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ABSTRACT

Part of a collection of papers commissioned by Foundations (a project designed to determine the career development needs of deaf postsecondary students), the paper reviews research on student motivation. The first section addresses research on normally hearing students in classrooms with different motivational orientations. Advantages and disadvantages of classrooms with autonomous, competitive, cooperative, and intrinsic motivational orientations are identified. Problems facing hearing impaired students in each of the classroom types are noted. Low self-esteem, less developed senses of personal responsibility, and fear of rejection by peers in competitive situations are cited as potential reasons for the difficulties of hearing impaired students under the different orientations. The need for developing techniques to help students establish positive but realistic expectations of themselves in autonomy-oriented settings is suggested. Practical approaches to helping hearing impaired students feel more comfortable in competition-oriented classrooms are discussed, such as establishing a minimum grade for the course. The lack of data on hearing impaired students in cooperation-oriented classrooms is also noted. (CL)

Research on Motivation in Educational Settings: Implications for Hearing-Impaired Students

Michael Stinson

Research on Motivation in Educational Settings: Implications for Hearing-Impaired Students

A foremost concern in education is the creation of learning environments that are optimally motivating. Encouraging the development of particular motivational tendencies in students is itself an important educational goal. Gardner (1965) has stressed the importance to society of having individuals who are committed to achieving excellence. It is only this way that individuals and society can achieve their full potential. Another goal is the promotion of a humanistic orientation; i.e. an orientation in which the student is friendly, able to support others, empathic and tolerant of individual differences (Aronson, Blaney, Stephan, Blaney, Stephan, Sikes and Snapp, 1978). In addition, motivation is crucial for learning. A poorly motivated student will learn little, even if ability if high (Walberg and Ugoroglu, in press). Furthermore, at the post-secondary level where education is not compulsory, lack of motivation is often important underlying reason for withdrawal (White, Note 1).

Research on the importance of motivation to education has been restricted to a few populations, such as non-handicapped students from middle class backgrounds (See reviews of this work by Ball, 1977; Johnson and Johnson, 1974; Maehr, 1976; Slavin, 1977; Weiner, 1979.) In contrast, other populations of students such as those with physical disabilities have received considerably less research attention. For example, a recent review of research on deafness by by Meadow (1975) does not include a single study on the relation between motivation and educational achievement. The present paper is concerned with

the motivation of hearing-impaired students, particularly those at the secondary and post-secondary levels. Research in this area might suggest instructional approaches that can increase the motivation of students, and consequently help them educationally.

The type of motivation that is most strongly elicited in class will depend upon which one is rewarded and encouraged (Slavin, 1977; Veroff, 1969). If the teacher emphasizes the comparison between the student's own performance and that of other children, he may be encouraging motivation to be competitive If the teacher emphasizes to the students how well they are performing relativ to their previous achievement, he may be encouraging motivation to be autonomo Finally, if the teacher emphasizes "team work" and the sharing of rewards, he may be encouraging motivation to be cooperative. Each of these orientations has its benefits and drawbacks, as subsequent discussion will show. Furthermore, it seems that each orientation deserves a place in the educational program.

The reader should note that each orientation permits a variety of techniques to motivate students. For example, two classrooms with an autonomous motivational orientation may have quite different effects. In one class the material is intrinsically interesting and the student is responsible for monitoring his progress. In this class one would expect a high level of intrinsic motivation among students. In another class the material is dull and the teacher gives a grade for each lesson. In this class one would expect a lower level of intrinsic motivation. (Intrinsic motivation will be defined later.)

Individual differences are also important. A student brings with him to the classroom certain personality characteristics that will influence his interpretation of a particular motivational stimulus. The manifest response itself, however, is situation specific. Motivation is not viewed as a general personality characteristic that is highly predictive of behavior in a wide variety of situations (cf Mischel, 1973).

Figure 1 (page 5) identifies dimensions that seem important in understanding student motivation. Subsequent discussion will be concerned with these dimensions, with the effects of autonomous-, competition- and cooperation-oriented classrooms being emphasized. The first half of the paper reviews research on normally hearing students that seems to have implications for understanding the motivation of hearing-impaired students.

