THE ROLE OF LEARNING VERSUS PERFORMANCE ORIENTATIONS WHEN REACTING TO NEGATIVE OUTCOMES IN SIMULATION GAMES

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ABSTRACT

We study student reactions to negative outcomes from simulation games in order to investigate whether "trial and error" learning is in fact a positive learning experience. Drawing on Dweck's (1990) body of work, we expect that students with learning orientations will react very favorably to negative outcomes, but that students with performance orientations will not. The possibility of learned helplessness resulting from game play is a dismal outcome for students with performance orientations. Instructors need to monitor game performance and provide differential levels of consulting help to students with varying learning orientations.

INTRODUCTION

Experiential learning is often described in terms of "trial and error." "Error" implies failure and the essence of experiential learning is the presumption that individuals will change their behaviors (or cognitions) in similar situations in the future. But adjusting behavior does not always result in superior performance; for example, some people's reactions to failure may result in reduced desire to put oneself in similar circumstances again. The term "learned helplessness" is not uncommon in the ABSEL literature, yet there has been relatively little work done to investigate how students react to negative feedback.

To frame research designed to investigate student reactions to negative feedback, we will draw upon the work of Dweck (1990), who has developed a research stream investigating the differences between those with learning orientations (which have the aim to increase competence) and those with performance orientations (which aim to gain favorable judgments of competence and to avoid unfavorable ones). Dweck's body of work has been discussed in ABSEL (Gentry and Burns 1997; Gentry et al. 2001, 2002; Kwong and Thavikulwat 1988), but only in passing.

As a quick summary, Dweck's work has found that learning-oriented students exhibit strong mastery orientations regardless of their confidence in their present ability, and failure does not keep them from the pursuit of knowledge. They do not perceive that intelligence is a fixed quantity; in fact, their continued growth proves otherwise. Performance-oriented students react very differently to failure, especially if they have little confidence in their

abilities (in which case learned helplessness is a likely outcome). Those with performance orientations and high self-confidence may be mastery-oriented, but failure is not handled in the "trial and error" fashion implicitly assumed by most work on experiential learning.

LEARNING AND PERFORMANCE ORIENTATIONS

Research on motivational goals in an achievement context has identified two different types of underlying goals. One is learning goals, in which people are concerned with increasing their competence. When people are learning oriented, their aim is to increase their competence by learning or mastering a new task (Dweck 1990). Learning goals are also self-referential, focusing on the development of skill and competence relative to the task and one's past performance (Harackiewicz and Elliot 1993). The other goal is performance-oriented, in which people are concerned with gaining favorable judgments of their competence and to avoid unfavorable ones (Diener and Dweck 1978, 1980). Performance goals are concerned mainly with normatively-based standards and promote the demonstration of ability to others (Harackiewicz and Elliot 1993).

It has been argued that these orientations determine whether learning will occur. For example, a learning goal is likely to foster long-term use of learning strategies and a belief that success is related to one's effort. A large body of research (Ames and Archer 1988; Elliott and Dweck 1988; Graham and Golan 1991; Meece, Blumenfeld, and Hoyle 1988; Nolen 1988; Nolen and Haladyna 1990; Stipek and Kowlaski 1989) suggests that the use of effortful and effective learning strategies is associated with goals that emphasize the importance of learning and mastery. Performance-oriented goals foster the use of superficial or ineffective learning strategies. It appears that learning orientations should enhance academic achievement because more effective learning strategies associated with learning goals would increase performance. In fact, Meece and Holt (1993) reported that students who are more learning-oriented showed the most positive achievement profile (relatively high semester grades, test scores, and teacher-rated effort and achievement expectations).

Performance-oriented students may not exert effort to change their study habits if they receive negative feedback because they may tend to attribute failure to the lack of their own ability. In contrast, learning-oriented students may exert effort to improve their study habits even when they encounter negative outcomes and the failure is attributed to their own fault. Learning-oriented people are less likely to stop learning when they obtain either satisfactory or unsatisfactory outcomes. Their actions are less influenced by the outcome of the previous actions. Perhaps the primary concern of learning-oriented people may be the learning process itself. They are more interested in the process of improving themselves than in the immediate outcomes of a certain action (Dweck 1990). In contrast, performance-

oriented people are likely to behave according to immediate outcomes. If they perform poorly, they would exhibit a pattern of helpless behaviors. If they perform well, they would show mastery-oriented behaviors (Dweck 1990). That is, the outcome appears to be the primary concern for performance-oriented people.

