Student Perceptions in the Classroom

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Editors
STUDENT PERCEPTIONS
in the CLASSROOM
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Student perceptions are thoughts, beliefs, and feelings about persons, situations, and events. A book devoted to student perceptions underscores the importance of the topic in current educational theory and research. Such a book would have been less likely in the past when research was based largely on behavioral theories emphasizing environmental stimuli and reinforcement history as influences on behavior.

In contrast, contemporary cognitive theories of learning, motivation, and instruction assume that students are active processors of information rather than passive recipients of knowledge and that there is no automatic relation between information presented and how it is perceived by students. These theories view perceptions as factors that are influenced by personal attributes and situational cues and that affect one's own behaviors and the perceptions and actions of others in the environment. Research conducted in the past few years supports the idea that student perceptions help to explain achievement-related outcomes beyond the effects of student abilities and environmental factors (e.g., rewards, instructional materials).

As the chapters in this book make clear, there are many types of student perceptions that operate in classrooms. Self-perceptions involve perceptions of students' own abilities, self-concepts, goals, competence, effort, interests, attitudes, values, and emotions. Social perceptions refer to students' perceptions of their peers' abilities, self-
concepts, goals, and so forth, as well as to perceptions of various qualities of teachers (e.g., attitudes, competence, goals, opinions of students' abilities). Also important are students' perceptions of tasks and other classroom factors (e.g., task difficulty, effective learning strategies, environmental factors that help and hinder learning). This book grew from our desire to have leading researchers describe their theoretical positions on the role of student perceptions in education and to present supporting research. We felt that this type of book would be timely and would make a significant contribution to the literature. Although most books on learning, motivation, and instruction discuss the role of student perceptions, they typically do so briefly and not in sufficient depth for readers to develop conceptual understanding. We thought that professionals and students alike would be highly interested in a book that provided in-depth reviews of theory and research on student perceptions and discussed their role in learning, instruction, and motivation.

Our goal in producing this type of volume led to several decisions that we felt would increase the book's impact in the field. We solicited chapters from individuals actively engaged in research on student perceptions. We felt this diversity would highlight the importance and role of student perceptions in many aspects of classroom life. At the same time, we wanted an integrated series of chapters that surveyed the field rather than a loosely linked collection of chapters summarizing individuals' research programs. Accordingly, we asked authors to follow a common chapter format of presenting relevant theoretical ideas, discussing research evidence bearing on these ideas, suggesting future research directions, and describing implications for educational practice. In short, we wanted contributors not only to discuss the current status of their ideas but also to provide a forward look in terms of research and practice.

For organizational purposes we subdivided the book into four sections: Issues in the Study of Student Perceptions, Social Perceptions, Ability-Related Perceptions, and Goal Perceptions. Chapters in the Issues section do not follow the preceding format but rather discuss general issues relevant to the study of student perceptions. The placement of each of the remaining chapters in one of the other three sections identifies the chapter's major focus, although many chapters cut across sections.

This book is designed for persons interested or working in the field of education. Professionals should appreciate the book's compilation of current theory and research and their implications for educational practice. The book is appropriate as a text for graduate students in schools of education or related disciplines, as well as for advanced undergraduates interested in education. It is assumed that students
using this book possess minimal familiarity with psychological concepts and research methods. Contributors were asked to address their chapters to a general audience by defining and explaining technical concepts and by discussing research findings in nonstatistical language.

ACKNOWLEDGMENTS

There are many people we wish to acknowledge for making this book a reality. We express our sincerest gratitude to our contributors. Despite the press of busy academic schedules that befit active researchers, they worked on this task diligently, which made our jobs as editors personally and professionally satisfying. We also express our appreciation to many professional colleagues and students with whom we have had stimulating discussions over the years. In particular, we have benefited from our activities in the American Educational Research Association Motivation in Education Special Interest Group. With respect to the production of this book, we thank Hollis Heimbouch, our editor at Lawrence Erlbaum Associates, and her assistant Kathy Dolan, for their support, patience, and editorial guidance. Finally, we wish to thank Caryl and Laura Schunk for their encouragement and understanding throughout this project.

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Issues in the Study of Student Perceptions
Researchers studying students' classroom behaviors are focusing increasingly on the influence of students' thoughts, beliefs, and feelings about themselves, other persons, and events. This focus on student perceptions assumes that students are active information processors who affect classroom events as much as they are affected by them (Pintrich, Cross, Kozma, & McKeachie, 1986). Current theories of learning and motivation portray students as individuals who formulate achievement goals, selectively attend to events, engage in activities, and employ strategies they believe will help them attain goals, process (organize, transform, code) information in meaningful ways for storage in memory, and create and maintain a positive psychological climate for accomplishing goals (Weinstein & Mayer, 1986).