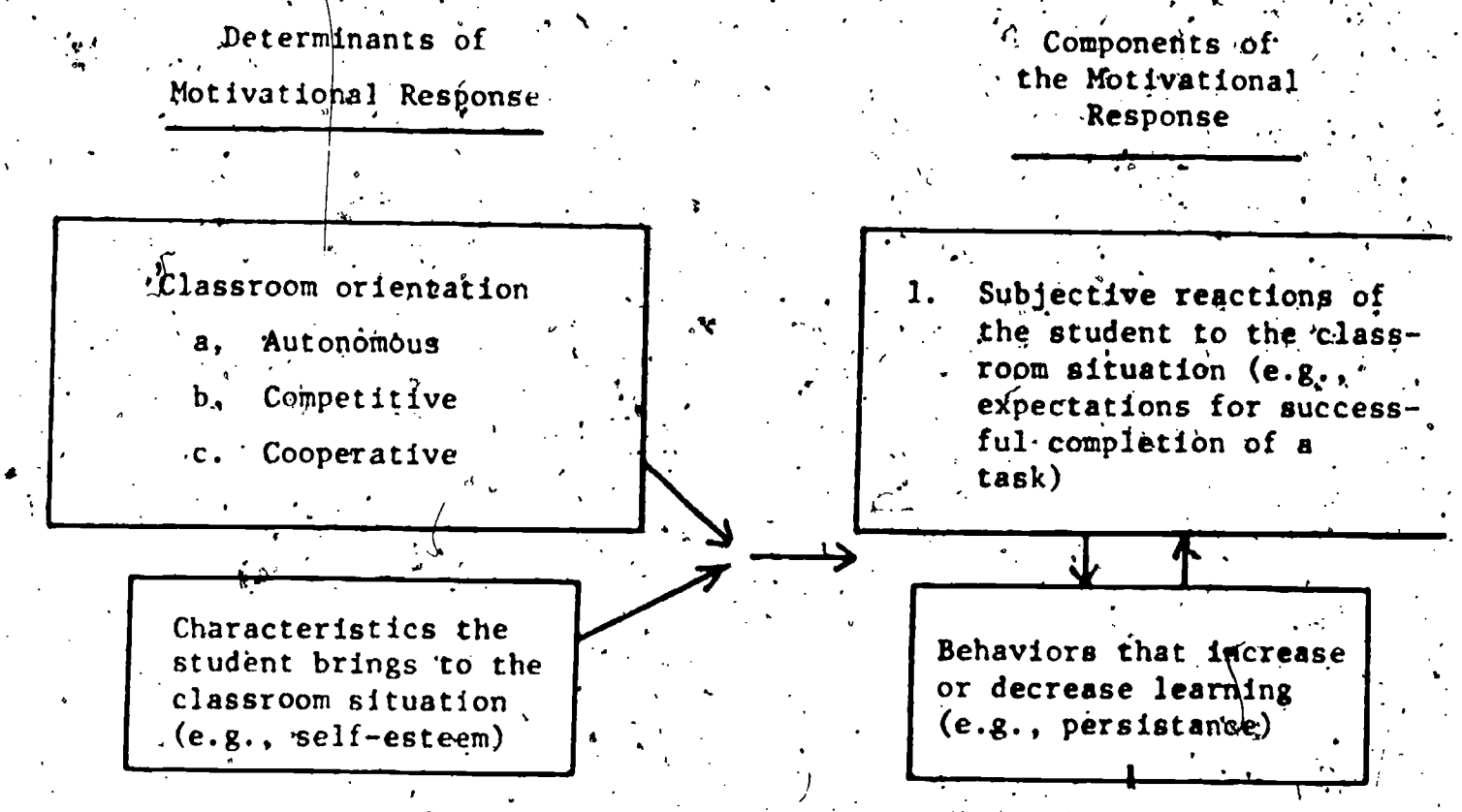
Research on Normally Hearing Students in Classrooms With Different Motivational Orientations

Autonomy-oriented Classrooms

Classrooms in which the criteria for achievement and reward are not related to other students' performance seem to encourage an autonomous orientation to achievement. Individualized instruction is an example of such a situation (Slavin, 1977).

One advantage of the classroom that encourages an orientation to one's own individual efforts rather than attending to competition is that it may be a particularly healthy way to engage in learning (Covington an Beery, 1978). An emphasis is placed upon students taking charge of certain aspects of their own learning. Students take on more responsibility for their goals, performance standards, level of aspiration and the pace at which they will

Figure 1. An Overview of Dimensions Pertaining to Motivation in the Classroom



Note. Arrows indicate hypothesized direction of causality.

learn. Covington and Beery (1976) suggest that in setting goals for themselves, students need appropriate standards of achievement for evaluating their performance. One criteria that is often appropriate is that of exceeding one's own previous performance.

In order for such a criteria of performance to be an effective means for motivation, the student needs to have the ability to establish realistic goals (Covington and Beery, 1976). When the student works toward a realistic goal, he takes on personal responsibility for success. "If the student falls short of his goal, blame more naturally goes to insufficient effort since the task was manageable. By the same token, success is seen as the outcome of skillful effort (p. 109)." Research indicates that if students are encouraged to engage in such goal-setting behavior, academic performance can improve. In a mathematics class for fifth grade children using this approach, mathematics achievement increased three grade levels (Alschuler, 1969).

In addition, Covington and Beery (1976) suggest that in order for individual goal setting to serve as a primary motivational force, students need to be able to accept their limits and to be capable of rewarding themselves. Students need to realize that at any point in learning to do a complex task well, there are limits in their ability to perform. "Students must be helped to accept their limitations without devaluing themselves or their ability to learn (p. 94)". At the same time, students must be willing to accept their success when them achieve or exceed the goals they set for themselves. The pursuit of achievement depends to a significant extent on a capacity for positive self-reinforcement.

The manner in which students assume responsibility for certain aspec of their own learning has recently received considerable attention (Weine 1972; 1979). For example some motivational research has focused on the p ceived causes of academic success and failure (Fyans and Maehr, 1979; Dwe Davidson, Nelson & Enna, 1978; Simon and Feather, 1973). Simon and Feath (1973) suggest that students perceive "amount of preparation" as an impor determinant of success on college exams. When the student engages in set his own goals, the student is more likely to attribute responsibility for his learning outcomes to himself as opposed to task difficulty or luck.