Performance-oriented people are interested in the demonstration of ability relative to others, whereas learning-oriented people tend to be self-referenced, focusing on the development of skill and competence relative to the task and their own past performance (Harackiewicz and Elliot 1993). Learning-oriented people track their past performance and keep working on the improvement of their performance. Learning-oriented individuals tend to view unsolved problems as challenges to be mastered through effort. Toward that end, they engage in extensive solution-oriented self-instruction and self-monitoring (Dweck and Leggett 1988). For those with learning orientations, inconsistent feedback may foster intrinsic motivation based on curiosity. Diener and Dweck (1978, 1980) found that 80% of learning-oriented children maintained or improved their problem-solving strategies after failure. Research also indicates that managers who have the ability to learn from experience, not only have learning orientations, but engage in critical reflection, are open to other points of view, feedback, and criticism and take a proactive stance toward problems and opportunities (see Bigelow, 1998).

Performance-oriented people focus only on their present performance relative to others, which is more likely to be inconsistent than performance relative to one's past performance. Meece et al. (1988) found that performance-oriented people tend to be ego-oriented, and are guided to protect their egos. Elliott and Dweck (1988) found that children who focused on performance goals rejected the chance to learn something new if it involved a risk of making errors. Sujan, Weitz, and Kumar (1994) extended this notion by suggesting that those with performance orientations will be reluctant to experiment with new approaches because of a fear that experimentation will result in poor outcomes and, subsequently, in negative evaluations of their abilities and performance. For those with performance orientations, experiencing failure cues low-ability judgments and poses a threat to self-esteem (Dweck and Leggett 1988). Thus, individuals may adopt a more defensive, self-protective posture, devaluing the task and developing disdain toward it (Berglas and Jones 1978; Tesser and Campbell 1983).

Dweck and Leggett (1988) have argued that both situational and dispositional variables play important roles in producing behavior. Dweck (1990) also notes that a person may operate in both systems of learning and performance goals since both goals can be manipulated experimentally (that is, situationally induced). Dweck et al. (1978) and Elliott and Dweck (1988) experimentally induced goals and behavior patterns by manipulating situational variables, but Dweck (Bandura and Dweck 1985; Dweck and Leggett 1988) has also predicted goal choice

TABLE 1
GOALS AND BEHAVIOR PATTERNS IN ACHIEVEMENT SITUATIONS

	Perceived Present	
Goal Orientation	Ability	Behavior Pattern
PERFORMANCE (Goal is to gain positive judgments/ avoid negative judgments of competence)	LOW (Negative feedback on one's competence)	HELPLESS (Avoid challenge; low persistence)
	HIGH (Positive feedback on one's competence)	MASTERY-ORIENTED (Seek challenge; high persistence)
LEARNING (Goal is to increase competence)	HIGH OR LOW (Negative or positive feedback on one's competence)	MASTERY-ORIENTED (Seek challenge that fosters learning; high persistence)

Source: Dweck and Leggett (1988, p. 259)

and behavior patterns by measuring existing dispositional variables.

Henderson and Dweck (1990) tracked children during the transition to junior high school. At the beginning of the seventh grade, children's theories of intelligence and their confidence were measured. Children's grades and achievement test scores from the sixth grade were obtained from their school records. Children with learning orientations tended to match or exceed their projected grade point. Overall, those who had been achievers in sixth grade remained so, and many of those who had been relatively low achievers became high achievers. Of particular interest is that many learning-oriented children with low confidence who had not done especially well in the past were now earning many of the highest grades.

In contrast, performance-oriented children who had been low achievers in the past remained so, and many of those who had been high achievers in sixth grade were now among the lowest achievers. High-confidence performance-oriented children showed the most pronounced decline of any group. Dweck (1990) argues that the challenge and confusion are most threatening to performance-oriented people who believe intelligence is fixed and have been accustomed to thinking of themselves as having it.

The Dweck model is summarized in Table 1.