This view contrasts with earlier, behavioristic views of learners as passive recipients of information whose responses are affected by their reinforcement histories and stimuli in the present environment (Skinner, 1953). As Zimmerman (1989) noted, this view also contrasts with theories postulating that student learning, motivation, and achievement depend heavily on abilities and other individual differences. Although such variables as intelligence and socioeconomic status (SES) may affect students' academic behaviors, the former do not completely explain the latter. For example, students within any given ability level differ in their motivation, achievement, and ability-related perceptions (Bandura, 1986; Schunk, 1989).
The contributors to this volume diverge in many ways: theoretical perspective, types of perceptions addressed, and methodological considerations (tasks, subjects, procedures). Despite these differences, they share the belief that student perceptions represent complex processes that are influenced by a variety of factors and that have diverse effects in school. In this chapter I initially provide a historical perspective on the role of student perceptions in the disciplines of teaching and instructional processes, learning, and motivation. I then discuss the chapters within an organizational framework comprising four sections: Issues in the Study of Student Perceptions, Social Perceptions, Ability-Related Perceptions, Goal Perceptions. I conclude with suggestions for future research.

HISTORICAL PERSPECTIVE

Theory and research in various disciplines have influenced the current emphasis on student perceptions. I have chosen to discuss the contributions from the fields of teaching and instructional processes, learning, and motivation. These domains are relevant to the book's focus and reveal a similar progression in the importance of student perceptions in educational settings. Space limitations preclude an in-depth review of the contributions from other domains (e.g., counseling and psychotherapy, developmental and social psychology).

Teaching and Instructional Processes

Researchers currently investigate student perceptions to determine their relation to teaching and student behaviors (Brophy & Good, 1986), but historically perceptions received little research attention. A sense of this changing emphasis is evident from examining the three volumes of the Handbook of Research on Teaching edited by Gage (1963), Travers (1973), and Wittrock (1986a). Neither the first nor second handbook includes a chapter exclusively devoted to student perceptions. The first handbook contains a chapter by Stern (1963) on noncognitive variables. Noncognitive is defined as, "measures of individual differences in attitudes, values, interests, appreciations, adjustments, temperament, and personality" (p. 400), although attitude is the primary measure for which research on students is summarized. The second handbook includes a chapter on teaching of affective responses (Khan & Weiss, 1973). Affective is defined as, "the evaluative component of attitudes associated with a feeling core of liking or
disliking for social and psychological objects" (p. 760), and the chapter focuses on attitudinal research.

The third handbook (Wittrock, 1986a) contains a chapter on students' thought processes (Wittrock, 1986b). The first sentence of this chapter highlights the importance of student perceptions:

The recent research on students' thought processes studies the effects of teachers and instruction upon the student perceptions, expectations, attentional processes, motivations, attributions, memories, generations, understandings, beliefs, attitudes, learning strategies, and metacognitive processes that mediate achievement. (p. 297)

Research is summarized on the influence in classrooms of student perceptions of self-concepts, expectations, teachers and teacher behaviors, instructional processes, cognitive and metacognitive processes, attributions, and learning strategies. This research shows that student perceptions can mediate the relationship of teacher behaviors to student achievement: Teaching can influence student perceptions, which in turn can affect achievement.

One limitation of historical work is that attitudes and other student beliefs were viewed as products of observable actions by teachers and students. Although student beliefs are influenced by classroom events, the chapters in this volume make it clear that student perceptions also affect classroom events. In short, research on teaching historically offered a limited view of the role of student perceptions in the classroom.

In addition to research on attitudes, another historical line of investigation that contributed to the present emphasis on student perceptions is research on self-concept. Self-concept refers to one's collective self-perceptions that are formed through experiences with, and interpretations of, the environment, and that are heavily influenced by reinforcements and evaluations by significant other persons (Marsh & Shavelson, 1985; Shavelson & Bolus, 1982). Little educational research investigated self-concept prior to 1950, but since then work has accelerated (Wylie, 1961, 1979). Wylie (1961) devoted four pages to educational factors affecting self-concept and the role of self-concept during learning, but her 1979 volume contains 53 pages addressing the relation of self-concept to achievement. Hansford and Hattie (1982) conducted a meta-analysis of 128 studies that investigated self-concept and achievement and that involved over 200,000 subjects.

Current research on teaching and instructional processes explores student perceptions of control, competence, attributions, teachers, peers, and metacognitive (higher-order) processes, among others.
Researchers assess student perceptions with oral or written measures, by asking students to recall what they were thinking about at various points during a lesson (possibly after watching videotaped portions of the lesson), and by having them verbalize aloud as they work on academic tasks (think-aloud procedure). A goal of many researchers is to integrate findings from research on teaching with those from the learning literature to formulate a unified model of classroom teaching and learning (Winne, 1985).