Students' expectations for themselves seem to be important motivatio determinants of academic performance. Grades students expect to obtain ar the minimum grade that students will be satisfied within a particular cour are significant predictors of actual grades in that course (Battle, 1965a; Uguroglu and Walberg, 1978). A possible reason that expectations predict grades is that students with higher expectations will persist at academic tasks for longer periods of time. Battle (1965b) found that junior-high school students who expect to do well in mathematics and English generally persist longer at these tasks than those who do not expect to do well.

The autonomy-oriented classroom and intrinsic motivation. Classrooms encouraging an autonomous orientation seem to create a learning environment that enhances intrinsic motivation. Deci and Ryan (1980) define intrinsic motivation as a need for competence and self--determination. Intrinsically motivated behaviors are operationally defined as those that are performed in the absence of any apparent external contingency (Deci and Ryan, 1980). When the task is intrinsically motivating, the reward is assumed to be impl

in the task itself. It seems important to include activities that are intrinsically motivating in the educational program. Experience with intrinsically motivating activities may enhance one's ability to learn independently. When the student is sensitive to the inherently interesting properties of an activity, this motivation may provide the impetus for learning independently. Whether or not a task will be intrinsically interesting depends in part upon the individual's perceptions of that task, as well as certain inherent properties of the task itself. The reader should note that, of course, there are many appropriate classroom activities that have little intrinsic interest (Bates, 1979). For these tasks the notion of intrinsic motivation has little applicability (Deci and Ryan, 1980).

When the classroom fosters (a) feelings of competence and (b) a sense of self-control, intrinsic motivation is enhanced. Deci, Nezleck and Sheinman (Note 2) hypothesized that the extent to which teachers believe in dealing with their students in a way that encourages autonomy influences the intrinsic motivation of their students. Teachers who encourage autonomy would be expected to have students with higher intrinsic motivation and perceived competence than teachers who are more controlling. Deci et. al. (Note 2) conducted a study of 610 4th-6th grade children in 35 classrooms to compare students with autonomy- and control-oriented teachers. They found that children with autonomy-oriented teachers were more intrinsically motivated; furthermore, children with autonomy-oriented teachers perceived them as providing more encouragement of personal responsibility and internal control. While this study dealt with elementary school children, there is considerable evidence demonstrating that it is possible to alter the intrinsic motivation of college students (Deci and Ryan, 1980).

Techniques for enhancing motivation in the autonomy-oriented classroom

As noted, goals set by students themselves are motivating. Goals explicitly stated by the instructor also influence students' motivation. An instructor can set nonspecific or specific goals for students. An example of a nonspecific goal is the instructor's statement "Do your best". Specific goals specify a certain level of performance for the student on a particular task. One way of providing a specific goal is to set a performance goal that is higher than the student's own previous performance. For example, the student is asked to do a set of arithmetic problems similar to those in a previous set, but to get more of the problems correct. Rosswork (1977) conducted a study with 6th grade children and found that specific goals lead to higher performance than non-specific goals on a vocabulary-learning task. Of course it is not clear whether these findings are applicable to college students.

Thus, in setting specific goals the teacher explicity identifies what it is the students should learn and establishes the level of proficiency they must reach. Furthermore, teaching is geared toward these objectives (Covington and Beery, 1976). In addition, absolute standards tend to foster a positive interpretation of failure. If there is a well-defined standard of performance, failure to achieve the standard tends to motivate the students to try harder. "In contrast, when the teacher's evaluative comments focus only on the performance itself without reference to external standards, failure tends to lower motivation (Covington and Beery, 1976, p. 104)."

"Contract grading" is another way that instructors can specify goals for their students. In one form of contract grading, the requirements for attaining each grade level are clearly specified and students are asked to

sign a contract indicating the grade they are trying for. A study of college business students found that those in a class with contract grading spent almost twice as much time per week in class-related activities than those in a traditional class. Furthermore, the students perceived themselves as having greater control over the grade (Homme 1970; Polcynski & Shirland, 1977) they would receive in the class with contract grading. The two findings may be related. Under contract grading, students may feel that more effort is required to achieve a high grade, but they are willing to exert themselves because they have greater personal control over the likelihood they will attain their goal (i.e. the designated grade.).

A training program developed by DeCharms (1976) instructs students in using goal-setting processes. The emphasis of the program is to teach students to perceive goals as challenges rather than as threats. Students learn to set realistic goals based on their own probability of success. They also receive training in planning their work and in accepting personal responsibility for their actions. As a result of the training, the performance standards of the students are brought into line with their ability to attain them. DeCharms' research on the effects of the training found that inner-city children who received training: (a) had a greater sense of control of their own achievement; and (b) had a higher level of academic achievement. It would be interesting to see whether the training would also be effective with hearing-impaired college students.

Competition-oriented Classrooms

In the classroom with a competitive orientation, one student's receipt of a reward deminishes the probability that another will receive the same

reward. "Grading on the curve" is an example of a competitive reward structure. If one student works especially hard to make an "A" and the number of A's is fixed, then that student's performance reduces the probability that other students will also receive A's (Slavin, 1977).

