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STUDENTS' PERCEPTIONS OF CLASSROOM CLIMATE:  
IMPLICATIONS FOR MOTIVATION

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Abstract

A total of 241 high school students completed a questionnaire about one of their classes. They indicated their perceptions of the classroom "climate" established by the teacher and a number of self-report variables. Results indicate that students who perceive the teacher to be encouraging them to adopt a mastery goal (with a focus on self-improvement), compared with students who did not perceive a mastery orientation in their teacher, reported using more effective learning strategies, liked their class more, attributed success to good teaching, and did not attribute failure to poor teaching.

Introduction

Encouraging students' motivation to learn remains an enduring interest for educational researchers. In recent years, cognitive psychology has offered many insights into the way information is processed and the sorts of metacognitive strategies that enhance learning (e.g., Flavell, 1985; C. Weinstein & Mayer, 1986). However, students do not benefit from these insights if they do not want to learn or do not feel they are capable of learning. Like research into cognition, and to an extent in tandem with it because of a similar cognitive perspective, research into motivation has produced findings with significant implications for life in classrooms.

An emerging theory of motivation takes as its focus the

goals students hold as they approach their work (Weiner, 1990; Pervin, 1989). Two goals in particular have received attention. They have been labeled variously but share similar theoretical distinctions. One goal has been labeled a performance goal (Dweck, 1986; Ames & Archer, 1988), or ego-involved (Maehr, 1984; Nicholls et al., 1985). The other goal has been labeled a mastery goal (Ames & Archer, 1988), task-involved (Maehr, 1984; Nicholls et al., 1985), and a learning

goal (Dweck, 1986). In this study the goals will be referred to as performance and mastery goals.

Students who hold a performance goal want to demonstrate their ability to others by being successful, particularly by doing well with the expenditure of little effort (so that success may be attributed to ability rather than to effort). What the student values is doing a task better than others and thereby highlighting normatively high ability. A student who holds a performance goal but feels he lacks ability may focus on hiding this low ability from others. Students who hold a mastery goal want to develop skills or a deeper understanding of an area of study. Here, what the student values is the process of learning rather than demonstrating ability, and so there is no sense of shame attached to working hard.

Research has shown that the degree of orientation toward an achievement goal varies from student to student (Ames & Archer, 1987) and also can be affected by situational variables. In particular, Ames and her colleagues (Ames, 1984; Ames & Ames, 1981; Ames, Ames & Felker, 1977) demonstrated in a series of experiments that when students are encouraged to compete against each other they tend to focus on their perceived level of ability, thereby indicating adoption of a performance goal. When students are encouraged to focus on self-improvement or reaching an absolute standard, they tend to focus on the effort they expended or the strategies they used to complete the task, an indication of a mastery goal.

Also, as Dweck (1986) points out, it is possible for students to embrace both goals simultaneously. For example, a student in a geography class may derive enjoyment from developing her skills in geography, but also may strive to demonstrate her high ability by getting the highest marks in the class. There will be times, however, when orientation towards one goal will take precedence over orientation towards the other. A decision not to take an advanced course in geography may indicate a performance goal ("I don't want to risk looking stupid in front of the others by getting poorer

marks than I do now") outweighing a mastery goal ("I enjoy geography and want to learn more about it").

Adoption of a mastery goal has been linked to a number of variables that should enhance learning: defining success in terms of increased understanding (Ames & Archer, 1987; Nicholls et al., 1985); choosing challenging tasks (Elliott & Dweck, 1988; Ames & Archer, 1987, 1988); attributing success to trying hard, use of effective strategies, and good teaching (Ames & Ames, 1981; Ames & Archer, 1988), attributing failure to a lack of effort (Ames & Ames, 1981); feeling bored or disappointed with success on tasks that require little effort (Elliott & Dweck, 1988); increased use of metacognitive strategies (Ames & Archer, 1988; Archer et al., 1991; Nolen, 1987; Meece et al., 1988), and creativity (Archer, 1989).

Adoption of a performance goal, on the other hand, may be maladaptive for learning in a number of respects,

particularly for students with low perceived ability: judging success in terms of doing better than others (Ames & Archer, 1988; Nicholls et al., 1985); choosing easy tasks where success is likely (Elliott & Dweck, 1988; Ames & Archer, 1987); attributing success to ability and failure to a lack of ability (Ames, Ames & Felker, 1977); and feeling proud or relieved when succeeding on a task that required little effort (Elliott & Dweck, 1988).

