice in learning activities and social control/rule making processes when possible. Responsibility becomes the reward rather than some tangible prize. Having students find their own solutions helps to maintain personal responsibility (Canella, 1986).

3. Give real reasons for learning and for limits in classroom. Do not punish with consequences, but let the consequence be a realistic outcome which follows from violating the limit (Deci, 1986).

4. Avoid power struggles with students: acknowledge the legitimacy of students' feelings. Let them know it is perfectly acceptable not to *want* to do something, but actual misaction is not acceptable. When possible, allow time for student preferences (Deci, 1986).

5. Provide opportunities for students to develop self-esteem, self-confidence, and self-determination. Help students set reasonable goals and methods for self-evaluation for authentic and increasing success.

6. Recognize student performance based on mastery objectives, rather than comparison with other students.

7. Use constructive feedback, and deemphasize the controlling nature of grades by making them more informational (Deci and Ryan, 1985).

8. Provide students opportunities to pursue interests without formal evaluation, in order to increase concentration and skill. The satisfaction of accomplishment becomes accomplishment's own reward. As the teacher, provide opportunities for investment in

student interests. Given this, students may be more likely to invest in what sometimes appear to them to be the teacher's interests (Corno, 1992).

9. Use stimulating learning materials, and when possible, subject centers to allow for student choice (Deci and Ryan, 1985).

10. Introduce a gamelike quality to lessons and use humor when appropriate.

11. Make lessons and their introductions personally relevant for students.

12. Take real interest in student opinions and interests. Let them know that they really matter!

13. Show enthusiasm for lesson tasks and student learning.

14. Express high, positive expectations for student completion of work.

15. Promote goal accomplishment strategies, like planning and maintaining a study schedule or a schedule of small steps toward a complex goal, by modeling, guiding, using clear standards, chances to practice, and feedback on strategy use (Corno, 1992).

16. Teach students to use self-affirmations ("I know I can do this well").

17. Use visual imagery techniques: "Imagine yourself doing this well and how good it feels." Also visualize the steps toward a goal (Corno, 1992).

18. Use peers as learning partners to provide non-evaluative feedback and frequent constructive peer interaction around student work (Corno, 1992).

19. Use challenge statements. Tell students that they will have to think hard, or that you want to learn something new from them.