Grading on the curve provides social-comparison information. Social-comparison information can be motivating because it informs students how well they are doing or how well they could be doing (Veroff, 1969). If, after an exam, some students receive information that their test scores are higher than those of their peers, they may interpret this information as a reward that is valued in American society (Snyder, 1972). If students learn that many other students performed better than themselves, they may translate this information into a goal for future performance (Veroff, 1969). Thus, when social-comparison information is provided in the classroom, it constitutes a means for evaluating effort and for determining one's level of achievement.

Harackiewicz (1979) compared the effect of social-comparison information with that of information pertaining to an experimenter provided goal. In the former case, feedback was given stating that the student did better than the average student; in the latter case, the feedback given was that the student had attained the experimenter provided goal. Students receiving the social-comparison feedback showed higher levels of perceived competence. One interpretation of this result is that the social-comparison condition provided more information indicating that the student was competent. In a related study, Ames and Felker (1979) found that children were more satisfied with their performance when they learned they had performed successfully

in a situation where the reward was based on competition than when they had performed successfully in a situation where the reward was based upon cooperation or individual effort.

It would seem that in order for teachers to effectively manage classrooms with a competitive orientation, they would need to be aware of the motivational processes in the situation. In this situation, the relationship between one's self evaluation of abilities and actual academic performance is influenced by the student's perceived standing in relation to peers; i.e. the students' perception of their own competence is based upon the comparison of abilities with peers (Rogers, Smith, and Coleman, 1978). Furthermore, when students perceive their peers as expecting themselves to be motivated, they are more likely to expend effort in the classroom than when they do not perceive their peers as expecting themselves to show high motivation (Mitchell and Nebeker, 1973).

There is considerable variation among students in their reactions to a competitively-oriented [illegible] (Crandall, 1969; Halperin and Abrams, 1978). For example, Halperin and Abrams suggest that women students who enjoy challenging situations and who tend to assume responsibility for their own performance have higher expectations concerning their own performance in a course than do women students who do not enjoy challenges and who tend to avoid responsibility.

An important consideration for the teacher is whether a particular motivational approach facilitates learning. Social-comparison information seems most facilitative when the task is simple. McClintock and Van Avermaet (1975)

compared the effect of social-comparison feedback comparison of others performance with one's own) with that of self-comparison feedback (comparison of current performance with one's own previous performance) for two tasks: (a) crossing-out numbers, and (b) paired associate learning. For the simple task, performance was higher under the social feedback condition than under the self feedback condition. On a more complex, paired-associate learning task, however, there was no difference in performance under social and self comparison feedback conditions. In this situation and in similar circumstanc in other studies (e.g. Johnson, Skon and Johnson, 1980), one finds that a competitive situation does not necessarily result in optimal learning. A competitive classroom can generate too much concern about winning and too much anxiety about losing. Thus, the competitive situation seems to have an effect similar to that of high-magnitude reinforcers. Masters and Mokros (1973) have pointed out that high-magnitude incentives sometimes retard performance on learning tasks because students become preoccupied with the reinforcer and distracted from the task. If a task is complex, and if social-comparison feedback constitutes a high-magniture incentive, students may perform poorly because they are distracted from learning the cues and actions that are necessary for the correct response.

Negative consequences of classrooms with a competitive orientation. In a competitive situation it is possible for the student to be overly concerned about his performance in relation to the group norms. Veroff (1969) suggests that excessive concern occurs when the social-comparison dominates the student basis for esteem. Such a student does not treat social-comparison

information objectively and does not use the information to discover ways to improve his performance.

Another unhealthy response to social comparison occurs when the competitive situation generates considerable anxiety in the student. Such students are concerned about doing poorly relative to peers; furthermore, they believe that one possible consequence of doing poorly is that they will receive disapproval either from peers or from the instructor (Veroff, 1969).

Covington and Omelich (1979) suggest that many students adopt certain strategies so that they will not suffer too much humiliation in situations where they perceive themselves as failing. Students are most likely to adopt such strategies when there is grading on a curve. Grades are threatening because they signal success or failure, and the possibility of failure is always eminent. In the competitive grading systems the rewards are fixed so that for one student to feel successful, others must experience failure. Given this situation, the optimal strategy is to put a limited amount of effort into an academic task; however, do not try too hard, for it is important to have excuses. Students are afraid that if they try they will fail. "It is difficult to imagine a strategy better calculated to sabotage the pursuit of personal excellence (p. 178)." Covington and Omelich provided evidence to support their contentions in a study of students' responses to a hypothetical achievement situation involving failure on a college exam. Student's were asked to imagine themselves as having failed the test. Students viewed themselves as most incapable and expressed the greatest amount of dissappointment in themselves when the failure followed extensive preparation for the exam. However, if the students had an excuse for their failure they were

not as dissappointed in themselves. In a related study, Snyder and Katahn (1970) found that students expressed dissappointment in themselves following feedback that they had done poorly on an exam.

Another drawback of the competition-oriented classroom is that it is the situation most likely to discourage intrinsic motivation. Deci, Betley, Kahle, Abrams and Porac (in press) have reported results in support of the hypothesis that the focus on winning induced by the competitive situation reduces intrinsic motivation.

