

Perceived Control in the University Classroom: Subjective Control within an
Attributional Framework

by

Wenda J. Dickens

A thesis
presented to the University of Manitoba
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy
in
Psychology

Winnipeg, Manitoba

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ISBN 0-315-37265-6

PERCEIVED CONTROL IN THE UNIVERSITY CLASSROOM:
SUBJECTIVE CONTROL WITHIN AN ATTRIBUTIONAL FRAMEWORK

BY

WENDA J. DICKENS

A thesis submitted to the Faculty of Graduate Studies of
the University of Manitoba in partial fulfillment of the requirements
of the degree of

DOCTOR OF PHILOSOPHY

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ACKNOWLEDGEMENTS

A great deal time and effort went into writing this thesis, and I would like to acknowledge those people who helped me along the way.

First, I thank my advisory committee, Ray Perry, Rod Clifton, Harvey Keselman, and David Koulack, for their guidance and support during the seemingly endless process. I thank my advisor, Ray Perry, for his patience and commitment to my education, and for providing me with an exceptional graduate training program. He exposed me to a wide variety of academic and intellectual experiences.

Second, I want to thank my family for the love and support they have given me over the course of my graduate training. I thank my parents-in-law, Al and Marian Dickens, for the many hours they put in babysitting while I was working on my dissertation. I thank you for your continued faith in me. I thank my parents, Carl and Anne Bingeman, for instilling in me the desire to pursue my education, and providing me with the knowledge that I could accomplish my goals. Although you were not close by to help out with day-to-day matters, your support was just as important. I thank my children, Claire and Andrew Dickens, for accepting the fact that Mom had to work evenings and weekends, and putting up with the many lost hours.

Finally, I thank my husband, Greg, for his love, support, assistance, and direction throughout my time as a graduate student. I thank you Greg,

for the sacrifices you have had to make so that I could finish my Ph.D. I could not have done it without you Tuk.

I dedicate this thesis to my children, Claire and Andrew. I hope I will instill in you the desire to acquire knowledge, as my parents did for me. I want this thesis to be an example for you that you can accomplish anything if you try hard enough.

ABSTRACT

The purpose of this study was to examine perceived control in the university classroom. Two theories of control, locus of control and learned helplessness, were compared using definitions of subjective perceived control developed from students' classroom attributions. Each definition was analyzed within a classroom framework which included the teaching behavior of instructor expressiveness. Secondary analysis of data from eight experiments was used. The data were collected in a laboratory classroom in which instructor expressiveness and objective contingency were manipulated. Students' responses to attribution questions were used to create the subjective definitions for locus of control and learned helplessness theories. Dependent measures included an achievement test score, an attribution questionnaire, and a question assessing feelings of helplessness. The results indicated that both locus of control and learned helplessness definitions of subjective control had a large impact on students' perceptions of control. Instructor expressiveness effects were tested by comparing low and high expressiveness for each perceived control group. Considering locus of control, internals reported greater perceived control than externals with internal success students having the highest perceived control and external failure students having the lowest. The high expressive instructor improved achievement and lower feelings of helplessness for external failure and internal success students. Locus of control influenced student attributions in one lecture condition. For the learned helplessness model, mastery students reported higher perceptions of

control and a greater sense of mastery than helplessness students. Mastery success and universal helpless students benefited from the high expressive instructor, increasing their achievement performance, and lowering their feelings of helplessness. As well, students who were more successful felt they had more control than less successful students. It was concluded that subjective definitions of control were useful in examining perceived control in the classroom, and that control and success/failure were not independent. The results were discussed in terms of Kuhl's (1981) model of action control, Rothbaum, Weisz and Snyder's (1982) two-process theory of control, and "state" versus "trait" interpretations. Problems associated with secondary analysis of data were also presented.

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INTRODUCTION

Overview

The purpose of this dissertation is to examine students' perceived control in the university classroom using an attributional framework. Attributions are students' causal explanations of their performance and behavior. Perceived control is operationally defined as students' beliefs about their competency and their responsibility for achievement outcomes. Students with high perceived control feel they caused their outcomes to a greater degree and feel more competent than students with lower perceptions of control. What students' perceive to be the causes of their classroom performance is related to their perceptions of control, because if one can cause an outcome, one can also control it.

There is no comprehensive attribution theory to provide a conceptual framework, rather there are several theories of how people arrive at causal explanations, and of what effects the explanations or attributions have on people's feelings and behavior. Weiner's attributional theory of achievement motivation (Weiner, 1979, 1985a) was selected to develop the conceptual framework in this study for several reasons. First, his theory describes the consequences of attributions. The focus of this study is on the consequences of perceived control in the classroom, not on how students form their perceptions of control. Second, the theory examines causes for success and failure in achievement-related situations and has been applied

to various educational problems (Bar-Tal, 1982). Finally, it is a well established theory which has generated a great deal of educational research. Although Weiner's theory provides the conceptual framework, two theories of control, locus of control and learned helplessness, are used to define perceived control. It is felt that utilizing two competing theories provides a broader scope and stronger inference to the study. This study can evaluate the relative advantages and disadvantages of locus of control and learned helplessness within the attributional framework. Platt (1964) suggests that comparing two theories is a stronger and often more parsimonious method of scientific inquiry than trying to disprove one theory or the other.

Both locus of control and learned helplessness theories have been related theoretically and/or empirically to attribution theory (e.g., Abramson, Seligman & Teasdale, 1978; Lefcourt, 1981; Weiner, 1985a; Wong & Sproule, 1984). There are a number of locus of control scales which use attributions to measure the locus of control construct. For example, Lefcourt's (1981) multidimensional multiattributional causality scales for achievement and affiliation (MMCS) consist of two 24-item Likert scales, with items divided into four sets of attributions: stable internal, unstable internal, stable external, unstable external. Another example is Wong and Sproule's (1984) Trent Attributional Profile which measures locus of control with people's responses to attributional causes. Wong used attributions because of the theoretical link between locus of control and perceived causality. Lefcourt (1976) states "It is not the simple registering of success and failure that is pertinent to the generalized expectancy of internal versus external control, but rather it is the interpretation of the causes [italics added] of these experiences" (p. 28).

The interpretation of causes of no control is also important for learned helplessness theory. The current reformulations of the theory are based on attributional processes (Abramson et al., 1978; Weiner, 1985a). According to the revised models, when people find themselves helpless, or out of control, they ask why they are helpless (Abramson, Garber & Seligman, 1980). The attributions people make about the causes of lack of control influence the resulting helplessness deficits. Others have linked learned helplessness with attributional style (e.g., Layden, 1982; Peterson, 1982; Seligman, Abramson, Semmel, & von Baeyer, 1979). Attributional style refers to the persistent manner in which people explain good or bad outcomes, and is related to their likelihood of becoming helpless (Seligman et al., 1979). Individuals who tend to attribute negative outcomes to internal, stable, and global causes and positive outcomes to external, unstable, and specific causes are more likely to exhibit helpless and depressive behaviors (Peterson, 1982). These theoretical and empirical relationships suggest that both learned helplessness and locus of control theories fit within a general attributional framework, and are relevant to the purpose of the study.

Using this framework, the attributional definitions of perceived control were examined by secondary analysis of data from eight independent experiments. The data were collected in a simulated college classroom in which objective contingency was manipulated. Students received contingent, noncontingent, or no feedback about their performance on an aptitude test. This dataset allowed a unique opportunity to examine subjective responses from a large number of students exposed to an objective manipulation of control. In all experiments a teaching behavior, instructor

expressiveness, was also manipulated after students were exposed to the objective contingency feedback. Instructor expressiveness was selected because it has been shown to be an effective teaching behavior for students with high perceived control under some conditions (Perry & Dickens, 1984; Perry & Magnusson, in press; Perry, Magnusson, Parsonson & Dickens, 1986; Perry & Tunna, in press). Thus, the design of the study included subjective control (using two different theoretical attributional definitions) and instructor expressiveness.

The remainder of the introduction is divided into four major sections. The first describes Weiner's theory used in the attributional framework. The second and third sections review the locus of control theory and learned helplessness theory, respectively, and explain how the theoretical definitions fit into the attributional framework. The final section discusses the instructor in relation to perceived control in the classroom.

Attributional Framework

Weiner's theory of motivation and emotion for achievement striving describes a stepwise attributional process.¹ Following an achievement outcome, students perceive the event as a success or failure. Then, an attribution or causal explanation is made to explain why the success or failure occurred. Underlying these causal attributions is a cognitive

¹ Weiner has outlined his theory in a number of articles beginning in 1971 (e.g., Weiner et al., 1971; Weiner, 1974, 1976, 1979, 1985a). Each new discussion builds on the previous articles and as Weiner has said "some new ideas become more firmly fixed, others are discarded and new presumptions take their place, some earlier evidence grows in stature, and other prior data require reinterpretation (Weiner, 1979, p. 3)". Rather than present the evolution of Weiner's theory, this thesis discusses the most recent model published in Psychological Review, 1985.

structure related to expectancy of success, affective responses, and motivation. Expectancy, emotion, and motivation are seen as consequences of the kind of attributions students make, and also influence attributions in new situations.

Perceived Causes for Success and Failure

Once students have defined an outcome as a success or failure, they form an attribution to explain the outcome. Initially, Weiner and his colleagues (e.g., Weiner, 1974; Weiner et al., 1971) proposed four causes that students use to interpret and predict achievement-related situations: Ability, effort, task difficulty, and luck. More recent evidence from laboratory and field research indicates that students do use these four, as well as other causes such as: mood, interest, fatigue, attention, other persons, or preparation (Anderson, 1983; Elig & Frieze, 1979; Frieze, 1976; Weiner, 1985a; Willson & Palmer, 1983). However, the two most dominant causes students use are ability and effort (Bailey, Helm & Gladstone, 1975; Davis & Stephan, 1980; Frieze, 1976; Weiner, 1985a). For example, Frieze (1976) found that 84% of the students used effort as the main cause of success and that 75% of the time, lack of effort was seen as the major cause of failure. In another study, Frieze and Snyder (1980) found that effort (65%) and ability (15%) accounted for 80% of students' causal attributions for test performance.