In experimental situations, signals or cues to subjects encouraging the adoption of a goal can be presented clearly and unambiguously. In classrooms, however, students may receive contradictory and confusing cues. For example, a teacher may exhort all students to work hard but at the same time draw attention to the more able students by treating them in a more friendly and informal manner than the other students. In addition, research has shown that students within the same classroom may not attend to the same cues or may react differently to the same cues (R. Weinstein, 1989; Ryan & Grolnick, 1986). These different reactions may be the result of different up-bringing (Ames & Archer, 1987), different experiences in earlier grades (Stipek & Hoffman, 1981), or differential treatment of students within a classroom (Brattesani et al., 1984). It can be argued that students' interpretations of experiences provide a more meaningful understanding of life in classrooms than some "objective" measure because students' subsequent behaviour and attitudes stem from their interpretations.

Research conducted in the United States has shown that

teachers are perceived by students to encourage adoption of mastery and performance goals. This research also has linked students' perceptions of teachers' behaviour to important variables such as enjoyment (Ames & Archer, 1988), willingness to tackle difficult tasks (Ames & Archer, 1988), attributions (Ames & Archer, 1988) and reported use of effective metacognitive strategies (Ames & Archer, 1988; Nolen, 1987; Nolen & Haladyna, 1990; Meece et al., 1988). Can similar relationships between students' perceptions of teachers' behaviour and students' motivation be established in an Australian context? This question is the focus of the present study.

In the Ames and Archer (1988) study, scales were developed to measure students' perceptions of classroom climate in terms of mastery and performance goals. Mastery and performance goal orientations were established for various dimensions of classroom life: definition of success (mastery: improvement, progress; performance: high performance compared with others); valued activities (mastery: effort, learning; performance: normatively high ability); reasons for satisfaction (mastery: working hard, accepting challenge; performance: doing better than others); orientation of the teacher (mastery: how students are learning; performance: how students are performing); attitude toward mistakes (mastery: part of learning; performance: cause for anxiety); students' focus of attention (mastery: process of learning; performance: own performance relative to others); reason for effort

(mastery: learn new things; performance: do better than others); and criteria for evaluation (mastery: progress, reaching absolute standards; performance: normative). The present study made use of a modified version of these scales (the modifications are discussed in the Instruments section).

A number of studies have established a relationship between students' perceptions of a mastery-oriented classroom climate and their reported use of desirable metacognitive learning strategies (Ames & Archer, 1988; Meece et al., 1988, Nolen, 1987; Nolen & Haladyna, 1990). This finding is of particular significance because it has been established that students often do not choose to use metacognitive strategies even though they are aware of them (for example, Schiefele, 1991). A link between the behaviour and attitudes of teachers (as seen through the eyes of students) and students' use of strategies that enhance learning is worthy of further investigation. A modified version of the learning strategies scale used by Ames & Archer (1988) was used in the present study (again, the modifications are discussed in the

Instruments section).

Finally, students' assessment of their own ability might be expected to exert an influence on variables such as liking for a class, attributional patterns, and willingness to undertake challenging tasks. For example, a student who sees himself as among the best students in the class conceivably would like the class more and be more willing to take on challenging tasks than a student who sees himself as among the least able students. However, the research evidence is somewhat equivocal. Some studies have suggested that a mastery orientation among students reduces the impact of perceived ability on students' attitudes and behaviour in the classroom (Nolen, 1987; Nolen & Haladyna, 1990; Nicholls et al., 1989; Ames & Archer, 1988; Meece et al., 1988).

In all, this study represents an attempt in an Australian high school context to establish relationships among motivational variables and metacognitive strategies that to date have been investigated principally in the United States. Of central concern: can students' perceptions of a classroom climate created by the teacher (delineated by mastery and performance goals) be shown to be related to liking of the class, a willingness to tackle challenging tasks, attributional patterns for success and failure, and use of effective learning strategies?

## Method

### Subjects and Procedure

Two hundred and forty-one students (98 boys, 126 girls, 17 not indicating sex) in Grades 9-11 who attended a high school in a seaside community south of Newcastle participated in the study. Students responded to a questionnaire about one of their classes (that class designated randomly beforehand). In all, students responded to 59 class taken by 27 teachers (some teachers taking more than one class in a subject area).