Dealing with the problems generated by a competition-oriented classroom. It has been pointed out that a competition-oriented classroom sometimes interferes with learning. It is also clear, however, that students need practice so that they can learn to deal with competitive situations where their performance is important to them and where it will be evaluated. The Scholastic Aptitude Test is one example of such a situation. Another example is applying for a job when there is more then one applicant. In order to deal effectively in a competitive situation, students need to view the competitive situation objectively. They need to treat the situation as one that will provide information rather than as an anxiety provoking event. Students can be more objective if they realize that they often have a choice between engaging in a competitive activity or a non-competitive one. Furthermore, they need to realize that one's achievement in competition is only a part of one's self, and the evaluation of one's self is also influenced by other considerations.

Teachers can take steps to reduce the most debilating effects of competition. Anxiety over the possibility of receiving a low or failing grade can be reduced by providing students some degree of control over the grades

they will receive and a guarantee against receiving a failing grade. One way to institute this guarantee is for the teacher to establish a minimum grade, say a C, which is assured for meeting the basic requirements (Beery and Covington, 1976; Harrison, 1969). This procedure might mean establishing a minimal level of mastery acceptable to the teacher.

Another technique a teacher can use for presenting social-comparison information is to provide students a relative low level of performance against which to compare themselves. Snyder (1972) compared the performance of students in an introductory psychology course when the standard of comparison for evaluating performance was either high, medium or low. Student's receiving the low comparison level (in which 90% of the subjects exceeded the standard) showed the highest performance. Snyder (1972) suggests that the students who received positive reinforcement regarding their performance may have been more highly motivated to continue to learn the material. On the other hand, when the the standard of comparison was high, students may have become discouraged and not continued to pay attention and study.

An instructor can also take deliberate steps to reduce the level of anxiety that students experience in a competition-oriented classroom. The procedures involve retraining students so that the student attends more fully to the task at hand rather than worrying about failure (Beery and Covington, 197).

Cooperation-oriented Classrooms

In the classroom with a cooperative orientation, an increase in the performance of any student in the group increases the probability that the group will receive a reward which will be shared by all members. An example

of such a classroom situation is one in which there is a group project and the teacher assigns the same grade to all members of the group participating in the project.

A major benefit of the cooperative situation is that it facilitates learning on problem-solving tasks. On the whole, studies comparing performance on such tasks have reported higher performance for the cooperative setting than for those oriented toward autonomy or competition (Johnson, Skon and Johnson, 1980; Johnson and Johnson, 1975). Johnson, Skon and Johnson (1980) suggest three factors that can account for superior performance in the cooperative setting: (a) Students develop superior problem-solving strategies in group work; (b) the medium and low ability students benefit from the interaction with the high ability students, and (c) group work fosters motivation to achieve. In a study comparing each of these factors in autonomy-, competition-, and cooperation-oriented classrooms, Johnson, Skon and Johnson had students perform three problem-solving tasks. The cooperative situation consisted of groups of students who were instructed to work together as a group to share materials and ideas, to help each other, and to ensure that each member was involved. In these groups the members were responsible for agreeing on the answers and for learning the material. The quality of the problem-solving strategies students u ed was observed for each type of classroom. They found that students used s perior strategies in the cooperative condition. A key factor was the discussion among students. Students at all ability levels seemed to gain insights from the cooperative discussion. In addition, cooperative interaction seemed to generate perceptions of more support and encouragement for achievement than did the other two conditions.

Not all research on cooperative settings, however, indicates that this setting yields more positive motivational effects than autonomy- or competition-oriented settings. Ames and Felker (1978) suggest that when there is group failure, evaluations of individuals are harsher than in autonomy- or competition-oriented settings. Furthermore, when students were successful on a puzzle task, they were more satisfied with their performance in competitive and autonomous conditions than in the cooperative one. Most of the studies dealing with the effects of cooperation in the classroom have used children as subjects (e.g. Johnson, Skon and Johnson, 1980; Slavin, 1978, Ames and Felker, 1978). However, the findings from these studies appear applicable to college settings. Experiments on the effects of cooperation upon college students' performance on laboratory tasks are consistent with the findings obtained with children (Laughlin, 1978).

Aronson et. al. (1978) have developed a procedure for creating a cooperative orientation in the classroom. The key ingredient in their approach is to create a learning process in which it is imperative that students treat each other as learning resources. The learning process is structured so that individual competitiveness is incompatible with success; furthermore, the process is designed so that success can occur only after cooperative behavior has occurred. The process has acquired the name "Jigsaw Classroom" since it is highly reminsicent of a jigsaw puzzle. Students form groups and each student in the group is responsible for teaching part of a lesson. Students are tested for knowledge of all the material, but only one student presents the material for a particular part. Consequently, both interdependence and active learning are required. Evaluative research on this procedure

indicates that a cooperation-oriented classroom can increase student's liking of school, self-esteen and willingness to use classmates as learning resources. Furthermore, students master classroom material as well as they do in traditional classrooms.

Slavin (1978) has also developed a procedure for creating a cooperation-oriented classroom in which student teams are used. In this procedure, students are assigned to 4 and 5 member teams consisting of students at various levels of ability. Students work together during study periods to help each other learn the material. Students, however, take tests individually. Feedback is given in two ways; as a team score, and as social-comparison information where students are compared with others of the same ability level. In a comparison of performance in this setting and in a competition-only condition, Slavin (1978) found that participation in the team treatment increases time spent on the task and leads to perceptions of increased mutual concern and peer support. The two treatments, however, did not make a difference with respect to the academic achievement of the students in an English unit on language mechanics.