The results of some field studies investigating university students' attributions about actual exam performance suggest that effort and ability are perceived to be the major causes for success, but not necessarily for failure (e.g., Arkin & Maruyama, 1979; Bailey et al., 1975; Dickens, 1982;

Gilmor & Reid, 1974; Perry, Dickens, & Abrami, 1981). In investigations by Arkin and Maruyama (1979) and Gilmor and Reid (1974), students rated their performance on a classroom examination as a success or a failure and then rated the extent to which the four attributions of ability, effort, task difficulty, and luck determined their performance. Perry et al. (1981) had students rate attributions for their previous successes and previous failures. Consistent across the four studies, effort and ability were considered to be the primary causes for success. For failure outcomes, effort and task difficulty were given equal weighting of importance with minor emphasis given to ability. Students did not consider luck to be related to their exam performance. In another study, students were asked to identify the major cause of their performance on an examination after rating it as a success or failure (Bailey et al., 1975). For students rating their test as a success, 56% chose effort as the primary cause and 24% chose ability. Students felt the major causes for failure were effort (47%) and task difficulty (36%). Very few students saw lack of ability (7%) as the major cause of their failure. Thus, university students use a limited number of causes to explain their achievement outcomes. They tend to attribute their successes and failures mainly to their effort or lack of effort, and only perceive ability to be a major cause of their successes.

Causal Dimensions

The various perceived causes for achievement outcomes are organized into a cognitive structure containing three invariant causal dimensions: locus, stability, and controllability. The taxonomy permits comparisons among attributions and predictions of psychological and behavioral

consequences. Although the dimensions are conceived as invariant, an individual's placement of specific causes within the taxonomy may vary. For example, one person may perceive luck as an external, unstable cause of failure, while another individual believes luck to be an enduring personal characteristic. Thus, the interpretation of specific causes will vary from person to person or over time, but the dimensionality of the causes remains constant.

The first dimension, locus of causality, is derived from Heider's (1958) fundamental distinction between personal and environmental causes, and Rotter's internal-external locus of control dimension. The locus of causes is either within the person (internal) or outside of the person (external). Ability and effort are perceived to be internal causes, and task difficulty and luck are external causes. The locus dimension influences the emotion of pride and feelings of self-esteem. Pride and positive self-esteem are experienced when successful outcomes are attributed to internal causes such as ability or effort, and negative self-esteem is a consequence of attributing negative outcomes to oneself. External attributions for either success or failure would have little effect on pride and self-esteem since these are self-reflective emotions.

Weiner (1979) contends that esteem-related emotions linked with the locus of causality dimension may be central to facilitating or impeding subsequent achievement performance, and thus have greater significance to the individual. Pride in one's accomplishment (greatest for attributions to ability or effort) will be more motivating for future events than general feelings of happiness. In an investigation of student attributions and affect associated with actual classroom outcomes, Forsyth and McMillan

(1981) found a significant outcome by locus of causality interaction on affective measures. Students who attributed their successes internally rather than externally reported more positive affect (relaxed, competent, calm, good, good, adequate). When students felt their failure was due to internal causes, they had lower ratings of personal ability (incompetence, inadequate) than those who believed external causes produced their failure.

The second dimension is labelled stability. Causes such as aptitude, ability, or previous experience remain relatively constant or stable, while others such as effort, attention, luck are unstable and may fluctuate. The stability dimension is primarily related to the magnitude of expectancy change following success or failure. Outcomes attributed to the presence or absence of stable causes produce expectancies for similar outcomes to reoccur. A success would result in high anticipation of future success, and a failure would produce expectations of more failures. Conversely, when attributions are made to unstable and variable causes such as effort or luck, future expectancies are uncertain and may shift away from the outcome. A failure would yield no increments in expectancies of future failures because instability implies the possibility of change.

Thus, causal stability in part determines expectancies regarding future outcomes (Weiner, 1985a). Emotions involving anticipation of goal attainment or nonattainment are influenced by causal stability. For example, it has been found that hopelessness and resignation are elicited given an attribution for a negative outcome to stable causes (Weiner et al., 1976, 1979). That is, if the future is anticipated to remain as bad as the past, then hopelessness is experienced.

In more recent formulation, Weiner (1979, 1985a) includes a third dimension of causality, controllability, which categorizes causes as controllable or uncontrollable.² Causes such as effort or teacher bias are intentional and under volitional control, whereas, luck, mood, or ability are considered uncontrollable causes. The control dimension is related to social judgements, evaluation and liking. A person's inferences about another's controllability of outcomes influences reactions toward the other person. When outcomes are under volitional control, the person is rewarded or liked more, and is more likely to be helped. Emotions, such as, anger, pity, or gratitude, are also linked with control. Weiner labels these as social emotions since they must be considered in a social context. One feels gratitude towards another person not towards oneself. As well, pity involves an emotional reaction to another person's situation. Pity toward a victim is elicited when the cause of the negative outcome is perceived as uncontrollable.

The dimensional location of the perceived cause and whether the outcome was seen as a success or failure predict the consequences of the attribution. For example, the stability dimension influences the subjective expectancy of future outcomes, and is associated with feelings of hopeless and resignation. Failure attributed to stable causes such as ability produces negative affect and expectations of continued poor performance which may be difficult to change. This results in a sense of hopelessness and resignation since no chance of success is expected.

² The controllability dimension is different from Rotter's concept of locus of control. Weiner sees controllability as a separate dimension from locus such that causes can be internal and uncontrollable (e.g., mood, personality) or internal and controllable (e.g., typical effort, exertion).

Ability is an internal and uncontrollable, as well as, stable attribution. The locus dimension is related to self-esteem and pride, while controllability influences social emotions such as shame, guilt, or anger. Finally, expectancy and affect are presumed to influence students' actions (Weiner, 1985a). Thus, attributing failure to ability elicits feelings of low self-esteem and shame, as well as hopelessness. These affective reactions combined with low expectancy of success result in such behaviors as withdrawal which are not instrumental to achieving academic success.

The attributional process as described above, "represents phenomenal causality" (Weiner, 1985a, p. 555). That is, attributional decisions are based on an individual's cognitions and perceptions and may vary from situation to situation, or over time. Because the present study examined the effects of subjective perceptions of control, Weiner's theory was selected because of this cognitive and subjective basis. Earlier other reasons were articulated as to why Weiner's theory was selected. The most important of these is that his theory describes the consequences of attributions rather than the process of how attributions are formed. The focus of this study is on the effects or consequences of subjective control in a university classroom. Weiner has established that people do actively engage in causal thinking (Weiner, 1985b), thus, it is not necessary to examine the process of attribution formation.

Weiner's theory was also selected because it is the one attribution theory that is most relevant to perceived control in the classroom. The theory was developed to explain achievement-striving in success and failure situations which is similar to the process examined in the present study. However, the present study examined achievement striving as a consequence

of perceived control. It is important to note that Weiner's control dimension is not the same as the definition of perceived control used in this study. Weiner's control dimension includes the perspective of other people as well as the student. In this study only students' perceptions of how much or how little control they have over their academic achievement outcomes are of interest. For example, there are no causes that are controllable and external from the students' point of view. However, if the perspective of others is included, causes such as teacher bias or unusual help from others can be considered as external and controllable. Much of Weiner's discussion of the control dimension centers on influences about others and how attributions about someone else's responsibility for success and failure influences the actor's reactions toward that individual (e.g., Weiner, 1979; 1985a). Because the definition of perceived control used in the present study is concerned with students' self-perceptions of control, and includes a sense of competency as well as controllability, it is not equivalent to the attributional dimension of control. Hence, Weiner's theory is useful because of its classroom relevance and its focus on the consequences of attributions, but it does not allow a precise definition of subjective control. For this reason two prominent theories of control, locus of control and learned helplessness, were chosen to define control within the attributional framework. The next two sections present each of these theories and detail their relevance to the purpose of this dissertation and to the attributional theory of achievement motivation.

Locus of Control

Historically locus of control precedes learned helplessness as a theory of control. Since the early work of Phares (1957) and Rotter (1954, 1966), locus of control has been one of the most influential concepts in psychology, generating extensive applications in the psychological and educational literatures. Locus of control was selected because of this widespread acceptance, and the cognitive emphasis of the theory. Lefcourt (1984) states that locus of control is concerned "... with the perceptions of control as a stable cognitive perceptual set that differentiates among individuals" (p. 107). That is, individuals have a certain way of cognitively perceiving their world depending on their locus of control which can influence their expectations or their behavior.

Definition of Construct

Individuals are categorized as either internals or externals depending on the degree to which they accept responsibility for their outcomes. An internal locus of control refers to the belief that positive and negative outcomes are contingent upon one's own action, and therefore, under personal control. External control refers to the belief that outcomes are unrelated to one's own behavior, i.e., determined by factor's beyond one's control. A person with an internal locus of control will have a high expectancy for success and will be likely to exhibit instrumental behaviors such as persistence and attention. Conversely, people who do not assume personal responsibility for their outcomes or do not believe that their behavior can produce successful outcomes will tend to be passive and apathetic. These external individuals will have low expectations for future success and lower perceived control.