The number of students responding about a particular class ranged from one to eight. Students were directed to think about the class designated on the front of their questionnaire (for example, Grade 9 English class) as they responded to the questionnaire. To reinforce the direction to think about a particular class, students were asked to complete the statement "The class I am thinking about is \_\_\_\_\_" which appeared on the top of each page of the questionnaire.

## Instruments

Achievement goal orientation This set of items was designed to assess students' perceptions of the mastery and performance dimensions of a classroom, as presented in the introduction to this article. A modified version of the scales developed by Ames & Archer (1988) was used. Nolen & Haladyna (1990) criticized these scales because, although purportedly measuring students' perceptions of teachers' behaviour, some of the items did not refer specifically to the attitudes and behaviours of teachers. For example, with items such as "in this class I work hard because I want to learn new things" and "in this class students feel bad if they do not do as well as others", the referent is the student rather than the teacher, who can be seen only indirectly as the referent. Nolen and Haladyna (1990) argued that by combining such items with items concerning teachers more directly, the meaning of the scales became unclear. In response to this argument, a number of items in the Ames and Archer scales were reworded to emphasize the teacher's role. For example, the item "in this class, I work hard because I want to learn new things" was changed to "in this class, I work hard because the teacher wants me to learn new things."

A factor analysis on the total pool of items, specifying a two factor solution, was conducted in an attempt to confirm an a priori classification of items into mastery and performance goal categories. The classification of items was not as clear-cut as in the Ames and Archer study, particularly for the performance scale. For the mastery scale, 12 items were selected on the basis of loading at or above .45 on the mastery factor while loading at or below .15 on the performance factor. For the performance scale, 6 items were selected on the basis of loading at or above .42 on the performance factor while loading at or below .17 on the mastery factor. The coefficient alpha for the mastery scale was .87; the coefficient alpha for the performance scale was .63. It must be noted that a coefficient alpha of .63 points to a somewhat inadequate scale and as such any statistics derived using the performance scale must be accepted with caution. The correlation between the scales was .09 (non significant).

Questionnaire items were prefaced with the heading "in this class..." and students rated each item on a 5-point Likert scale ranging from "do not agree at all" (1) to "strongly agree" (5) (it should be noted that the scales in the Ames and Archer study were anchored by "strongly disagree" and "strongly agree"). Examples of the 13 items constituting

the mastery scale include "the teacher wants us to enjoy learning new things", "the teacher makes sure I understand the work", and "the teacher wants us to keep trying even though we make mistakes." Example of the 6 items constituting the performance scale include "students compete to see who can do the best work", "students want to know how others score on assignments and tests", and "the teacher wants us to work hard to get a high grade."

**Learning strategies** Students' reported use of effective strategies for studying, including monitoring, planning, and elaborating, were assessed with 14 items. Again, the learning strategies scales used by Ames and Archer (1988) formed the basis of the scale, but with three additional monitoring items. Elaboration strategies focus on integrating new information into what has been learned previously, while monitoring strategies refer to ways of checking that new material is being comprehended (Nolen & Haladyna, 1990). The items were selected as examples of strategies that are generic to the process of learning, rather than specific to a particular discipline. The coefficient alpha for the scale was .86.

The items on the scale also were prefaced with "in this class ..." and students rated each item on a 5-point Likert scale from "not at all typical of me" (1) to "very much typical of me" (5). Example of the items include "when studying for this class I try to pull together the information from class and what I read", "I make charts, diagrams or tables to summarize material for this class", "when I study for this class I set goals for myself", and "when I study for this class I think about how I would explain it to someone else."

**Attributions** Students were asked two sets of attribution questions related to doing well and not doing well in the class ("When you do well in this class, why do you think you are successful?; "When you do not do very well in this class, why do you think you are not successful?"). For each set, students rated the importance of ability ("you have ability in this area"; "you lack ability in this area"), effort ("you have worked very hard"; "you did not work hard enough"), study strategies ("you used good study strategies"; "you did not use good study strategies"), the work given ("the work was not difficult"; "the work was difficult"), and the teacher ("the teacher did a good job"; "the teacher did a poor job"). Five point scales (1=not an important reason; 5=an important reason) were used for each rating.

**Liking of the class** A single question was used to assess

students' liking of the class ("How would you rate your liking for this class?") on a five point scale (1=very little; 5=a lot).