Learning

Although the focus was short-lived, perceptions formed an integral part of some early learning research. In 1879 Wundt established a psychological laboratory in Leipzig, Germany. Titchener, a student of Wundt's, subsequently became the director of the psychological laboratory at Cornell University (Mueller, 1979). The experimental method used by Wundt, Titchener, and many others of the period was introspection, a form of observation involving people's perceptions. Subjects in experiments reported their immediate experiences following exposure to objects or events (e.g., if shown a table they might verbalize their perceptions of shape, size, color, texture, etc.). They were not to label (say "table") or report knowledge about it or meanings of their perceptions; these activities implied that subjects were attending to the stimulus rather than to their conscious processes, which defeated introspection's purpose of studying the structure of mental processes.

Introspection was highly regarded by many psychologists because it helped demarcate psychology from other sciences. Unfortunately, introspection often was problematic and its results unreliable. Forcing people to ignore meanings is an unnatural exercise that provides an inaccurate picture of the mind's structure (Schunk, 1991). Led by Watson (1914), behaviorists criticized introspection and urged psychologists to study behavior.

Through the work of Thorndike, Guthrie, Hull, Skinner, and others, behaviorism dominated American psychology until the early 1960s. Behaviorists do not deny the existence of mental processes, but they contend that these processes do not explain behavior because the causes of behavior reside primarily in the environment. To change behavior, one should alter environmental cues and consequences of actions.

With the domination of behaviorism, learning researchers did not study perceptions. One exception was Gestalt psychologists (Kohler,
1. Theory and Research on Student Perceptions

1947/1959). Originally a theory of perception, Gestalt theory viewed learning as the organizing of perceptions into meaningful configurations (Schunk, 1991). As a formal view of learning, Gestalt theory was thought provoking but generated little research and did not develop into a major theory.

Various factors contributed to the decline of behaviorism, but a major cause was that its principles had difficulty explaining research findings involving complex learning. The cognitive conceptions of learning that began to appear in the 1960s stressed that learning involves the acquisition of knowledge and knowledge structures and occurs as a result of information being mentally processed (Atkinson & Shiffrin, 1968). Although early information-processing research was primarily oriented toward factors related to learning (e.g., knowledge states, memory), interest in learning processes has grown since 1975 (Shuell, 1986).

From an information-processing perspective, student perceptions are types of metacognitive processes. Two types of metacognitive processes are involved in learning (Shuell, 1986). One type helps to regulate activities necessary for learning; examples are planning, organizing information, and monitoring one's level of understanding. The second type is concerned with what learners do and do not know about the material being learned and the processes involved in learning it. Subsumed under the second type is metacognitive knowledge about persons, tasks, and strategies (Flavell, 1985). The persons category includes knowledge of similarities and differences among persons, as well as knowledge of one's own skills and beliefs (e.g., "I'm better in math than in English"); the tasks category comprises information about how task demands can influence performance (recognizing information is easier than recalling it); the strategies categories includes knowledge about the potential value of different strategies for successfully completing tasks (rehearsal is a good strategy for memorizing).

Social cognitive theory also stresses the importance of student perceptions during learning with its emphasis on the idea that people often acquire knowledge, rules, skills, strategies, beliefs, and attitudes, by observing others (Bandura, 1986). Individuals learn the functional value and appropriateness of modeled behaviors by observing their consequences, and they act in accordance with their beliefs concerning the expected outcomes of actions.

Two types of student perceptions are outcome expectations and perceived self-efficacy. Outcome expectations are beliefs about anticipated outcomes of actions. People select actions they believe will be successful and attend to models who they think will teach them valued
skills. Outcome expectations sustain behaviors over long periods when people believe their actions will eventually produce desired outcomes (Bandura, 1986). Perceived self-efficacy refers to judgments of one’s capabilities to organize and implement actions necessary to attain designated performance levels. Self-efficacy can influence choice of activities, effort expended, and persistence. Although these outcomes typically are associated with motivation, they also affect learning (Schunk, 1989).

Current learning research explores the role of student perceptions in the acquisition, retention, and use of knowledge. A particularly active area of research is concerned with teaching students to use learning strategies, or systematic cognitive plans that assist the acquisition of information and task performance (Borkowski, 1985; Pressley et al., 1990). Researchers are showing that learning is a complex process affected by personal and contextual variables and that students’ perceptions of themselves, teachers, and peers are influential during learning (Pintrich et al., 1986).

**Motivation**

The role of student perceptions in motivation theory and research has evolved since the early experimental studies of motivation in the 1930s (Weiner, 1990). Early behavioral theories explained motivation in terms of responses elicited by stimuli (classical conditioning), emitted in the presence of stimuli (operant conditioning), or produced by drive and habit strength (systematic behavior theory). In classical conditioning, the motivational properties of an unconditioned stimulus are transmitted to a conditioned stimulus through repeated pairings. This is a passive view of motivation because once conditioning occurs, the conditioned response is elicited by the conditioned stimulus. In fact, conditioning is complex and depends on information conveyed to the individual about the likelihood of the unconditioned stimulus following presentation of the conditioned stimulus (Rescorla, 1972).