Considerable research has established that people do tend to differ in their approach to their environment and interact with it in different ways. Internals tend to be better adjusted than externals, and more able to cope with life. For example, internal individuals tend to have a positive sense of mastery and competency (Wang, 1983); are more likely to find out why they did poorly on a task (Phares, Ritches & Davis, 1968); are less likely to conform (Crowne & Liverant, 1963); and will engage in purposeful activities to remedy social inequities (Gore & Rotter, 1963). See Lefcourt (1976) Palenzula (1984) or Rotter (1966) for more extensive reviews of the locus of control literature. This large amount of locus of control research led early researchers of perceived control in the classroom to utilize this construct. Recently, Stipek and Weisz (1981) reviewed approximately 100 studies on children's perceived control and academic achievement and the majority of the studies used locus of control as the theoretical construct.

Locus of Control and Achievement

Extensive research on locus of control and academic achievement suggests that internal locus of control is positively related to a number of elementary, secondary, and college classroom behaviors such as performance on standardized achievement tests, degree of classroom participation, and ability to delay gratification (Bialer, 1961; Mischel, Zeiss & Zeiss, 1974; Stipek & Weisz, 1981; Wolfgang & Potwin, 1973). Internal students tend to use available information in problem-solving (Davis & Phares, 1967; Phares, 1968), to report better study habits and attitudes (Goldston, Zimmerman, Seni & Gadzella, 1975; Prociuk & Breen,

1974), and to persist in difficult intellectual tasks (Crandall, 1966) to a greater extent than external students. Gifted high school students enrolled in a university precollege program were more internal than external (Douglas & Powers, 1982), as were college students who persisted rather than dropped out (Tomala & Behuniak, 1981). Dickens and Perry (1982) compared the reported classroom behaviors of internal and external students, and found that internal students studied more, took more interest in their psychology course, and had higher perceptions of control over their introductory psychology course than external students. These results suggest that students with an internal locus of control are apt to engage in academic behaviors that will enhance their educational outcomes. They participate more in class, are more work-oriented, show more attentiveness and concentration (deCharms, 1976).

Much of the research on locus of control and academic achievement has been based on locus of control measures that were designed specifically for achievement outcomes, such as the Intellectual Achievement Responsibility Scale (IAR) (Crandall, Katkovsky & Crandall, 1965) or Lefcourt's Multidimensional Multiattributational Causality Scale (MMCS) (Lefcourt et al., 1979). The development of these scales reflect the relationship between locus of control and attributions. These scales measure students' locus of control for achievement outcome using attributional questions which are based on Weiner's locus of causality dimension. According to Lefcourt and others, people's generalized expectancy of internal or external control is dependent on the types of attributions they use to explain their successes and failures. Thus, responses to questions about ability and effort are related to an internal locus of control, and

responses to questions about luck and context (includes task difficulty) are related to an external locus. Others have derived an internality/externality score by subtracting responses to external attributions from responses to internal attributions (e.g., Arkin & Maruyama, 1979; Luginbuhl, Crowe & Kahan, 1975). Here, more positive scores reflect an internal locus and negative scores an external locus.

Recently several studies have examined the relationship among college students' locus of control, attributions, and affect following actual classroom performance using some of these measures (Arkin & Maruyama, 1979; Forsyth & McMillan, 1981; Lefcourt, Martin & Ware, 1984; Luginbuhl, Crowe & Kahan, 1975). The results indicate that the relationship between internality/externality and affect was dependent upon students' performance outcomes. After success, internal students felt more competent and adequate than external students; but following failure, it was external students rather than internal students who responded more positively (Forsyth & McMillan, 1981). Students with the greatest sense of competency and mastery were those who internalized their success, and students with the least sense of mastery were those who internalized failure. Those who externalized their successes and failures fell in between these two extremes.

Locus of Control and Success and Failure

These findings suggest that the valence of the outcome may be related to feelings of control, although Rotter (1966, 1975) does not distinguish between success and failure outcomes in his theory. Theoretically, locus of control implies that students who take responsibility for outcomes (both

success and failure) should have higher perceived control than students who do not accept responsibility for success and failure. But, others have acknowledged that responsibility for success may develop separately from responsibility for failure (e.g., Crandall et al., 1965; Lefcourt, 1980; Marsh et al., 1984), so that locus of control for success should be considered distinct from locus of control for failure. Lefcourt, Martin and Ware (1984) found that students' internality score for successful outcomes was not highly related to their internality score for failure ($r=.37$). Other empirical evidence indicates that students who do take responsibility for success (internal success), or make external attributions for failure, are more mastery-oriented than students who internalized failure (Forsyth & McMillan, 1981). Using a derived attributional measure of internality, Forsyth and McMillan found that students who internalized failure had significantly lower feelings of competency and adequacy than students who felt external factors produced their poor performance.

Thus, students' locus of control for success may not be the same as their locus of control for failure. Not suprisingly, this distinction was also true for students' attributions of success and failure, considering the relationship between locus of control and attributions. Therefore, it is important to examine locus of control separately for success and failure especially when using attributional definitions. Since the definitions are based on students' attributions about a single outcome, statistically independent success and failure groups for internality and externality can be created and compared.

Attributional Definition of Locus of Control

A derived attributional measure of locus of control was used to define the internal and external groups. It was based on the four most frequently used causes for achievement: Ability, effort, task difficulty, and luck. The locus measure was computed by subtracting the sum of the two external causes (task difficulty and luck) from the sum of the two internal causes (ability and effort). More positive scores indicate an internal locus and negative scores an external locus. For example, suppose Student A made the following attributions for her performance: ability=7, effort=9, task difficulty=5, luck=2. Her IE score would be $(7 + 9) - (5 + 2) = 9$, and she would be classified as an internal. Student B attributed her performance as follows: ability=2, effort=5, task difficulty=8, luck=7. Her IE score, $(2 + 5) - (8 + 7) = -8$, would categorize her as an external.

Ronis, Hansen and O'Leary (1983) tested the validity of this locus score by comparing it to a more direct measure of locus which asked subjects if the cause was something inside or outside the person. They found that the two measures correlated significantly, and concluded that the indirect measure of locus based on students' commonsense explanations was valid and paralleled Weiner's theoretical dimension. In the same study a second derived score of stability based on the four attributions was shown to have neither convergent nor concurrent validity. The derived score did not correlate with a direct measure of stability, nor did it correlate as predicted with measures of expectancy change. The criticism that derived scores based on specific attributions are not accurate representations of theoretical attributional dimensions seems to be a valid criticism of the stability score but not of the locus score.

Some have argued that this mathematically derived measure of locus may be inappropriate because it is based on the the assumption that peoples' placement of attributions on causal dimensions is invariant (Ronis, Hansen & O'Leary, 1983; Weiner, 1983). That is, it is assumed that ability and effort are always categorized as internal and task difficulty and luck are always categorized as external. Weiner (1979, 1983) warned that personal interpretations of specific causes may not always follow the theoretical dimensions. For example, some individuals may perceive ability as unstable instead of stable when it connotes skill rather than aptitude, or perceive task difficulty as having an internal component when the difficulty of the task is believed to be related to the person's abilities (i.e., "that test was too hard for me"). However, empirical evidence suggests that people generally perceive ability and effort as internal causes and task difficulty and luck as external causes (Betancourt & Weiner, 1982; Gilmor & Reid, 1979; Meyer, 1980; Willson & Palmer, 1983). Thus, the derived locus score is an adequate representation of the internality-externality of attributions.

In sum, the attributional definitions for locus of control developed in this study were based on students' perceptions of success and failure about their attributions. Success and failure groups were created from students' perceptions of how successful they were on an aptitude test. An IE locus measure was derived from students attributions to categorize them as internal or external. This produced four groups of students: internal success, internal failure, external success, and external failure which were considered to be four separate perceived control groups.

Learned Helplessness

Learned helplessness is the second theoretical orientation used in this dissertation. The learned helplessness model was selected to examine perceived control in the college classroom for three reasons. First, it provides a causal model of control which has been tested extensively in the laboratory. The causal effects of noncontingency on subsequent performance and affect have been replicated in numerous laboratory experiments. Exposure to noncontingent outcomes generally produces performance decrements and negative affect compared to contingent outcomes. Second, it is a cognitive theory which stresses the importance of attributional processes in the development of helplessness effects (e.g., Abramson et al., 1978; Miller & Norman, 1979; Rothbaum, Weisz & Snyder, 1982; Wortman & Brehm, 1975). Students must cognitively perceive the noncontingency or uncontrollability of the situation for deficits to occur. Once the noncontingency is perceived the attributions they make about the causes of lack of control determine the type and severity of deficits they develop. Third, it has been used to explain behaviors in both elementary classrooms (Dweck & Goetz, 1978; Dweck & Licht, 1980; Diener & Dweck, 1978) and university classrooms (Dickens & Perry, 1982; Perry & Dickens, 1984; Perry, Dickens, Abrami & Leventhal, 1978; Perry & Magnusson, in press; Perry, Magnusson, Parsonson & Dickens, 1986; Perry & Tunna, in press; Wilson & Linville, 1982, 1985). Students who are helpless or have low perceived control perform more poorly, have lower expectations for success and lower esteem than nonhelpless students.

Definition of Construct

According to Seligman (1975) and others (Miller & Norman, 1979; Roth, 1980), helplessness occurs when people learn that outcomes are uncontrollable. That is, they perceive there is no causal relationship between their behavior and the outcome, outcomes are noncontingent. Exposure to uncontrollable or noncontingent outcomes leads to a generalized expectation that further responding will be ineffective. This produces motivational, cognitive, and emotional deficits. The motivational deficits are manifested by decreasing response initiation and passivity, the cognitive effects result in difficulty in learning that responding has been successful, and the emotional deficits are characterized by stressful or depressed affect.