**Preference for hard and easy tasks** A single question was used to assess students' willingness to tackle a difficult but ultimately rewarding task ("a project where you can learn a lot of new things, but you will have some difficulty and make

many mistakes, but eventually learn something useful") on a 5 point scale (1=not likely at all, 5=very likely).

A single question also was used to assess students' willingness to choose an easy task that probably would achieve a high mark ("a project that will involve little struggle or confusion and you probably would do very well") on the same 5 point rating scale.

**Perceived ability** A single question was used to assess students' perception of their relative ability in the class ("How would you rate your ability in this class compared with other students in your class?") on a five point scale (1=one of the lowest; 3=about in the middle; 5=one of the highest).

## Results

This study is concerned with individual students' perception of their teachers' behaviour and the relationship between this perception and the students' reported attitudes and behaviours. Because of this, all analyses were conducted on the sample as a whole, not on a class by class basis. Means and standard deviations are reported for each variable in Table 1. Correlational analyses were carried out first. Second, regression analyses were used to demonstrate that the links between perceived classroom climate and students' reported use of strategies and liking for the class were not removed when students' perceived ability was taken into account.

**Correlational analyses** Students' scores on the mastery and performance scales were correlated with reported use of effective learning strategies, attributions for success and failure, and liking for the class. The correlations are shown in Table 2. As the correlations show, when students perceived the teacher to be emphasizing mastery goals they reported more use of effective learning strategies ( $r=.40$ ,  $p<.001$ ) and more liking of the class ( $r=.55$ ,  $p<.001$ ). The correlations for students' preferences for easy and difficult tasks, however, were not clear-cut. Though there was a minor correlation

between a perceived performance goal and preference for easy tasks, the correlation between perceived mastery goal and preference for difficult tasks did not reach significance.

In the attributions for success and failure, students who perceived the teacher to be emphasizing a mastery goal were more likely to attribute success to ability, to effort, to use of effective strategies, and to good teaching. It should be noted that the strongest of these correlations is that attributing success to good teaching ( $r=.52$ ,  $p.<.001$ ) and that students who perceived a mastery-oriented classroom did not attribute success to easy tasks. This recognition of the importance of the teacher can be seen again in the attributions for failure where students who perceived their teacher to be emphasizing mastery goals indicated that failure was not the result of poor teaching ( $r=-.31$ ,  $p.<.001$ ).

**Regression analyses** One might expect that students who perceive themselves to be among the best students in the class would be the ones to use the more effective learning strategies and to enjoy their classes more than students who see themselves as among the poorer students. In fact, self-perception of ability was related to reported use of effective strategies ( $r=.27$ ,  $p.<.001$ ) and to liking for the class ( $r=.34$ ,  $p.<.001$ ). To demonstrate that students' perception of a mastery climate predicted learning strategies and liking of the class over and above that of perceived ability, two hierarchically ordered regression analyses were performed. In these analyses, self-perception of ability was entered into the equation first, followed by perception of a performance climate, and lastly by perception of a mastery climate. The results are shown in Table 3.

With learning strategies, the multiple R squared with self-perception of ability as the only independent variable was .07. The addition of performance climate meant a change in R squared of .03. The final addition of mastery climate meant a significant change in R squared of .12. With liking for the class, multiple R squared with self-perception of ability as the only independent variable was .13. The addition of performance climate did not add to R squared, but the addition of mastery climate meant a change in R squared of .24. That is, perception of a mastery climate remained a highly significant predictor of students' reported use of effective strategies and their liking for the class after the contribution of related variables had been taken into account.

Discussion

The findings of the study demonstrate that students' perceptions of how teachers structure classrooms can be delineated in terms of a mastery goal orientation, and, to a lesser extent, in terms of a performance goal orientation. In addition, students' perceptions of a mastery-oriented classroom climate have been linked significantly to their reported use of effective learning strategies and to their liking for the class.

It is particularly noteworthy that perception of a mastery climate was a strong predictor of learning strategies and liking for the class after the effect of perceived ability had been removed. There is increasing interest in the area of self-perception of ability and its effect on performance and psychological well-being (e.g., Nicholls, 1989; Sternberg & Kolligian, 1990). The findings of the present study, in line with previous research (Ames & Archer, 1988; Covington, 1984; Meece et al., 1988; Nicholls et al., 1989; Nolen, 1987; Nolen & Haladyna, 1990), suggest that a mastery orientation may lessen the impact of perceived ability on attitudes and behaviour.