The discussion of research on normally hearing students has raised a number of issues that seem to have implications for understanding the motivation of hearing-impaired students. The remainder of the paper will consider these issues and review research on the psychological characteristics of hearing-impaired students in order to make suggestions concerning the motivational determinants of hearing-impaired students.

Stinson (1974) investigated hearing-impaired boys' motivational predisposition toward autonomous achievement standards. The criteria for achievement was based upon the child's own previous performance. There was no significant difference in the tendency of the hearing-impaired and normally hearing boys (8-13 years of age) to select moderately difficult tasks when the standard was autonomous. Thus, in this particular instance, the motivational orienations of the two groups seemed similar.

Educational goals. An important assumption concerning the motivation of students is that students work toward goals, even if the goal is simply earning a good grade. If the instructor is going to motivate the students, there must be some goals that the students perceive as important. There are individual differences in the extent to which hearing-impaired students perceive the goals of a course as important. Meath-Lang (1978) compared hearing-impaired students having full-time work experience with hearing-impaired students without this experience in terms of the extent to which they valued certain instructional goals in an English course. For example, one of the items in the questionnaire was, "Language classes are very important to me". She found that students having work experience considered the goals of English instruction more valuable.

It has already been pointed out that the manner in which the teacher establishes goals for students influences their motivation. For example goals that specify a certain level of performance on a particular task can be more motivating than general goals, such as "get a good grade". It seems that it would be instructionally useful to determine to what extent hearing-impaired students are motivated when given general versus specific goals.

Another issue for research is to determine whether the goals that students set for themselves influence academic performance. When students set higher goals for themselves, do they devote more effort to the course and consequently show higher performance?

Expectations for performance. The expectations of hearing-impaired students reflect, to some extent, their actual abilities, as is the case for their normally hearing peers. A study by Rutledge (1954) suggests that tasks on which hearing-impaired students generally perform as well as normally hearing peers, their expectations for success are generally similar to those of their peers. On the other hand, on tasks on which hearing-impaired students generally do worse than their normally hearing peers, their expectations for success tend to be correspondingly lower.

Research with normally hearing students indicates that it is possible to change students' expectations for their own performance so that these expectations are more congruent with the student's present level of skill; furthermore, these changes in expectations can lead to increased motivation (DeCharms, 1976). With respect to hearing-impaired students, Mckee, Stinson and Blake (Note 3) found that it is possible for students to change self-estimates of their ability so that they more accurately reflect their actual ability. Freshmen enrolled in a communication course at the National Technical Institute for the Deaf, a post-secondary institution, rated their communication ability before and after the course. Correlational analyses indicated that the accuracy of self-ratings increased significantly from pre- to post-course measures in each of several communication modes. Self estimates of ability are not identical to expectations for performance in a course, but the two processes are related (Diggory, 1969).

Self-estimates of ability are related to academic performance. Studies with hearing-impaired high school students indicate that students' opinions about their own academic ability account for substantial variance in predictions of academic achievement (Joiner, Erickson, Crittenden and Stevenson, 1969). This conclusion concerning the importance of self-esteem for hearing-impaired students is similar to conclusions drawn for normally hearing students in studies involving the same variables (Joiner et. al., 1969; Brookover, Note 4).

There is a need for further work in this area; especially, to identify techniques that can help hearing-impaired students establish positive but realistic expectations for themselves.

Potential difficulties of hearing-impaired students in the autonomy-oriented classroom. There is evidence that hearing-impaired students generally have lower self-esteem than normally hearing students (Garrison and Tesch, 1978; Schroedell and Schiff, 1972). (See, however, the reservations about this conclusion, e.g. Garrison, Tesch and DeCaro, 1978). Level of self-esteem influences the way people interprete all kinds of situations (e.g. Zajonc and Brickman, 1979). For example, students with high self-esteem may treat failure as information useful for future study, whereas students with low self-esteem may regard failure as an anxiety provoking experience.

A study by McCrone (Note 5) suggests that hearing-impaired sudents with low self-esteem are distracted by a failure experience. In the study, the problem-solving performance of hearing-impaired high school students who were severe underachievers was disrupted by prior experience with an unsolvable problem. In contrast, the performance of students who were at a higher level

academically was not disrupted by the prior experience of failure. One interpretation of this finding is that the underachievers had lower self esteem and they experienced more anxiety following failure. Thus, their ability to perform was disrupted.

In order for students to be motivationally predisposed toward an autonomy-oriented classroom, it may be critical for them to believe that personal effort is an important determinant of the outcome of events (Veroff, 1969). If students do not believe that personal effort is important, they may not exert themselves because they do not see the relationship between their efforts and goal attainment.

In general, the published descriptions of hearing-impaired students describe them as having less of a sense of responsibility for their own actions than do normally hearing counterparts. Meadow (1976) described hearing-impaired students as dependent, and Bodner and Johns (1978) concluded that they tend to have an externally-oriented locus of control.