The model has been tested in numerous laboratories with college students in which response-outcome contingency was systematically manipulated. The typical helplessness paradigm involves three groups of subjects, contingent, noncontingent, control, participating in a pretreatment and a testing phase. During the pretreatment phase, response-outcome contingency is manipulated. In the testing phase the performance, motivation, and affect of the three groups are compared. Helplessness is demonstrated if the noncontingent subjects manifest the cognitive, motivational and emotional deficits relative to control and contingent subjects. The results of human studies have generally documented the existence of learned helplessness (e.g., Benson & Kennelly, 1975; Glass & Singer, 1972; Hiroto & Seligman, 1975; Krantz, Glass & Snyder, 1974; Rodin, 1976; Roth & Kubal, 1975; but see Hanusa & Schulz, 1977; Roth & Bootzin, 1974; Wortman, Panciera, Shusterman, & Hibscher, 1976

for contrary results). Students exposed to noncontingent outcomes perform more poorly during the test phase and have greater feelings of depression than contingent or control subjects.

A number of reformulations of the original helplessness model have been developed which stress the importance of attributional processes in the development of helplessness effects (e.g., Abramson et al., 1978; Miller & Norman, 1979; Rothbaum, Weisz & Snyder, 1982; Wortman & Brehm, 1975). The model reformulated by Abramson, Seligman and Teasdale (1978) and further elaborated by Abramson, Garber, and Seligman (1980) is used to develop the learned helplessness definition of perceived control in this study because it is the most accepted reformulation and has generated the largest amount of empirical support.

According to the revised model, the attributions people make about the causes of lack of control determine the type and severity of deficits they develop. Abramson et al. (1978) distinguish between personal and universal helplessness on the basis of the locus of causality of the attributions for lack of control.³ In personal helplessness the individual attributes failure internally to insufficient competence (lack of ability), but believes there is a controlling response that other people can produce. Thus, a student experiencing personal helplessness believes he or she failed the exam because of low ability, and believes that other students were capable of passing the exam. Universal helplessness is characterized

³ There are two other dimensions, stability and globality, which are related to the chronicity and generality of the helplessness deficits, respectively. They are not relevant to the present study because the students' attributions were measured only once in a specific classroom situation. Whether the helplessness effects generalize to another situation or are stable over time is not an issue that can be addressed in this study.

by "the belief that an outcome is independent of all of one's own responses as well as the responses of other people " (Abramson, Garber, & Seligman, 1980, p. 11). A student experiencing universal helplessness would attribute his or her failure on the exam to an external cause such as an impossible test or an unfair instructor. Neither attribution, failure due to exam difficulty or failure due to the instructor, reflects on the student's competency.

Seligman (1975) has argued that the theory of human helplessness is useful for understanding a variety of psychological problems. Researchers have applied learned helplessness to diverse areas such as architectural structure (Baum & Valins, 1979; Rodin, 1976), aging (Langer & Rodin, 1976; Schulz, 1980) and intellectual achievement (Dweck & Goetz, 1978; Dweck & Licht, 1980). For example, Baum and Valins (1979) found that the type of dormitory students lived in (long-corridor versus small-suite designs) affected students social interactions and feelings of stress and crowding. Another area of application relevant to this study is learned helplessness and achievement in elementary (Dweck & Goetz, 1978; Dweck & Licht, 1980) and university classrooms (Dickens & Perry, 1982; Perry & Dickens, 1984; Perry et al., 1986; Wilson & Linville, 1982, 1985).

Learned Helplessness and Achievement

Dweck and her associates have used the helplessness orientation to examine the relationship between perceived control, attributions and academic performance change as a reaction to failure in children ages 10 to 12. In the design of her research, Dweck never manipulates response-outcome contingencies. She assumes that failure is an aversive

event and infers children's perceptions of control from their attributions. A consistent finding has been that children's reactions were dependent on their casual attributions for failure and the perceptions of response-outcome contingencies implied by the attributions (Dweck & Goetz, 1978; Dweck & Licht, 1980). Dweck developed a mastery/helpless dichotomy based on attributions to effort and ability. Children labelled mastery-oriented attributed their failure to lack of effort, an unstable controllable cause. As a response to failure, mastery-oriented children increased their effort and concentration employing more sophisticated strategies. Statements by these children indicated that their successes remained very salient to them and reminded them of their capabilities (Diener & Dweck, 1978). In contrast, helpless children attributed their failures to lack of ability, a stable, and uncontrollable cause. After failure, their effort and concentration decreased and problem-solving strategies and performance deteriorated sharply. Verbalizations by helpless children implied they had either forgotten their prior successes or considered them to be unimportant (Diener & Dweck, 1978). They emphasized the uncontrollable nature of the situation.

Dweck's findings suggest a connection between learned helplessness, student attributions and performance at the primary level (ages 10-12), but the findings may or may not generalize to the college classroom. Nicholls (1978) and Weisz and Stipek (1982) have noted developmental changes in attributions and perceived control. For example, younger children may lack the cognitive maturity to understand the concept of control (Frieze, Francis & Hanusa, 1983; Stipek & Weisz, 1981). The student population also varies significantly between the two educational levels. Elementary school

children as a group should be more heterogenous in terms of ability level, past performance outcomes, and perceptions of control than college students. This is because people with low perceptions of control over classroom outcomes are less likely to continue on to college or university (Rotter, 1975). The students in elementary school and university may differ in their attributional processes and their perceptions of control. These differences emphasize the need to examine learned helplessness at the college level.

There has not been as much research on learned helplessness in the university classroom. Some of the research has focused on the classroom consequences of control/no control for college students (Covington & Omelich, 1981; Perry & Dickens, 1984; Perry & Magnusson, in press; Perry et al., 1986; Perry & Tunna, in press). Other researchers have attempted to alleviate some of the deficits produced by noncontingency (Wilson & Linville, 1982, 1985). Covington and Omelich (1981) examined the cognitive consequences of one or more failures in an university course. When students believed the major cause of their failure was uncontrollable (due to lack of ability, incompetence), their cognitive and affective reactions intensified and performance decreased. Students who had an inferior sense of academic ability experienced greater shame and lower expectations for success than high self-concept students, especially after a second failure. Between the first and second exam, students reported an increase in their amount of study (effort). Therefore, after a second failure low ability became more plausible as a cause since trying increased, but the person still failed. The authors reasoned that these students experienced helplessness deficits (increased shame, low expectations for future

success, low performance) because of an inability to protect their sense of personal competency.

Other investigations studied learned helplessness in a simulated college classroom (Perry & Dickens, 1984; Perry et al., 1986). Perry and Dickens (1984) examined the effects of response-outcome contingency training, instructor expressiveness, and incentive on student achievement and attributions. An aptitude test was developed to manipulate response-outcome contingency. After the contingency task, noncontingent students perceived they had less control than contingent students and put more emphasis on external attributions to explain their aptitude performance. Students were then exposed to a videotaped lecture which varied in expressiveness. Noncontingent students were unable to benefit from the high expressive instructor. They did not increase their achievement performance or feelings of self-confidence as did the contingent students. In this study, response-outcome contingency affected the students perceptions of control in the classroom and influenced the impact of instructor expressiveness on students classroom outcomes (achievement, attributions, self-confidence).

Researchers have shown that deficits associated with noncontingency can be changed through intervention programs involving attribution training (e.g., Andrews & Debus, 1978; Chapin & Dyck, 1976; Dweck, 1975; Relich, Debus & Walker, 1986; Wilson & Linville, 1982, 1985). Forsterling (1985) reviewed the attribution training literature and found that the most common intervention procedure was to train helpless students to attribute their failure to lack of effort. When students believed their poor performance was due to an unstable and controllable cause, such as effort, rather than

a stable and uncontrollable cause, such as ability, their performance and persistence improved. It is important to note the connection between attribution retraining procedures and the attributions students make about their classroom performance. Students typically use effort to explain their successes and failures, and use ability to explain only their successes. Thus, the retraining techniques are an attempt to change an atypical attribution (e.g., failure caused by low ability) to a more typical attribution (e.g., failure caused by low effort). The majority of the studies Forsterling reviewed attempted to induce effort attributions for failure, or failure and success. Researchers were aware of the differential effects attributions have depending on whether the outcome was a success or a failure.

Learned Helplessness and Success and Failure

Many researchers have used failure and uncontrollability synonymously (Blaney, 1977; Dweck, 1975; Dweck & Goetz, 1978; Dweck & Licht, 1980; Dweck & Reppucci, 1973). However, Seligman and his colleagues (Abramson et al., 1980; Seligman, 1975) have argued that the two are not synonymous, rather failure is a subset of helplessness. They state, "In general, failure implies that there was a possibility of success (i.e., some responses can produce the desired outcome) and that the unsuccessful attainment of the goal is attributed to internal factors. In this sense failure would ... typify the case of personal helplessness" (Abramson et al., 1980, p.12). They equate failure attributed internally to personal helplessness.

Abramson et al. (1980) further argue that the concept of uncontrollability makes predictions concerning noncontingent success and

failure. However, they never make the predictions explicit about noncontingent success, nor do they distinguish between personal and universal helplessness as a reaction to noncontingent success. The empirical evidence is no clearer on this issue. A few investigations have shown that uncontrollable positive events produce performance deficits of helplessness but not depressed affect (Eisenberger, Kaplan & Singer, 1974; Griffith, 1977). Griffith (1977) found that the noncontingent success and noncontingent failure subjects performed more poorly than contingent subjects on an anagrams task, but both the contingent and noncontingent success groups perceived they had significantly more control than the noncontingent failure group. The perceptions of control for the contingent and noncontingent success groups did not differ. Thus, noncontingent success affected performance but did not affect perceived control. In other experiments noncontingent success did not produce performance or cognitive deficits (Benson & Kennelly, 1976; Dickens, 1981, 1984; Miller & Gold, 1978). Dickens and others (Dickens, 1981, 1984; Perry et al., 1986) found that students receiving noncontingent success on a test felt more in control and more competent than students receiving contingent feedback. There were no performance differences on a subsequent task. Taken as a whole, the results of these studies indicate that exposure to noncontingent success may not decrease people's cognitive perceptions of control.