Achievement goal theory (e.g., Dweck, 1986) may provide an explanation for this phenomenon. Performance-oriented students want to validate their competence by demonstrating it to others; mastery-oriented students are concerned with

developing competence rather than displaying it. As such, mastery-oriented students are not focused on their ability, and they should not be unduly concerned by the knowledge that they are performing at a lesser level than their peers. Judging success and failure in terms of self-improvement rather than judging them in terms of relative achievement represents a more adaptive approach to learning because a student has far greater control over her own effort than over the effort of others.

The relationship between perception of a mastery climate and attributions for success and failure warrants attention. Students perceiving a mastery climate attributed success to a number of factors, including ability, effort, and the use of effective strategies (though students' interpretation of "strategies" is unclear). However, the most significant attribution students made was to good teaching. Also, they clearly did not attribute failure to poor teaching. These findings suggest that students who perceive a mastery climate operating in their classroom strongly believe the teacher to be instrumental in their success, providing them with help and

encouragement to learn.

The failure of the performance scale to achieve a satisfactory internal consistency was disappointing and difficult to explain. It should be noted however, that in previous research involving development of mastery and performance scales (Ames & Archer, 1988; Archer, 1989; Archer et al., 1991), the mastery scale has consistently proved the more robust of the two. In addition, in the Ames and Archer (1988) study, the sample comprised students from a small high school for the academically gifted. It may be that in such a high school competition among students was more pronounced than in the Australian sample and it may have been encouraged by at least some of the teachers. This would have highlighted performance goal cues for the students.

The findings of the study provide support for the theory of achievement goals in an Australian context, particularly for the construct of a mastery goal. Its criterion validity has been strengthened by strong relationships with variables that would be expected to enhance learning. It can be argued that variables such as liking for a class are as worthy of attention as achievement scores (which are influenced heavily by factors such as ability and socio-economic status) because they represent motivational attitudes that bode well for future learning. Also, as noted in the introduction, many students do not choose to make use of effective metacognitive strategies they are capable of using. The findings of this study point to a link between teaching practices and students' willingness to use these strategies.

In all, it appears that teachers can play a major role in shaping their students' approach to learning: structuring classes so that individual improvement is rewarded; understanding of the content of classes is stressed; hard work

is encouraged; mistakes are regarded as a natural part of learning; and novel and interesting tasks are incorporated into the classroom routine.

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Table 1

Descriptive statistics for each variable

Measure	M	SD
Mastery climate (12)	34.55	8.83
Performance climate (6)	21.13	4.39
Learning strategies (14)	40.62	10.24
Preference hard tasks	3.00	1.13
Preference easy tasks	3.87	1.13
Liking for class	3.19	1.35
Self-perception of ability	3.63	1.03
Attributions for success		
Ability	3.52	1.12
Effort	3.89	1.02
Strategies	2.84	1.17
Task		3.13
1.28		
Teacher	3.12	1.41
Attributions for failure		
Ability	2.93	1.44
Effort	3.62	1.36
Strategies	3.43	1.33
Task		3.50
1.30		
Teacher	2.82	1.56

Number in parentheses shows the number of items (when greater than 1) involved in computing the mean.

Table 2

Zero-order correlations between perceived goals and self-related measures

Measure	Mastery	Performance
Learning strategies	.40***	.19**
Preference hard tasks	.13	.06
Preference easy tasks	.00	.15*
Liking for class	.55***	.10
Self-perception of ability	.13	.01
Attributions for success		
Ability	.17*	.05

Effort	.24***		.20**
Strategies	.23***		.08
Task		.01	
	.00		
Teacher	.52***		.02
Attributions for failure			
Ability	-.06		-.05
Effort	.11		.16*
Strategies	.08		.14*
Task		-.02	
	.13		
Teacher	-.31***		.00

\* p.<.05, \*\* p.<.01, \*\*\* p.<.001

Table 3

Increments in R squared for hierarchical regressions on learning strategies and liking for the class

Order of entry	Learning		
Liking	strategies		for
class			
Self-perception of ability	.07***	.13***	
Performance climate	.03*		.00
Mastery climate	.12***	.24***	
Total R squared	.22		.37

\* p.<.05, \*\* p.<.01, \*\*\* p.<.001

## References

- Ames, C. (1984). Achievement attributions and self-instructions in competitive and individualistic goal structures. *Journal of Educational Psychology*, 76, 478-487.
- Ames, C., & Ames, R. (1981). Competitive versus