In operant conditioning, motivated behavior is an increased rate of responding or a greater likelihood that a response will be made contingent on a stimulus (Skinner, 1953). Motivated behavior is a function of the individual’s reinforcement history and cues presently in the environment. According to systematic behavior theory (Hull, 1943), needs produce drives that energize individuals. Responding that results in reinforcement creates a habit, and habit strength increases with reinforced stimulus–response pairings. Learning represents increased habit strength; motivation is, “the initiation of learned, or habitual, patterns of movement or behavior” (Hull, 1943, p. 226).
Various lines of evidence caused difficulty for these views, but especially important was research on reinforcement. Tolman and Honzik (1930) demonstrated the phenomenon of latent learning (learning in the absence of reinforcement), which contradicted the notion that behavior change occurs only through reinforcement. Some time later, Bandura (1969) showed that much learning occurs through observation in the absence of reinforcement and performance by observers. Although there is ample evidence that reinforcers can influence what people do, it is not reinforcement that affects behavior but rather people's beliefs about reinforcement. People engage in activities when they believe they will be reinforced and they value that reinforcement (Bandura, 1986). When reinforcement history conflicts with beliefs, people act based on their beliefs (Brewer, 1974). In short, behavioral views offer incomplete accounts of motivation because they ignore the influence of cognitive processes.

Important early cognitive perspectives on motivation emerged from work by Lewin, Dembo, Festinger, and Sears (1944) on level of aspiration (the goal one is attempting to attain), and by Atkinson (1957) on achievement motivation (the striving to perform difficult tasks as well as possible). Atkinson's expectancy-value theory postulated that achievement behaviors represent a conflict between the tendencies to approach (hope for success) and avoid (fear of failure) achievement situations. Achievement actions carry the possibilities of success and failure. Whether one approaches or avoids a situation depends on the motive to succeed or avoid failure, the subjective probability of success or failure, and the incentive value of succeeding or avoiding failure. Achievement motivation is determined by the relative weights of the tendency to approach the goal and the tendency to avoid it.

Recent cognitive approaches to motivation highlight the importance of perceived control, goal setting, self-evaluation, expectations, and attributions. Perceived control is an umbrella term that has been defined in various ways. Rotter's (1966) locus of control emphasizes perceived control over outcomes. Students differ in whether they believe that outcomes either occur independently of how they act and are due to luck, chance, or fate (external control) or are highly contingent on their actions (internal control). A related construct is learned helplessness, or a psychological state involving a disturbance in motivation, emotion, cognition, and behavior, which results from a perceived independence between responses and outcomes (uncontrollability) (Seligman, 1975). The model of perceived control by Skinner and her colleagues comprises strategy beliefs (extent that potential causes produce given outcomes), capacity beliefs (whether the student has or can acquire the potential causes), and control beliefs (whether
the student can produce desired outcomes without reference to any particular means) (Skinner, Wellborn, & Connell, 1990).

In social cognitive theory (Bandura, 1986), motivation is goal-directed behavior instigated and sustained by students' expectations concerning the anticipated outcomes of their actions, self-efficacy for performing those actions, and self-evaluation of goal progress. A perceived negative discrepancy between one's goal and present performance creates an incentive for change. As students work toward goals, they note their progress; the perception of progress sustains motivation and self-efficacy. Goal attainment validates students' self-efficacy and outcome expectations, and they may set new, challenging goals for themselves.

Attributions are perceived causes of outcomes. Attribution theories assume that people desire to explain the causes of significant events (Kelley & Michela, 1980; Weiner, 1985). In achievement settings, students often attribute successes and failures to such factors as ability, effort, task difficulty, and luck; attributions influence expectations of future success (Weiner, 1979). Assuming that learning conditions are not expected to change much, students who attribute prior successes (failures) to such stable factors as high (low) ability or low (high) task difficulty are apt to hold higher (lower) expectancies for success than those who emphasize the variable factors of high (low) effort or good (bad) luck.

Goal theory represents the newest approach to studying motivation in achievement settings (Weiner, 1990). This view postulates important relationships between students' perceptions of their achievement goals (task/ego orientations, learning/performance goals), reward structures (competitive, cooperative, individualistic), attributions (ability, effort), types of comparisons for determining progress (self-, social), and achievement behaviors (choice of activities, effort, persistence, performance). Goal theory integrates many constructs postulated as important by other theoretical views of motivation. So much current research is based at least in part on goal theory that one section of this volume presents this work.

CHAPTER OVERVIEWS

For organizational purposes, the chapters in this volume are grouped by theme into four sections. The first section (Issues in the Study of Student Perceptions) includes this chapter and the chapter by Assor and Connell and discusses general issues that cut across themes. The
I. Theory and Research on Student Perceptions

remaining three sections refer to types of student perceptions: social, ability-related, and goal. Chapters are categorized according to their major focus; however, sections are not mutually exclusive and some chapters cut across sections. Although goal perceptions are ability-related perceptions, chapters that focus on goal perceptions are grouped together to highlight the current research emphasis.