Dweck and her colleagues have used a different approach to studying the relationship between success and learned helplessness. Utilizing a nonexperimental design, Diener and Dweck (1980) measured mastery-oriented and helpless children's attributions and perceptions of success. The children were classified as helpless or mastery-oriented on the basis of

their responses to a subset of items on the IAR scale (Intellectual Achievement Responsibility Scale, Crandall et al., 1965). The children's attributions and perceptions were measured after a successful outcome and then after a failure outcome. Diener and Dweck (1980) found that following a successful outcome helpless and mastery-oriented children performed the same. However, helpless children underestimated their actual level of performance, and attributed it to external causes such as "I was lucky" or "It was easy". In contrast, mastery children took responsibility for their success ("I was smart", "I am good at this"), and accurately estimated their actual level of success. Thus, when helpless children experienced success they did not perceive themselves to be the cause of their success.

Summarizing the empirical findings, people's perceptions of control and their performance are altered more by exposure to noncontingent aversive outcomes such as failure than by exposure to noncontingent success. Noncontingent success did not appear to negatively affect cognitions of individuals. Reviewing a number of helplessness studies, Miller and Norman (1979) concluded that learned helplessness is produced more reliably from exposure to noncontingent aversive outcomes. As well, Diener and Dweck (1980) have shown that following success, the attributions of people labelled as helpless were different from those labelled mastery-oriented. Helpless individuals believed their success was produced by external causes. These results suggest that attributional definitions might be different for success and failure.

Attributional Definition of Learned Helplessness

The learned helplessness definition of perceived control was also based on attributions about failure and success. Failure and success were treated separately because students' attributions for failure are different from their attributions for success. As well, helpless individuals make different failure/success attributions than nonhelpless individuals. Five perceived control groups were defined, three in response to failure: universal helpless, personal helpless, mastery failure; and two in response to success: success helpless, mastery success. In the failure conditions, the definition focused on the internal/external attributional dimension and the specific attributional causes for failure. Because of the need to distinguish between internal and external causes, the same derived IE score computed for the locus of control definition was used. The universal helplessness group was defined as students who attributed failure externally. Personal helplessness and mastery groups attributed failure internally, but differed as to which specific attribution was perceived to be the major cause of failure. Personally helpless individuals believed the major cause to be lack of ability, an uncontrollable cause, whereas, mastery failure individuals perceived the cause of failure to be lack of effort, an internal, controllable cause.

People with a negative IE score for failure, indicating external attribution, were classified as the universal helpless group. Those with a positive IE score for failure were further divided into personal helpless and mastery failure on the basis of their attributions to ability and effort. Personally helpless individuals perceive their failures to be uncontrollable, so their attributions to ability, an uncontrollable cause,

should be greater than their attributions to effort. Mastery failure students believe the cause of their failure to be controllable. Thus, their attributions to effort, an internal controllable cause, should be greater than their attributions to ability.

Personal and universal helplessness are distinguished from each other not only in terms of the locus of causality, but also in terms of self-esteem. Universal helpless people perceive the situation to be uncontrollable for everyone, so their self-esteem is not threatened. Personal helpless individuals perceive themselves, and more specifically their lack of ability, to be the cause of the uncontrollability. Their self-esteem is threatened since they believe that the lack of control is due to their own incompetence, and that the situation is inherently controllable for everyone else. Both personal and universal helpless groups manifest performance deficits relative to the mastery groups, but differ in their affective reactions.

Under the success conditions no distinction can be made between personal and universal helplessness because perceived success does not typically lower self-esteem. In examining the relationship between attributions and affect, Weiner, Russell and Lerman (1978, 1979) established that people respond to success with a general positive feeling regardless of the specific attributional cause for success. Unexpected success may produce surprise, but never feelings of incompetence or inadequacy (Forsyth & McMillan, 1981; Weiner et al., 1978, 1979). Therefore, only one helpless group was defined in terms of students' attributions for success. Based on the findings of Diener and Dweck (1980) the success helpless group would be those students who did not believe

their successes were under their control. Thus, they would be students who attribute their success externally. The final perceived control group was mastery success. This group included students who attributed their success to internal causes. When people attribute their performance internally, they are taking personal responsibility for their success. As well, esteem-related affects such as pride, competence or confidence are associated with ability and effort attributions for success. Both the attributions and affects imply a sense of mastery in the student.

In reviewing locus of control and learned helplessness, for each of the theories, a theoretical definition of control was presented, the relevant research on control and achievement was discussed, the relationship between each theory and success and failure was described, then the subjective attributional definitions of control were developed. The definitions pertained to personal control, that is, only control from the students' perspective was considered. For locus of control, four perceived control groups were defined: internal success, internal failure, external success, and external failure. There were five perceived control groups using the learned helplessness definition of control: universal helpless, personal helpless, success helpless, and mastery failure, and mastery success. A comparison of the two sets of theoretical definitions is presented in Table 1.

TABLE 1

Comparison of Theoretical Definitions and the Derived Experimental Groups

	FAILURE		SUCCESS	
	INTERNAL	EXTERNAL	INTERNAL	EXTERNAL
LOCUS OF CONTROL	Internal Failure		Internal Success	External Success
LEARNED HELPLESSNESS	Personal Helpless (Ability > Effort)	Mastery Failure (Effort > Ability)	Universal Helpless	Mastery Success
				Success Helpless

Perceived Control and the Instructor

The discussion of perceived control in the classroom focused primarily on the student, however, the teacher is also a significant component of the classroom environment. Under normal classroom conditions the teacher plays an important role, affecting many student outcomes such as performance, motivation, attributions, or self-esteem. Over the course of their university education, students will come in contact with a number of instructors exhibiting a variety of teaching behaviors, and these various teaching behaviors may affect students differently depending on their perceptions of control. For example, students with low perceptions of control may feel even more out of control when confronted with a dull and boring instructor. The same instructor may arouse students having high perceptions of control to change sections to another instructor or seek outside reading or other information sources. In contrast, an exciting and stimulating instructor may help to increase feelings of control in students lacking these feelings. As important as the instructor's contribution is to the classroom, there is little research on the relationship between teaching behaviors and students' perceptions of control in a university setting (Frieze, 1980).

Recently in a laboratory study, Perry and Dickens (1984) investigated the relationship between perceived control and the teaching behavior of instructor expressiveness. They used the laboratory to simulate a college classroom and to manipulate perceived control by manipulating response-outcome contingencies. The results indicated that expressiveness affected students differently depending on the response-outcome contingency feedback they received. Noncontingent-trained students were not affected

by the expressiveness of the instructor. Their performance on an achievement test was comparable whether they received the low or the high expressive instructor. In contrast, the achievement performance of the contingent students was significantly higher following the high compared to the low expressive instructor. These findings suggest that instructor expressiveness is relevant to the study of perceived control in the college classroom. Other research indicates that instructor expressiveness is appropriate because it is applicable to the university classroom and it influences various student outcomes.

Classroom Relevance

Evidence that instructor expressiveness is relevant to the university classroom comes from a number of different sources. First, university students believe that expressiveness or enthusiasm is an important dimension of teaching. In examining students' implicit theories of teaching, Whitely and Doyle (1976) found that in two independent studies, students included expressiveness(enthusiasm) as one of the categories of important teaching behaviors. Students develop implicit theories of what types of teaching behaviors are necessary for quality instruction. Hence, the university students perceived that expressiveness was one aspect of an ideal effective teacher. Field research revealed that expressive teaching behaviors were related to students' perceptions of effective teaching in university lecturers (Murray, 1983a). Murray selected instructors who had consistently received low, medium, or high ratings of overall teaching effectiveness. Trained observers visited classes taught by the instructors and rated the frequency of occurrence of 60 specific teaching behaviors.

Three clusters of teaching behaviors, clarity, enthusiasm, rapport, were found which differed significantly among the three types of teachers. Differences between the teacher groups were largest for expressive behaviors such as: (a) uses humor, (b) moves about while lecturing, (c) shows facial expressions, and (d) speaks expressively or emphatically. The more effective instructors exhibited the more expressive behaviors.

Second, expressiveness and behaviors related to expressiveness, such as enthusiasm, dynamism, warmth, have been identified as replicable dimensions from factor analytic studies of student ratings of instruction (Costin, Greenough & Menges, 1971; Kulik & McKeachie, 1975; Marsh, 1982; McKeachie, Lin & Mann, 1971; Murray, 1983a). When student ratings are analyzed, expressiveness often emerges as a factor related to actual classroom instruction. Marsh (1982) found a factor he called Enthusiasm which described the extent to which students perceived their instructors to display enthusiasm, energy, humor, and an ability to hold their interest. Instructors' self-evaluations were compared to the student ratings, and an identical Enthusiasm factor was found indicating that instructors also believe that enthusiasm or expressiveness is an important dimension of teaching. In another study (Murray, 1983a), Enthusiasm was defined by behaviors such as: speaks expressively, shows facial expressions, moves about while lecturing, uses humor, smiles or laughs, does not read lecture notes verbatim. These two studies indicate that different groups of students and instructors felt that similar behaviors labelled as enthusiasm are important to good university teaching.