In spite of the apparent unwillingness of hearing-impaired students to accept personaly responsibility, those who have been successful in mainstreamed college settings seem to recognize that assuming personal responsibility for performance is essential for college success, perhaps more so than for normally hearing students. A survey of hearing-impaired students attending regular colleges included questions about reasons for success. Among the most frequent answers were (a) being self-competent, (b) taking the initiative in getting special help, and (c) having good study habits (Quigley, Jenne and Phillips, 1968). Having a sense of responsibility seems to be implicit in each of these factors.

In the mainstreamed classrooms, the provision of support services such as interpreting, notetaking and tutoring may foster dependency. It is not clear to what extent students perceive their achievement as being due to their own efforts and skills as opposed to being due to the help derived from support services. Consider student perceptions of tutoring as an example of a research question in this area. Does use of tutoring reduce the perceive importance of studying? Students may believe that in order to benefit from tutoring it is also necessary to study. On the other hand they may not study as hard when they know they can easily get help.

Classroom settings that encourage an autonomous motivational orientation would seem to be well suited for deliberate training to enhance personal responsibility. There is a need for the development of appropriate instructional procedures, as well as for research to determine the extent to which such procedures enhance one's sense of responsibility.

Competition-oriented Classrooms

Are deaf students motivated by the competitive setting? On the basis of a few studies, the answer seems to be "yes" (Stinson, 1974; Meadow 1972; Bodner & Johns 1976). These studies suggest that the motivation may be of an "unhealthy" kind: Students are sensitive to comparisons between their own performance and that of others because they are afraid that if they do not meet group standards they will be rejected by the group. Furthermore, group acceptance/rejection is an unduly important determinant of self esteem. Given this orientation, evaluation situations, especially those in group settings, provoke anxiety (Birney, Burdick and Teevan, 1969).

Stinson (1974) compared the responses of hearing-impaired and normally hearing boys in a setting with a competitive standard in which the criteria for performance was based upon the norms of a reference group. The normally hearing boys more frequently selected the challenging social comparison task than did the hearing-impaired who tended to select the easy task. The behavior of the hearing-impaired boys may reflect a motivational tendency to avoid challenging social comparison situations.

Research by Meadow (1972) suggests that hearing-impaired children engage in social comparison concerning their deafness. Hearing-impaired students in day schools perceive hearing persons as more rejecting of them and are rated by teachers as less adjusted to deafness than those in a residential school. More frequent unfavorable comparison by day school children between themselves and their hearing family and schoolmates may explain the difference.

The extent to which hearing-impaired students treat competitive situations as either (a) information providing or (b) anxiety provoking may depend upon the situation. For example, a hearing-impaired student may feel anxious when he is in a mainstreamed class that has an instructor who grades on the curve and who is a hard grader. The student may feel relaxed in a social situation having a competitive element in which all the participants are hearing-impaired.

Even if the student identifies with other hearing-impaired students, he may still use normally hearing peers as a comparison group. Research has shown that individuals not necessarily perceiving themselves as members of a particular social group will still use it for cross-group comparison (Epps, Perry, Katz, and Runyan, 1971). Thus, even if the hearing-impaired

student performs at a level which is more comparable to that of other hearing-impaired students than to that of normally hearing students, he may still use them as a comparison group. Even when people are repeatedly told they are performing below group norms, they often continue to use higher performing persons as a reference group (Dreyer, 1953).

In addition, Emerton, Hurwitz and Bishop (1979) suggest that hearing-impaired people may sometimes perceive a double message with respect to their status in the "hearing world". On one hand, the placement of hearing-impaired students in the same educational environments as normally hearing people conveys the impression that hearing-impaired students are expected to compete with normally hearing peers. On the other hand, hearing-impaired students sometimes perceive normally hearing persons as having negative attitudes toward deafness (Schroedel and Schiff, 1972). Such a stance conveys a suggestion that hearing-impaired students are not viewed as capable of competing with normally hearing students.

The extent to which students perceive themselves as capable of competing with normally hearing peers may depend upon the skill that is being compared. Conversations with students at NTID suggest that an area in which they perceive themselves as less competent is the reception of lecture information. Although interpreters are used extensively to help hearing-impaired students better follow the classroom lectures, these students may still not comprehend as much information as do normally hearing peers (Jacobs, 1977). Although it is appropriate for hearing-impaired students to be aware of difficulties in understanding lecture information, it is possible that they overestimate the comprehension skills of normally hearing students. If the perceptions

of the hearing-impaired students exaggerate their own relative difficulties in lecture comprehension, this perception may lead to expectations for a level of performance in the classroom that is lower than the level at which they are capable of performing. On the other hand, there may be other areas where they do not perceive themselves as less capable than their normally hearing peers; for example, hearing-impaired drafting students may generally perceive themselves as just as capable of successfully completing their assignments as are their normally hearing peers.

The extent to which a hearing-impaired student perceives himself as capable of competing successfully with normally hearing students may depend in part upon whether he believes the world at large provides opportunities to satisfy needs for achievement. This perspective may be viewed as one dimension of the hearing-impaired person's life space. Meyerson (1963) defines the life space as the psychological environment that is meaningful and relevant to the individual. He evaluates the hearing-impaired person's life space in terms of the extent to which a person participates in education, social activities and work with fellow hearing-impaired individuals or with normally hearing people. Hearing-impaired students are assumed to vary in the extent to which their life space is oriented to the world at large or to the deaf community, depending upon a variety of personal characteristics and background factors. In view of the above considerations, it seems important to study the social comparisons of hearing-impaired students in mainstreamed classes.