Issues in the Study of Student Perceptions

Validity of Self-Reports. Student perceptions typically are assessed through questionnaires or interviews in which students are presented with items asking about their beliefs and they judge each item using a numerical scale or respond to it verbally. Much has been written about the process of accessing information in memory as input for self-report measures (Ericsson & Simon, 1980; Nisbett & Wilson, 1977). A major concern is whether such self-reports are valid indicators of students’ perceptions that presumably can affect behavior.

Assor and Connell (chapter 2) address these perceptions, or performance affecting self-appraisals, as they relate to self-reports of academic competence. They present empirical evidence to support the point that self-reports of academic competence generally are valid measures of students’ perceptions of competence. In arriving at this conclusion they examine two potential sources of invalidity of self-reports. One source is that subjects may not be able to accurately assess their own competence, as might happen with young children whose judgments depend heavily on salient performance outcomes and therefore might be unstable over time and poor predictors of performance. Assor and Connell review studies showing that, although some stability is evident in young children’s judgments, greater stability and prediction of academic behaviors is found beginning in the third or fourth grade (ages 9–10).

A second source involves subjects who distort competence self-appraisals to maintain self-esteem or favorable judgments by others. Overestimating or underestimating what one can do should result in poor prediction of academic behaviors. Based on their review of studies, Assor and Connell report that moderate overestimating is associated with increased levels of task engagement and performance, high overestimating is associated with a leveling off or a decline, and underestimating relates to lower levels. The authors conclude by offering suggestions for improving the validity of self-reports, which researchers and practitioners interested in assessing students’ perceptions should find helpful.
Social Perceptions

**Influence of Friends.** Berndt and Keefe (chapter 3) address the influence of friends on adolescents’ perceptions. There are theories on the role of friends’ influence (Hartup, 1978), but there is little research on this influence in the classroom. Berndt and Keefe found that junior high school students report greater influence from parents than friends. When students believe friends have some influence on them or vice-versa, more often this influence is positive, rather than negative (e.g., correction of undesirable behavior). Berndt and Keefe also summarize research in which two friends were asked to discuss an issue and changes in students’ perceptions were assessed. Shifts in decisions depended on how opinions were exchanged: The more information exchanged, the more likely a shift in opinion. Discussions generally increased the similarity of friends’ beliefs.

A longitudinal study over a school year investigating class participation of junior high students showed that students who differ in participation draw away from one another and new friendships emerge based on common participation. Students with more satisfactory friendships show better school adjustment; friendships in the fall predict later changes in adjustment. These findings support the importance of friends in school and suggest that friends affect students’ classroom perceptions and participation.

**Perceived Intentionality and Aggression.** Graham and Hudley (chapter 4) explore aggression among African-American students. Although there are several factors that can promote aggression (e.g., poverty, single-parent families, assignment to remedial classes, exposure to violence), Graham and Hudley present an attributional model postulating that cues from an event are used to infer intentionality by the instigator. For example, if a student is pushed by an instigator while waiting in line and the student believes the instigator acted intentionally, then this belief may produce anger and aggression. The basic premise is that aggressive children display an attributional bias to ascribe hostile intent to others following negative events.

Graham and Hudley summarize research showing that aggressive students are more likely than nonaggressive students to believe that peers are intentionally malicious and that anger results from perceived intentionality and causes aggressive actions. In other words, aggressive students feel the way they think and act based on their feelings. The authors describe an intervention designed to change intentionality attributions of aggressive children. The intervention helps children attend to and properly interpret social cues. Particular attention is paid...
to situations offering ambiguous cues about intention. As a result of participating in the intervention program, children showed less perceived intentionality and anger. There also was evidence of generalization outside of the training setting, which has important implications for school-based treatment programs.

**Teachers’ Beliefs.** Wigfield and Harold (chapter 5) discuss the influence of teacher beliefs on student perceptions. Much has been written on teacher expectations of student achievement (Brophy & Good, 1974), but Wigfield and Harold expand this focus to include teachers’ beliefs about students’ abilities, interests, and the value they attach to tasks. Wigfield and Harold summarize longitudinal research on the development and socialization of children’s achievement perceptions. Consistent with other work (Harter & Connell, 1984; Stipek & Mac Iver, 1989), Wigfield and Harold found that students’ perceptions of ability decrease across the elementary school years. They also found consistency between teachers’ perceptions of students’ abilities and students’ self-ratings, especially in reading, mathematics, and sports.

This work has important implications for teacher-student interactions. Young children are not sophisticated in interpreting teacher evaluations, but with development, children receive more teacher feedback reflecting beliefs. By the mid-elementary years, teachers’ beliefs about students’ abilities in specific domains relate strongly to students’ beliefs about their abilities in those domains. This heightened influence of teacher beliefs with development may stem from changes in children’s thinking. Young children do not have a stable conception of ability but rather view it as roughly synonymous in meaning with effort. Around third grade, children begin to develop a conception of ability as a factor underlying performance, which implies that teacher beliefs then may become more influential.