Third, expressiveness appears to be a teaching behavior most effective when using the lecture method of instruction. Comparing different

personality styles of college instructors, Murray (1983b) found that extroverted or expressive instructors were most effective when lecturing in large enrollment courses compared to teaching seminar or laboratory courses. In the first two years of post-secondary education most courses have large enrollments. During this period, student behaviors such as failure, apathy, or drop-out also tend to be more prevalent. An ultimate goal of research on perceived control in the college classroom is to identify students with low perceived control who may be at-risk for these behaviors. Therefore, expressiveness is germane to the study of perceived control in the university classroom because it is a teaching behavior that students with low perceived control are apt to come in contact with, and it is a teaching behavior which affects student outcomes.

Teaching Effectiveness and Student Outcomes

Instructional researchers have attempted to identify teaching behaviors which influence student outcomes such as, student achievement, student satisfaction, or student motivation. Frey (1979) states that instructor expressiveness is a beneficial teaching behavior important for effective lecturing. Student learning, student satisfaction, or student motivation can be enhanced by the expressiveness of the instructor. Expressiveness has been found to be an important component of effective college teaching (McKeachie & Kulik, 1975; McKeachie, Lin & Mann, 1971). The impact of expressiveness on student achievement has been examined extensively in a series of controlled laboratory studies on "educational seduction" or the "Dr. Fox effect" (Perry, Abrami & Leventhal, 1979; Perry, Abrami, Leventhal & Check, 1979; Ware & Williams, 1975; Williams & Ware,

1976,1977). The original research was concerned with the criticism that student ratings are affected more by the personality or enthusiasm of the instructor than by the instructor's ability to convey lecture material (Abrami, Leventhal & Perry, 1982). That is, an entertaining, highly expressive instructor may receive favorable ratings while presenting little lecture content.

In the laboratory experiments, instructor expressiveness and lecture content were manipulated under controlled conditions including the random assignment of subjects and the precise measurement of student achievement and student ratings. Expressiveness was operationally defined by the instructor's: physical movement, vocal inflection, humor, and eye contact, (Perry et al., 1979), or enthusiasm (Ware & Williams, 1975). Lecture content was manipulated by varying the number of teaching points covered in the lecture. In general, the research indicates that instructor expressiveness has an impact on student achievement in the college classroom (Perry, 1981; Perry & Dickens, 1984). Abrami, Leventhal and Perry (1982) conducted a meta-analysis of 12 educational seduction studies and concluded that expressiveness had a substantial effect on student ratings and moderate effect on achievement. Expressiveness accounted for 4.3% of the achievement variance across all studies, however, in four of the studies, it accounted for approximately 9% of the variance. Students exposed to a high expressive instructor expressed greater satisfaction with the lecture and scored higher on the achievement test than students receiving a low expressive lecture.

Dickens and Perry (1982) found that expressiveness also affected student attributions consistently across four studies. Using multivariate analyses, an attribution profile emerged which suggested an internal locus.

Attributions of students in the high expressive conditions emphasized their ability and effort and de-emphasized the influence of luck compared to students' attributions in the low expressive conditions. The high expressive instructor fostered greater feelings of responsibility for classroom outcomes in students than did the low expressive instructor. Thus, instructor expressiveness appears to be an effective teaching behavior in that it affects students' achievement performance and sense of achievement responsibility. Instructor expressiveness was selected as the teaching behavior of interest in this study because of its relevance to the university classroom and its impact on student outcome variables.

Research Questions

The purpose of the present study was to examine the relationship between instructor expressiveness and students' subjective perceptions of control. Data were combined from eight laboratory studies that measured students' attributions and perceived control in response to an objective manipulation of contingency. The data were reanalyzed using subjective definitions of control, defined in terms of locus of control and learned helplessness theories. The effects of instructor expressiveness on the different perceived control groups were then examined. Within this framework, several research questions can be addressed.

The first question is does subjective control influence student outcomes such as achievement or attributions? A subjective rather than objective measure of control or contingency may provide a more accurate understanding of the process of perceived control in the classroom. The data from the laboratory studies provide an opportunity to examine this

issue. Other investigators have examined students' perceptions of control as a reaction to actual achievement outcomes (e.g., Arkin & Maruyama, 1979; Covington & Omelich, 1981), or hypothetical achievement outcomes (Luginbuhl et al., 1975), but none have examined subjective perceptions of control as a response to an objective manipulation of control. In this study, students' causal attributions about their aptitude test performance can be considered to be a reaction to a manipulation of control and a reaction to actual test outcomes.

A second research question concerns how students with varying perceptions of control are affected by the instructor? Students exposed to different objective response-outcome contingency feedback were found to react differently to the expressiveness of the instructor (e.g., Perry & Dickens, 1984; Perry et al., 1986). It was expected that students with different subjective perceptions of control would also react differently to instructor expressiveness, but not necessarily in the same fashion. Frieze (1980) suggests that students' attributions may be affected by other people such as the teacher or other students. For example, the student may perceive the teacher as another cause of his or her performance - the instructor was unfair and set an extremely hard exam. In this study it was not possible to examine how the instructor affected students' perceptions of control because the attributions which determined their perceived control were measured before students were exposed to the lecture. But, it was possible to determine how the instructor affected achievement attributions of students with different perceptions of control.

A third issue is the question of the relationship between control and success. Is the perception of control dependent on success or failure on a

task, or do students form perceptions of control independent of task outcome? Certain theoretical viewpoints argue that perceived control will be similar for success and failure outcomes (e.g., Abramson et al., 1978; Rotter, 1976). Others suggest that people's perceptions of control following failure will not be the same as their perceptions of control after successful outcomes. Recent research results tend to support the latter view (e.g., Betancourt & Weiner, 1982; Lefcourt et al., 1984; Marsh et al., 1984). Some attribution researchers (e.g., Frankel & Snyder, 1978; Snyder, Stephan & Rosenfield, 1978) have argued that following experience with uncontrollable outcomes students tend to attribute success to internal causes and attribute failure to external causes. Students are much less apt to assume personal control for failure than for success in order to protect their self-esteem. These findings suggest a relationship between perceived control and success.

In sum, the research questions of interest in this study are:

1. Does subjective control influence classroom outcomes such as achievement performance and attributions?
2. Does instructor expressiveness interact with subjective control to influence post-lecture outcomes?
3. What is the relationship between perceived control and perceived success?

Theory Comparison

The second major purpose of this study was to compare the two theories of perceived control: learned helplessness and locus of control. The

theory comparison focused on the personal helplessness and mastery failure groups. Under the locus of control definition these two groups were considered to be a single group - internal failure. Under the learned helplessness definition they were not only two different groups, but one was a mastery group and one was a helpless group. The other groups under both theories were similar, but have different labels (see Table 1). It should be noted that the predicted ordering of the similar groups was not always identical for each theory. However, the major difference between the two theories focuses on the internal failure - personal helpless/mastery failure distinction. The learned helplessness theory predicts that the personal helplessness and mastery failure groups would be significantly different because one is a mastery group and one is a helpless group. Locus of control theory predicts that the personal helpless and mastery failure would not be significantly different because they are theoretically the same group.

PREDICTIONS

Stage One: Validity of Definitions

Locus of Control

The locus of control definition consisted of four groups: internal success, internal failure, external success, external failure. These four groups were derived from two variables, locus (internality-externality) and perceived outcome (success-failure). It was predicted that internal and successful students should have higher perceptions of control than external and failure students. Internal success students should have the greatest sense of control because they have an internal locus and are successful. Conversely, external failure students should have the least sense of control because of their external orientation and their failure. The predicted ordering of the four groups was: [internal success $\geq$ internal failure] $>$ [external success $\geq$ external failure]. This was tested by a series of contrasts: (a) internal vs external, (b) internal success vs internal failure, and (c) external success vs external failure. The first contrast tested the overall difference in perceived control between internal and external students, i.e., the difference between (internal success plus internal failure) and (external success plus external failure). The second and third contrasts examined differences between success and failure for internal and external students, respectively. The relationship between control and success was examined by a fourth a priori contrast: (d) success vs failure, which indicated if successful students

have higher perceived control than nonsuccessful students regardless of their locus of control.

Learned Helplessness

The learned helplessness definition of perceived control includes five groups: personal helpless, universal helpless, success helpless, mastery failure, and mastery success. Helplessness theory predicts that the mastery groups should have greater perceived control than the helpless groups. Although the theory makes no specific predictions about the the mastery groups, it was expected that success may have a facilitating effect, so that mastery success students may report greater perceived control than the mastery failure students. According to Abramson et al. (1980) there should be no differences in perceptions of control among the three helpless groups. They emphasize (a) "that the cognitive and motivational deficits are hypothesized to occur in both personal and universal helplessness (Abramson et al., 1980, p. 16)"; and (b) that noncontingent success can produce the same cognitive and motivational deficits as noncontingent failure.

These theoretical predictions were tested by a series of contrasts: (1) mastery vs helpless, (2) mastery success vs mastery failure, (3) personal helpless vs universal helpless, (4) success helpless vs universal helpless, and (5) success helpless vs personal helpless. The last three contrasts address two important theoretical questions. First, are cognitive deficits the same for personal and universal helpless groups as Abramson et al. (1980) claim? Second, is there a relationship between success and perceived control? In response to the control question

measured after the aptitude test the differences among the groups should be as follows: [mastery success $\geq$ mastery failure] > [personal helpless = universal helpless = success helpless].

Stage Two: Perceived Control in the Classroom

Locus of Control

In this section predictions are presented for student achievement, the helpless/confident question, and the post-lecture attribution profile. The same four contrasts used to test the predicted order of groups at stage one were also used for all measures at stage two. The variable of instructor expressiveness was added, so that expressiveness effects were tested by comparing low and high expressiveness for each of the groups.⁴ The term "expressiveness effects" refers to a significant difference between low and high expressive conditions.