Techniques for competition-oriented classrooms. There is a need for procedures that can make students more comfortable in settings where the

criteria for achievement involve comparisons of the student with other students. The following techniques may help hearing-impaired students feel more comfortable and learn more effectively; moreover, these procedures seem particularly applicable to mainstreamed classrooms and for the preparation of students to participate in such classrooms.

1. As suggested by Covington and Beery (1976), the teacher can establish a minimum grade for the course. This could provide some assurance to the hearing-impaired students that they will not get a low or failing grade in spite of the fact they may be competing with normally hearing peers.

2. The course instructor can create a setting where the standard for evaluation is fair to the students, handicapped and nonhandicapped. It is important that the teacher evaluate student's performance on the basis of the quality of the content, not in terms of whether the presentation form is standard or nonstandard (Harris, 1978). For example, if the teacher is nonsigning, and the student uses signs and his or her speech is distorted, does the teacher downgrade the evaluation of the student's response? It seems that students will be more motivated if they believe their utterances will be treated fairly by the teacher.

3. Students are place in a mainstreamed class that contains other hearing-impaired students. Strang, Smith Rogers (1978) suggest that when a class contains both handicapped and nonhandicapped students, the handicapped students are free to compare themselves with each reference group, depending upon which one is more appropriate for the particular comparison. On the other hand, if there is no reference group of hearing-impaired peers, these students must use the reference group of normally hearing students, even when it may not be appropriate.

4. Hearing-impaired students can be made aware of strategies for successful learning in the mainstreamed classroom. For example hearing-impaired students can be informed that they can arrange meetings involving a tutor, the course instructor and the student and that such meetings are helpful in identifying material to be studied prior to exams. Opportunities can be provided where experienced students can share with inexperienced students the strategies they have found successful for coping in the mainstreamed classroom. Such information can increase the confidence of hearing-impaired students that they can compete successfully with normally hearing peers.

Cooperation-oriented Classrooms

There are no known studies dealing with the motivational effects of cooperative settings upon hearing-impaired students. As noted, research with normally hearing students suggests that the cooperative setting can have positive motivational effects, including: (a) Increased time spent in learning, (b) greater peer support, (c) increased enjoyment of learning and (d) higher self esteem. The use of cooperative techniques with hearing-impaired students needs to be evaluated. Membership in cooperation-oriented classrooms can consist of (a) only hearing-impaired students; (b) some hearing-impaired and some normally hearing students. An obvious variable for study would be the expectations of the hearing-impaired and normally hearing students for cooperating with each other in spite of the communication barriers. Perceived ability to work together may depend upon the class and the nature of the task. For example hearing-impaired and normally hearing students may have higher expectations of success when much of the communication can

be nonverbal. Cooperation may be possible, however, even when much of the communication is verbal. For example, a Rochester Institute of Technology social work instructor has reported having successful class sessions where normally hearing and hearing-impaired students are required to work in small groups.

Conclusions and Recommendations

Since virtually no research has been conducted on the motivation of hearing-impaired students, the discussion of motivational determinants of hearing-impaired students has been quite speculative. It is possible, however, on the basis of present knowledge, to make suggestions concerning the motivation of hearing-impaired students. The first suggestion is to provide students with a balanced exposure to classrooms with different motivational orientations: Autonomous, competitive and cooperative. Second, it seems desirable to foster in students a capacity to recognize classroom situations with different motivational orientations and to be able to direct their efforts accordingly.

In most educational settings, the provision of a balanced exposure to different motivational orientations implies that the competitive orientation will receive less emphasis while the autonomous and cooperative orientations will receive more emphasis (Aronson, et. al., 1978). The educational system in our society from grade school through college is largely competitive (Madsen and Shapira, 1970). The idea of providing a balanced exposure to the differen motivational orientations is not a novel one (Aronson, et. al., 1978; Garibaldi Note 6).

A balanced exposure to different motivational orientations is important because it may help the student develop strategies for adapting successfully

to various school and work settings. At school, and subsequently at work, the individual will encounter situations with different motivational orientations. In general, the most facilitative way to perform a task is to adapt one's way of responding to the predominant motivational orientation. In addition, there does not seem to be any reason why autonomous competitive and cooperative techniques cannot co-exist in the same classroom. Research suggests that each motivational orientation can be part of the classroom process without depletion of the benefits of each (Blaney, N., Stephan, C. Rosenfeld, D; Aronson, E. & Sikes, J., 1977).

Students vary in the extent to which they respond to classrooms with different motivational orientations (Veroff, 1969). Providing students practice under each motivational orientation may be one way of increasing student's sensitivity to each orientation. For example, at first, many students do not direct their efforts appropriately in a cooperative situation, but with practice, they learn to do so (Aaronson et. al., 1978). Another approach for fostering appropriate motivational responses to different situations would be through counseling. For example, if the student is very anxious in the competition-oriented classroom, the student might go through a series of exercises that provide training in attending to task relevant factors during test performance (Wine, 1973).

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