**Academic Help-Seeking.** Newman and Schwager (chapter 6) explore the role of academic help-seeking to obtain information relevant to learning or mastering school tasks. Help-seeking involves asking direct questions of teachers and peers and is an effective component of classroom learning used often by high achievers. In deciding to ask for help students weigh and combine sources of information about task demands, personal resources, and costs and benefits, and they decide whom to ask, what to ask about, and how to do it.

Newman and Schwager summarize research showing that help-seeking depends on perceptions of ability, control, and goals. Children who perceive themselves as academically competent tend to view help-seeking as an effective learning strategy. Students who feel in
control of their academic successes—they know what actions are required to perform well and believe they can accomplish them—are likely to seek help. Children with an intrinsic goal (mastery) orientation are more apt to seek help than those holding an extrinsic orientation. Help-seeking also can be affected by students' perceptions of such classroom factors as characteristics of potential help-givers, teacher involvement and liking, classroom goal orientation, structure of activities, and amount of teacher control. This chapter highlights the idea that many perceptions affect help-seeking and suggests ways to foster students' perceiving help in a positive light.

**Ability-Related Perceptions**

**Motivation and Cognitive Engagement.** Pintrich and Schrauben (chapter 7) discuss the usefulness of motivational constructs for explaining students' cognitive engagement in academic tasks. They present an academic model that highlights motivation and cognitive components. Important motivation components include perceptions of self-efficacy, control, goal orientation, and task value. The authors focus their discussion on how these components relate to such learning strategies as rehearsal, elaboration, monitoring, and self-regulation. Pintrich and Schrauben summarize evidence on the links between these indexes of motivation and cognitive engagement. For example, among college-age and junior high school students strategy use relates positively to self-efficacy, perceived control, intrinsic (mastery) goal orientation, and perceived task value. Although data are correlational, they show important relations between students' perceptions and academic work.

This chapter represents a detailed inquiry into the links between motivation and cognitive engagement. Pintrich and Schrauben underscore the need for research exploring the mechanisms whereby students' perceptions and cognitive engagement affect one another and achievement outcomes. Research exploring the generality of their model will determine how well it applies across various domains and with students of different ages.

**Self-Regulated Learning.** Zimmerman and Martinez-Pons (chapter 8) explore the relation between self-efficacy and learning strategy use during self-regulated learning. *Self-regulated learning* refers to learners' efforts to regulate their learning and performance metacognitively (use of higher-order strategies), motivationally, and behaviorally. They postulate three types of influences: behavioral (self-observation, self-judgment, self-reaction), environmental (academic outcomes),
and personal (goals, self-efficacy, metacognition, knowledge, affect). They summarize data showing that students differ in efficacy and strategy use as a function of academic ability and grade level. Academically able students report greater use of effective learning strategies and hold higher verbal and mathematical self-efficacy compared with less academically able students. Students show an increase in strategy use and self-efficacy from the 5th to the 11th grade.

Zimmerman and Martinez-Pons underscore the point that students’ academic work represents a complex process that is influenced by various perceptions and cognitions. The authors discuss the implications of their work for educational practice and emphasize that training programs must address behavioral, environmental, and personal factors in order to be effective.

**Sex Differences.** Meece and Courtney’s (chapter 9) chapter examines sex differences in achievement perceptions with emphasis on mathematics. Their conceptual focus is an academic choice model, which postulates that sex differences result in part from students’ expectations of success and the perceived incentive value of the task (Eccles et al., 1983). Research shows that boys often hold higher performance expectations in mathematics than girls and that gender-role identities and socialization practices can influence the value that children attach to tasks. Meece and Courtney review studies that support the model but also demonstrate some inconsistency in the relative influence of expectancy and value perceptions.

Meece and Courtney underscore the utility of their framework by noting that neither gender nor measures of ability adequately explain sex differences in achievement. They also point out that sex differences, when found, generally are not large, and urge that future research address such areas as developmental origins of differences, parental expectations, and classroom interaction patterns. The theory and research discussed in this chapter make it clear that teachers need to use materials and instructional practices that enhance both expectancy and value perceptions in order to prevent and alleviate differential perceptions by male and female students.

**Self-Efficacy and Career-Related Choices.** The important role played by self-efficacy in career-related choices is discussed by Hackett and Betz (chapter 10). They present a model postulating that sex-typed childhood experiences limit acquisition of information to use in developing self-efficacy for certain occupational areas. Lower efficacy for given careers affects the types of occupational alternatives considered. For example, women who as children were dissuaded from studying science are likely to choose a nonscientific college major and occupa-
tion. Hackett and Betz present data showing that occupational self-efficacy is a strong predictor of career choice. They also summarize evidence supporting the idea that experiences affect self-efficacy and that vocational interests are influenced by self-efficacy.