Student achievement. Based on both theory and empirical findings, it was predicted that internals and success students would score higher than externals and failure students on the achievement test. It was anticipated that in each locus condition (internal and external) the successful students would score higher than the failure students (i.e., internal success > internal failure; external success > external failure). Expressiveness effects were predicted for the internal success, internal failure, and external success groups, but not for the external failure group. Theoretically, the two internal groups are similar to the

⁴ Predictions were not made for the expressiveness main effect because this effect has already been tested in each of the eight studies, and was therefore, not of interest in this study.

contingent students in Perry and Dickens (1984). For the external success group, the success on the aptitude test is expected to have a greater effect on the student than their external locus. The outcome of the aptitude test is more specific to the achievement test than the person's generalized expectancy of external control. Thus, external success students should be able to benefit from the achievement-enhancing properties of the high expressive instructor. Students in the internal success, internal failure, and external success groups were predicted to score higher on the achievement test, and to take advantage of the benefits of a high expressive instructor.

Helpless/confident question. Both internals and success students are predicted to feel less helpless about their achievement-test performance than externals or failure students. Empirical evidence suggests that there should be significant differences among the four groups. In one study (Forsyth & McMillan, 1981), there was a significant locus by outcome interaction on two affective measures of competence and adequacy. Students who internalized their failure reacted more negatively while those who felt their good performance was due to internal causes felt the most competent and adequate. Individuals who externalized their success reported significantly more positive affect than those who externalized and internalized their failure. It is unclear if the pattern of results will be the same for the helpless-confident question as that reported by Forsyth and McMillan, but the findings indicate the potential for significant differences. Expressiveness effects are predicted for internal and success students, but not for external and failure students.

Attribution profile. A multivariate effect of locus on the attribution profile was expected. Theoretically, the locus variable should produce an internality-externality dichotomy in the students' post-lecture attributions.⁵ Expressiveness effects are not discussed for the attribution profile because the multivariate comparisons become very complex. As well, multivariate comparison procedures are too conservative when only a small subset of all possible comparisons is of interest (Stevens, 1973).

Learned Helplessness

In this section predictions are presented for student achievement, the helpless/confidence question, and the post-lecture attribution profile. Under each measure, predictions are made for the effects of the perceived control variable and the expressiveness variable. Expressiveness effects were analyzed by comparing low and high expressiveness for each of the five perceived control groups.

Student achievement. The achievement test is a performance measure, and according to learned helplessness theory the performance of the three helpless groups should be significantly worse than the mastery groups. As well, the three helpless groups should not differ in their performance. The mastery success students may score higher than the mastery failure students because of the possible facilitating effect of success. The

⁵ The correlation between the post-contingency attributions which are used to define subjective perceived control and the post-lecture attributions is not high. A correlation between the IE score (ability + effort - task difficulty - luck) and a similar composite computed on the post-lecture attributions (post-lecture ability + post-lecture effort - post-lecture task difficulty - post-lecture luck) was only 0.13. Thus, students are not simply making the same attributions for their achievement performance as they did for their aptitude test performance.

ordering of the perceived control groups for achievement test performance should be as follows: [mastery success $\geq$ mastery failure] > [personal helpless = universal helpless = success helpless].

It was expected that the difference in achievement scores between the high and low expressiveness groups would be significant for the two mastery groups, but not for the three helpless groups. This is based on the findings from Perry and Dickens (1984) that noncontingent students were unable to benefit from the achievement-enhancing effect of the high expressive instructor. There were no significant differences in achievement performance between noncontingent students who viewed a high expressive instructor and noncontingent students who viewed a low expressive instructor. In contrast, the high expressive instructor compared to the low expressive instructor, increased achievement performance for the contingent-trained students. It should be noted that Perry et al. (1986) found a significant expressiveness effect for the noncontingent low failure group. It is uncertain whether the success helpless group is equivalent to the noncontingent low failure students. Therefore, there may or may not be a significant expressiveness effect for success helpless students.

Helpless/confident question. According to helplessness theory, personal and universal helpless individuals differ in their affective reaction to lack of control. Personally helpless people react with feelings of less confidence and esteem because they perceive themselves (their ability) to be the cause of the uncontrollability. Universal helpless individuals do not react with negative affect because they perceive the situation to be

uncontrollable for everyone, therefore, the loss of control does not reflect on them personally. It was also predicted that the success helpless and the two mastery groups would have greater feelings of confidence than the personal helpless group. The mastery groups may report greater feelings of confidence than the universal helpless and success helpless groups because of their greater perceptions of control. Helplessness theory does not predict whether there will be any differences among these four groups (mastery success, mastery failure, universal helpless, success helpless) in feelings of confidence. The theory specifies only that the personal and universal helpless groups should differ in confidence. Thus, the predicted order of significant differences between the groups was: [mastery success = mastery failure] > [universal helpless = success helpless] > personal helpless.

In previous research (see summary of results in Description of Studies section), expressiveness increased feelings of confidence in students. That is, students exposed to the high expressive instructor reported greater feelings of confidence about their achievement test performance than students receiving the low expressive lecturer. It was predicted that high expressiveness would increase feelings of confidence compared to low expressiveness for all groups except the personal helpless group. Theoretically, this group should have the lowest self-esteem and feelings of competence, so personally helpless individuals are unlikely to benefit from the expressiveness of the instructor.

Attribution profile. The four post-lecture attributions were analyzed multivariately, so predictions are made concerning the attributions as a

set. A multivariate effect of perceived control on attributions was predicted. The contingency manipulation did not have a significant multivariate effect on the post-lecture attribution profile in any of the eight studies. However, the effect was predicted in this study because both the attributions and perceived control variables are subjective measures.

METHOD

This dissertation examined the effects of subjective perceived control in the college classroom through secondary analysis of data from eight experimental studies. In the eight experiments, response-outcome contingency and instructor expressiveness were manipulated in a laboratory simulation of a college classroom. Cognitive measures were taken as a reaction to the contingency manipulation, and it is these measures (attributions, perceived success, perceived control) which were utilized to compare two theoretical perspectives of perceived control. In this chapter the sample and the variables are described.

The following section presents a summary of the studies that compose the data bank. The basic research paradigm is outlined, the commonalities and differences of the studies are described, and a general summary of results is presented. All studies were conducted at the University of Manitoba in the Instructional Research Laboratory using introductory psychology students as subjects. A more detailed description of each study can be found in Appendix A.

Basic Research Paradigm

All experiments followed the same basic two phase sequence, contingency manipulation and classroom simulation. An outline of the basic research paradigm is presented in Table 2. In the first phase contingency was manipulated using an aptitude test. The test consisted of verbal

TABLE 2
Basic Design for Laboratory Research

Phase 1: Contingency Manipulation

Contingent	Noncontingent	No Feedback

Measures: Perceived Control

Perceived Success

Attributions about Aptitude

Test Performance

(Ability, Effort, Test Difficulty, Luck)

Phase 2: Classroom Lecture Presentation

	Low Expressiveness	High Expressiveness
Contingent		
Non-Contingent		
No Feedback		

Measures: Achievement Test Score

Attributions about Achievement

Test Performance

(Ability, Effort, Test Difficulty, Luck)

Helpless/Confident Question

analogies, sentence-completion, and quantitative questions similar to those found on the Graduate Record Exam and the Miller's Analogies Test. Contingency was manipulated by giving students either contingent or noncontingent feedback on the aptitude test. Special multiple-choice answer sheets were designed with four alternatives per question. Feedback about each alternative in the form of a "C" (correct response) or an "X" (incorrect response) was printed invisibly on the answer sheet using a spirit chemical carbon. Students selected an alternative, marked it with a special pen and received immediate feedback as to whether the response was correct or incorrect.

The contingent answer sheet contained response alternatives labelled accurately, i.e., correct alternatives were labelled "C" and incorrect alternatives were labelled "X". Students in the contingent group obtained a "C" when they selected the correct alternative. The noncontingent answer sheets contained certain questions with all the alternatives marked with a "C" and the remaining questions had all the alternatives marked with an "X". The number of questions with all four response alternatives designated "C" varied from study to study. The number of correct responses that noncontingent students received was determined by the answer sheet and not by their ability to answer the questions. For certain questions, selecting any of the four alternatives resulted in a "C" answer, and for the remaining questions selecting any of the four alternatives resulted in an "X" answer. At the completion of the aptitude test students completed a contingency task attribution questionnaire. The questionnaire measured students' perceptions of control and success and causal attributions about their aptitude test performance. Students rated how much control they had

over their aptitude performance and how successful they felt about the aptitude test. Students then indicated to what extent each of four causes (ability, effort, test difficulty, luck) determined their aptitude test performance.

The second phase of the experiment was the classroom lecture simulation. The teaching behavior was introduced at this point. All subjects viewed one of a number of 25-minute videotaped lectures which varied on instructor expressiveness. The lecture topics were sexrole stereotyping and repression. A psychology professor made the presentation from actual lecture notes to maintain consistency of lecture content. Expressiveness was manipulated by varying the voice inflection, physical movement, eye contact, and humor of the instructor. These behaviors were maximized for high expressiveness and minimized for low expressiveness. The lectures were presented with an Advent 1000A Videobeam Color Projection Unit on to a 2.2 meter (seven-foot) diagonal screen.

After the lecture students completed an achievement test, an attribution questionnaire, and an affective question. The test consisted of 30 multiple-choice items based on the lecture material and was designed to assess retention and conceptual understanding. The attribution questionnaire contained the same four attributions used for the contingency task: ability, effort, test difficulty, luck, however, students made attributions about their achievement test performance. Students then responded to a bipolar adjective scale indicating how helpless or confident they felt about their achievement test performance.