- individualistic goal structures: The salience of past performance information for causal attributions and affect. *Journal of Educational Psychology*, 73, 411-418.
- Ames, C., & Ames, R. (1984). Systems of student and teacher motivation: Toward a qualitative definition. *Journal of Educational Psychology*, 76, 535-556.
- Ames, C., Ames, R., & Felker, D. (1977). Effects of competitive reward structure and valence of outcome on children's achievement attributions. *Journal of Educational Psychology*, 69, 1-8.
- Ames, C., & Archer, J. (1987). Mothers' beliefs about the role of effort and ability in school learning. *Journal of Educational Psychology*, 79, 409-414.
- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, 80, 260-267.
- Archer, J. (1989). Motivation and creativity: The relationship between achievement goals and creativity in writing. Unpublished PhD thesis, University of Illinois at Urbana-Champaign.
- Archer, J., Scevak, J., & Monfries, M. (1991). Motivational patterns and use of effective learning strategies among first year university students. Paper presented at the annual meeting of the Australian Association for Research in Education, Gold Coast, November.
- Brattesani, K.A., Weinstein, R.S., & Marshall, H.H. (1984). Student perceptions of differential teacher treatment as moderators of teacher expectation effects. *Journal of Educational Psychology*, 76, 236-247.
- Covington, M.V. (1984). The motive for self-worth. In R. Ames & C. Ames (Eds.), *Research on motivation in education* (Vol. 1, pp. 78-113). New York: Academic Press.
- Dweck, C.S. (1986). Motivational processes affecting learning. *American Psychologist*, 41, 1040-1048.
- Elliott, E.S., & Dweck, C.S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54, 5-12.
- Flavell, J.H. (1985). *Cognitive development* (2nd edition). Englewood Cliffs, NJ: Prentice Hall.
- Maehr, M.L. (1984). Meaning and motivation: Toward a theory of personal investment. In R. Ames & C. Ames (Eds.), *Research on motivation in education* (Vol.1, pp. 115-144). New York: Academic Press.
- Meece, J.L., Blumenfeld, P.C., & Hoyle, R.H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology*, 80, 514-523.
- Nicholls, J.G. (1989). The competitive ethos and democratic

education. Cambridge, MA: Harvard University Press.

- Nicholls, J.G., Cheung, P.C., Lauer, J., & Patashnick, M. (1989). Individual differences in academic motivation: Perceived ability, goals, beliefs, and values. *Learning and Individual Differences*, 1, 63-84.
- Nicholls, J.G., Patashnick, M., & Nolen, S.B. (1985). Adolescents' theories of education. *Journal of Educational Psychology*, 77, 683-692.
- Nolen, S.B. (1987). The influence of task involvement on the use of learning strategies. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC, April.
- Nolen, S.B., & Haladyna, T.M. (1990). Personal and environmental influences on students' beliefs about effective study strategies. *Contemporary Educational Psychology*, 15, 116-130.
- Pervin, L.A. (1989). Goal concepts in personality and social psychology: A historical introduction. In L.A. Pervin (Ed.), *Goal concepts in personality and social psychology* (pp. 1-17). Hillsdale, NJ: Erlbaum.
- Ryan, R.M., & Grolnick, W.S. (1986). Origins and pawns in the classroom: Self-report and projective assessments of individual differences in children's perceptions. *Journal of Personality and Social Psychology*, 50, 550-558.
- Schiefele, U. (1991). Interest, learning, and motivation. *Educational Psychologist*, 26, 299-323.
- Sternberg, R.J., & Kolligian, J. Jr. (Eds.) (1990). *Competence considered*. New Haven, CT: Yale University Press.
- Stipek, D., & Hoffman, J. (1981). Children's achievement-related expectations as a function of academic performance histories and sex. *Journal of Educational Psychology*, 72, 861-865.
- Weiner, B. (1990). History of motivational research in education. *Journal of Educational Psychology*, 82, 616-622.
- Weinstein, C.E., & Mayer, R.E. (1986). The teaching of learning strategies. In M. Wittrock (Ed.), *The handbook of research on teaching* (pp. 315-327). New York: MacMillan.
- Weinstein, R.S. (1989). Perceived classroom processes and student motivation. In C. Ames & R. Ames (Eds.), *Research on motivation in education* (Vol. 3, pp. 187-221). New York: Academic Press.



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