The notion that self-efficacy may help explain the low incidence of women in many jobs and fields of study has important implications for classroom practice. Research shows that teachers often convey sex-typed feedback to students (Meece, Parsons, Kaczala, Goff, & Futterman, 1982). Such feedback may affect students’ efficacy for various occupations. Teachers can help students by determining their sense of efficacy for various content areas and by ensuring that students have diverse experiences that expand their career choices.

**Students With Learning Problems.** Licht (chapter 11) examines self-evaluations of ability among students with learning problems. Licht notes that theory and research support the idea that many children who experience failures during their early school years develop perceptions of low ability. Low perceived ability can negatively affect effort, persistence, and achievement, and these outcomes substantiate children’s perceptions of low ability. At the same time, developmental research shows that many young children do not respond in this fashion but rather maintain a high perception of their abilities even in the face of failure. Negative self-perceptions and low motivation and achievement often do not occur until children have been in school for a while, which suggests that negative outcomes may have to accumulate to exert their effects.

Licht argues that the latter evidence underestimates the vulnerability of children to school failure. She cites evidence showing that preschool and kindergarten children lower their self-evaluations of ability following failure and display motivational deficiencies. Whether learning problems lead to low perceptions and achievement may depend on such variables as parental encouragement of autonomy, classroom grouping practices, opportunities for social comparisons, and the presence of types of behavior problems. These and other ideas discussed by Licht have important implications for parents and teachers as they attempt to strengthen ability perceptions among students for whom classroom learning often is difficult.

**Goal Perceptions**

*Theories About Education.* Nicholls (chapter 12) postulates that students hold many theoretical ideas pertaining to education. Some of
the most important relate to motivational orientations. Students with an ego orientation are concerned about their ability as it compares with that of other students. They feel successful when they perceive their ability as higher than that of others, and adopt performance goals of working well enough so teachers and peers will believe they are competent. Students with a task orientation are concerned about learning and improving their skills. They feel successful when they expend effort and believe they are improving. They adopt learning goals and think that ability is enhanced through effort. These two orientations are separate and often unrelated; they are not two ends of a continuum.

Nicholls summarizes evidence showing that students' theoretical ideas bear important relations with such other variables as use of reading strategies, higher-order mathematical knowledge, and endorsement of practices conducive to learning. Task and ego orientations also relate differently to beliefs about the purposes of education. These points have implications for educational planning. Children have theories about the nature and value of knowledge and how it should be acquired. Students' ideas usually are not considered when planning instruction. Nicholls suggests that educators would benefit by determining students' beliefs about school learning.

Multiple Goals. Wentzel (chapter 13) discusses the multiple goals that adolescents hold. Goals influence achievement behaviors, may conflict with or complement one another, and may relate to task mastery and reflect the processes of learning or be concerned with evaluation and social comparisons. Students also hold nonacademic goals—obtaining social approval, cooperating with others. Wentzel summarizes research showing that goals interact with one another, achievement, and classroom behavior. Goals relating positively to student achievement are: be a successful student, be dependable, be responsible, learn new things, understand things, do your best, and get things done on time. High achievers report frequent pursuit of mastery, evaluation, and social responsibility goals (i.e., be helpful to others, be cooperative and sharing). Social responsibility goals relate positively to social acceptance by peers and to teachers' preferences for students.

Wentzel notes that academic achievement is explained better by sets of goals than by single goals. Academic and social responsibility goals may affect achievement in additive fashion. Research needs to clarify the mechanisms whereby goals combine to influence achievement behaviors and to explore the generality of findings to younger and older students. Wentzel's work suggests that teachers emphasize that academic success depends on many factors and teach social responsibility along with academics.
Feedback and Social Comparison. Jagacinski (chapter 14) explores the effects of task-and ego-involving conditions on students' perceptions and behaviors and discusses the influential roles played by feedback and social comparisons of one's performance with those of others. Under task-involving conditions, high effort is positively related to perceived competence, pride, and a sense of accomplishment, but under ego-involving conditions low effort is associated with these outcomes. Social comparisons have greater effects on students' perceptions under ego-involving conditions than under task-involving ones. Feedback sustains motivation to the extent it provides information relevant to the conception of ability employed. Task-involved students are interested in assessing their improvement and mastery; ego-involved students want to perform better than others.

Jagacinski's work shows that students react differently to task- and ego-involving conditions. Classrooms can foster differential beliefs among students depending on the conditions in effect. Emphasizing normative evaluation may promote ego involvement, but the absence of such evaluation does not necessarily increase task involvement. Group projects and cooperative work in which students share the responsibility for the final product are some ways to foster a task-involved learning orientation.