GOAL ORIENTATIONS AND SIMULATION GAMING

The previous discussion is relatively free of context, but hopefully the reader has noted some possible interfaces with simulation gaming. Most gaming experiences offer students the opportunity to face negative feedback, especially given the bias toward depressed early starting conditions. In fact, Ralph Day, at the first ABSEL Conference, noted that one true advantage of simulation gaming in a pedagogical sense is that it is the only approach that makes students live with their decisions. A student can do a poor job on one case, and then start over fresh on the next one. A very poor simulation decision leaves the student facing an extremely different (and more difficult) set of conditions. The positive implication of this case, and then start over fresh on the next one. A very poor simulation decision leaves the student facing an extremely different (and more difficult) set of conditions. The positive implication of this observation is that students need to get down and dirty and overcome the negative conditions, and that in doing so they encounter a tremendous learning experience. This is no doubt a likely scenario for those students with learning orientations; however, that well may not be case for those with performance orientations. Anyone who administered a game has encountered very frustrated students who do in fact give up; learned helplessness is a reality in this context.

TABLE 2: LEARNING AND PERFORMANCE ORIENTATION SCALE ITEMS		
Learning Orientation		**Performance Orientation**
There really are a lot of new things to learn about marketing.		I evaluate myself using my professors' criteria.
It is important for me to learn from each classroom experience.		It is very important to me that my professors see me as a good student.
An important part of being a good student is continually improving your skills.		I very much want my fellow students to consider me to be a good student.
Learning how to be a better marketer is of fundamental importance to me.		I always try to communicate my accomplishments to my professors.
It is worth spending a great deal of time learning new marketing approaches		I feel very good when I know I have outperformed other students in my class.
I am always learning something new about marketing.		I spend a lot of time thinking about how my performance compares with other students.
Sometimes I put a great deal of effort into learning something new.		
Learning a complicated concept is very satisfying.		
Making mistakes is just part of the learning process.		

The Henderson and Dweck (1990) findings discussed earlier indicate that those with learning orientations but poor prior academic performances were able to handle and grow from challenging experiences associated with the transition to junior high. Those with performance orientations, even if they had excellent prior academic records, fared far less well in handling those challenges. One might infer that students with performance orientations would have been filtered out of the system by the time they reach undergraduate education. However, all of us have encountered many students who evaluate themselves on their performances and downplay issues of personal growth. Given the timing of many first-time simulation experiences (at the transition from large lecture classes focusing on general knowledge to smaller, focused business courses), it is likely that the skills learned in a lecture/test environment may yield a performance orientation unsuited for the need-to-experiment environment found in simulation games.

Thus, we make the following propositions:

Proposition 1: Students with learning orientations will exhibit more learning than students with performance orientations. (main effect of the orientations)

Proposition 2: Those students with learning orientations will exhibit more learning for positive outcomes versus negative outcomes. (effect of the outcome for learning orientation subjects)

Proposition 3: Those students with performance orientations will exhibit more learning for positive outcomes versus negative outcomes. (effect of the outcome for performance orientation subjects)

Proposition 4: Students with learning outcomes who experience negative outcomes will exhibit more learning than students with performance outcomes who experience positive outcomes. (interaction of learning orientation and outcome)

The fourth proposition is the key new one as far as we are concerned, but the others predict the overall pattern of results that we expect.

DATA COLLECTION

Data were gathered from 34 Master's of Business Administration enrolled in a first-year introductory marketing course. By design of the MBA program, none of the students had a business undergraduate degree. The simulation competition used the well-known *Marketing Management Experience* (MME, Dickinson 2002). In the MME students are assigned to manage the marketing function of a simulation company, in the MME case a company marketing digital cameras. As is typical, companies are grouped into industries, with a company competing only against other companies in its same industry. Individual students managed their own company, students having been assigned to companies and industries at random. The competition, then, comprised six industries of four companies each and two industries of five

companies each. The competition lasted nine periods plus an initial trial period. Students were evaluated on the basis of cumulative earnings.

The constructs of learning orientation and performance orientation were measured using multi-item scales adapted from Ames and Archer (1998), nine items for learning orientation and six items for performance orientation (see Table 2). Each Likert-type item was measured on a seven-point Strongly Agree (1) to Strongly Disagree (7) scale. This self-report survey was conducted in class prior to any introduction of the simulation competition.

While the data have been collected, the analyses have not been performed as yet.. We will include the results in our presentation..

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