Classroom Climate. Ames (chapter 15) explores the relation between classroom climate and students' goals (mastery and performance). Mastery-oriented learners focus on developing skills and derive satisfaction from participation. Effort is viewed as a way to succeed. Performance-oriented students desire to protect their sense of self-worth. They want to be viewed as having high ability, and they do not necessarily value effort because to be judged as able requires succeeding with little effort. Ames argues that these goal orientations can arise from classroom conditions. Adoption of a goal orientation depends in part on its salience in the classroom.

Ames describes a systematic intervention aimed at fostering a mastery-goal orientation. Six features of the classroom can be structured to stress a mastery-goal orientation: task design, distribution of authority, rewards, grouping, evaluation, time allocation. Data from Ames's long-term project show that the mastery climate of classrooms is increased when teachers implement these features during an academic year. These features also influence children's interest in learning, use of effective learning strategies, attitudes toward learning, and perceived abilities. This type of intervention holds important promise for educators who wish to foster a productive classroom environment.
CONCLUSION AND A LOOK FORWARD

Research on student perceptions is an active area and we can anticipate that research will continue to examine the variables that influence perceptions and the effects of perceptions in educational settings. In the remainder of this chapter I present some suggestions for future research. Being associated with this project for several months helped to clarify my thinking on the role of student perceptions in education. These suggestions derive from the recommendations discussed by the chapter authors and from my beliefs about topics that need to be addressed.

Student Behaviors

In much of the research summarized in these chapters investigators assessed student perceptions and related these to such measures as achievement, goals, and intentions to engage in activities or use strategies. These findings are informative and contribute to our understanding of the role of perceptions in educational settings. I recommend, however, that more researchers investigate how well perceptions translate into actual classroom behaviors. For example, researchers might examine to what extent students who report that they intend to use a particular strategy actually employ it while learning.

Such data can be collected by observing students in class, videotaping them as they work on tasks, using think-aloud protocols in which students verbalize aloud as they work on tasks, and asking teachers to rate students on frequency of strategy use. Investigators also might conduct experimental studies where they attempt to alter students’ perceptions and see whether there are changes in behaviors, and longitudinal studies in which students are followed over time to assess the stability of their perceptions and determine when perceptions are most susceptible to change. We might draw teachers into the research process and have them implement treatments designed to affect students’ perceptions and behaviors. Such studies sacrifice some experimental control but provide a wealth of knowledge on the operation of student perceptions.

Theory Development

Weiner (1990) noted that the large, formal theories that once dominated the field of motivation (e.g., operant conditioning, Hull’s sys-
tematic behavior theory) have been replaced by smaller scale cognitive theories emphasizing such interrelated constructs as self-efficacy, attributions, perceived control, and goals. Theorists typically hypothesize that these latter constructs are related, although how they are related often is not clearly specified. Weiner contended that, "The lack of theoretical elaboration reduces both the generality and the precision of these intertwined approaches" (p. 620).

The same issue is applicable to theories concerning student perceptions. The chapters in this volume represent such cognitive theoretical approaches as attribution theory, social cognitive theory, and goal theory. I am not calling for a return to global theorizing, which has its own set of problems; rather, I am recommending that investigators pay more attention to the generality of their theoretical ideas. In this regard, investigators should continue integrating constructs and testing integrated models in different contexts to determine their usefulness for explaining achievement behaviors.

Emotion

A third research direction is to explore the links between students' perceptions and emotions in achievement settings. Although many theoretical perspectives on student perceptions stress the role of emotion in achievement situations, little educational research is examining these links.

Weiner (1990) recommended research investigating the interrelationship of cognition, emotion, and motivation. I extend this recommendation to include exploring the relation of emotion to classroom learning and achievement. The research methodologies described in this book could be adapted to include affective variables, and the findings would have important implications for interventions designed to foster student learning and motivation.

Research Methods

These chapters highlight some methodological issues that need to be addressed. Many researchers have developed instruments specific to the domains being studied. At a minimum, researchers should report reliability and validity data. It also would be useful to include copies of instruments as appendixes to articles (for an example see Pintrich & De Groot, 1990).

We also need to consider alternative methods of data collection. Quantitative measures might be broadened from reliance on numer-
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Psychological scales to include qualitative indexes: Subjects could describe their perceptions in response to different scenarios. Rather than relying on self-report measures and relating these to outcomes in short-term studies, we could conduct longitudinal studies, case studies, and oral histories. Although such studies might include fewer subjects, they would yield rich data sources for examining the role of student perceptions in academic settings.

A Final Word

In this chapter I have provided readers with background information on student perceptions in educationally relevant research, along with an organizational framework and summary comments on the chapters in this volume. I hope this framework highlights the distinct features of chapters and their relationships to other chapters. As I noted at the outset, the contributors differ in many ways, but they share the belief that student perceptions are influenced by many factors and have diverse effects in educational settings. The scope and diversity of these chapters promise exciting research developments in the next several years.

ACKNOWLEDGMENT

I wish to thank Judith L. Meece for her helpful comments on an earlier draft of this chapter.

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