Commonalities and Differences

The core research design varied from experiment to experiment, however, there were two independent variables common to all studies: objective response-outcome contingency and instructor expressiveness. The studies varied in two ways. The independent variables were different from study to study, and the number and/or format of the dependent measures could change from one study to the next. Studies conducted within the same academic year employed the same dependent measures. Table 3 lists the core dependent measures for all studies. Perceived control, perceived success, attributions, and achievement were measured in every study. Attributions about aptitude and achievement performance included ability, effort, test difficulty, and luck. Some studies also included affective measures. A detailed description of the measures for each study can be found in Appendix A. Various student, teacher, and classroom variables were included as independent variables in the eight studies. Table 4 provides a list of the different independent variables used in each study. A description of how variables other than expressiveness and objective contingency were manipulated is presented in the abstract of each study listed in Appendix A.

TABLE 3

Core Dependent Measures used in all Studies

Phase 1: Contingency Manipulation

1. How much CONTROL did you have over your successes and failures on the aptitude test?
2. How SUCCESSFUL did you feel at the end of the test?
3. How much did your ABILITY determine your performance?
4. How much did your EFFORT to solve the questions determine your performance?
5. How much did the DIFFICULTY OF THE TEST determine your performance?
6. How much did LUCK determine your performance?

Phase 2: Classroom Lecture Presentation

1. Achievement test score based on the lecture, maximum=30
2. How much did your ABILITY determine your performance?
3. How much did your EFFORT determine your performance?
4. How much did the DIFFICULTY OF THE TEST determine your performance?
5. How much did LUCK determine your performance?
6. How did you feel about your achievement performance?
Helpless/confident

TABLE 4
Independent Variables for each Study

- Study 1: Objective Contingency Manipulation (contingent, noncontingent,
no feedback)
Instructor Expressiveness (low, high)
Amount of Exposure (short, medium, long)
- Study 2: Objective Contingency Manipulation (contingent, noncontingent,
no feedback)
Instructor Expressiveness (low, high)
Student Incentive (low, high)
- Study 3: Objective Contingency Manipulation (contingent, noncontingent,
no feedback)
Instructor Expressiveness (low, high)
Attributional Locus (internal, external)
- Study 4: Objective Contingency Manipulation (contingent, noncontingent)
Instructor Expressiveness (low, high)
- Study 5: Objective Contingency Manipulation (contingent,
noncontingent-medium, noncontingent-high)
Instructor Expressiveness (low, high)
Lecture Content (low, high)
- Study 6: Objective Contingency Manipulation (contingent, noncontingent)
Instructor Expressiveness (low, high)
Students' IAR score (internal, external)
- Study 7: Objective Contingency Manipulation (contingent, noncontingent)
Instructor Expressiveness (low, high)
Student Expectations
- Study 8: Objective Contingency Manipulation (contingent, noncontingent)
Instructor Expressiveness (low, high)
Students' Ethnic Background (English, Ukrainian, Chinese, Italian)

Summary of Results

The following section provides a general summary of the results of the studies composing the data bank. The results of one of the studies, Perry and Dickens (1984) are presented in more detail as an example of actual results. This study was selected because it utilized a relatively simple design, it was the first in the series of the eight studies, and the results are available in a refereed journal. The design included three independent variables: contingency training (contingent, noncontingent, no feedback); student incentive (low, high); and instructor expressiveness (low, high). The dependent measures included the basic measures outlined in Table 3. The effects of the contingency manipulation on perceived control, success, and the attribution profile are presented first. The post-lecture results of contingency and instructor expressiveness on student achievement, affect, and attribution are summarized next.

Post-contingency results. The perceived control and perceived success questions were included as checks of the contingency manipulation. Across the studies, the noncontingent students reported lower perceptions of control than contingent students. Generally, the contingent and noncontingent subjects did not differ in their perceptions of success, which indicates that students were responding to differences in contingency rather than differences in reinforcement. The post-contingency attribution profile was analyzed with a multivariate analysis of variance followed by a discriminant function analysis (DFA) on significant effects. In most studies the contingency main effect was significant. The DFA suggested an internal locus of causality with contingent subjects showing a more

internal locus in their causal attributions. The consistency of results across the eight studies was striking. Contingent students generally reported greater perceived control and took more personal responsibility for their aptitude test performance than noncontingent students.

More specifically, the results of the Perry and Dickens (1984) study were similar to the general pattern of results. Contingent students ($M=6.20$) and no-feedback students ($M=6.13$) perceived they had greater control over their contingency task performance than did noncontingent students (2.44). There were no significant differences in students' perceived success among the three groups (means were 5.39, contingent; 4.99 no feedback; 4.36, noncontingent). Incentive had no effect on perceived control or perceived success, either as a main effect or as an interaction. The only significant multivariate effect on the attribution profile was a contingency main effect. The structure correlations for each attribution were: 0.87 for ability, 0.81 for effort, 0.66 for task difficulty, and 0.25 for luck. This suggests an internal locus or mastery-orientation represented by high loadings on the internal attributions of effort and ability and some emphasis on the difficulty of the contingency task. The groups centroids indicated that contingent ($M=3.40$) and no-feedback students ($M=3.67$) had a greater mastery orientation than did the noncontingent students ($M=2.11$).

Post-lecture results. In the classroom simulation phase, instructor expressiveness had a consistent effect on student achievement, feelings of helplessness, and achievement attributions. The high expressive instructor enhanced student achievement, decreased feelings of helplessness, and

increased internal locus in students compared to the low expressive instructor. The achievement-enhancing effects of expressiveness were not evident for all students, though. Generally noncontingent students were unable to benefit from the instructor's expressiveness. Their achievement performance was not enhanced when they had the high expressive lecture. The achievement of contingent and sometimes no-training and no feedback students increased under high expressive conditions compared to low expressive conditions.

In the Perry and Dickens study there were a number of significant effects on the post-lecture measures. Contingency feedback, incentive, and instructor expressiveness all had significant main effect on achievement, $F(3,290) = 6.78, p < .01$ $F(1,290) = 11.30, p < .001$ $F(1,290) = 23.49, p < .001$, respectively. However, these effects were qualified by a significant three-way interaction, $F(3,290) = 3.97, p < .01$. Subsequent analyses of the contingency training by incentive by expressiveness interaction revealed that the high expressive instructor, compared to the low expressive instructor increased achievement for contingent students under low incentive conditions and for no feedback students under high incentive conditions. The achievement performance of the noncontingent students was not enhanced under either incentive condition.

For the helpless/confident question, a significant contingency by incentive by expressiveness interaction, $F(3,280) = 5.67, p < .001$, again qualified the significant main effect of expressiveness, $F(1,280) = 14.24, p < .001$. Under conditions of low incentive, the high expressive instructor reduced feelings of helplessness for the contingent students. For high incentive, no effects were evident. A contingency training by

incentive by expressiveness MANOVA on the attribution profile, indicated significant effects for: instructor expressiveness, $F(4,286) = 6.23$, $p < .001$; student incentive, $F(4,286) = 3.32$, $p < .01$; and contingency x incentive x expressiveness, $F(12,7756.98) = 2.97$, $p < .001$. Discriminant function analysis on the three-way interaction produced one significant function with high loadings on ability (.76) and effort (.79), a moderate, negative loading on luck (-.35), and a small loading on task difficulty (.11). The function was described as an internal locus orientation because of the high positive loading on effort and ability, and the negative loading on luck. The group centroids revealed that the high expressive instructor compared to the low expressive instructor increased internal locus for contingent and noncontingent students under low incentive, and increased no-feedback students' internal locus under high incentive conditions.

Data Sample

The data from eight independent studies⁶ were combined to create a potential sample size of 2139 subjects (see Appendix A for details of each specific study). All studies used the same contingency and expressiveness manipulation and the same basic format for the dependent measures. The dependent measures were essentially equivalent from one study to another, although in some studies the dimension of the measurement scale varied from

⁶ When students were recruited for experimental participation within the same academic year they were advised that they could participate in only one of the studies conducted in that year. It is assumed, therefore, that each student did not participate in more than one experiment. Studies conducted in different academic years would sample from a different pool of students since all students were recruited from introductory psychology classes.

a 9-point (1-9) to a 10-point scale (0-9, 1-10), or the order in which the questions were measured varied.⁷ All dependent measures were adjusted so that they had the same scale of measurement (e.g., 9-point scales transformed to 10-point scales; 0-9 scales changed to 1-10 scales). Independent variables, such as instructor expressiveness, were recoded if necessary so that the values would indicate equivalent group membership (i.e., 1=low expressiveness, 2=high expressiveness).

Other variables were created to provide information concerning when the data were collected: year; semester; which of the eight studies the data came from; whether there were additional independent variables; and which lecture topic was presented in the classroom simulation phase. These additional variables were not of theoretical or empirical interest to the research questions, but were included to test the internal validity of the combined dataset. For example, "OTHER" was created to indicate the absence or presence of other independent variables in the research design. In study 1, amount of exposure to the contingency task was an additional independent variable, and in study 2 the additional variable was incentive. In each instance, OTHER would be coded the same because both studies

⁷ The order in which the post-contingency perceived control, perceived success, and attributional questions were measured was different in studies 7 and 8. The post-contingency results from these two studies were not as consistent as the previous six studies. Because the post-contingency questions were used to define the subjective control groups in this thesis, it was decided to conduct the analyses with and without the data from studies 7 & 8 and compare the findings. The results and interpretation of results were equivalent regardless of whether data from studies 7 and 8 were included or not. As well, only the data from studies 7 and 8 were analyzed. These results differed slightly, but only for the post-contingency perceived control measure. The overall perceived control effect was not as large and fewer specific contrasts were significant. The stage two, or post-lecture analyses, did not differ. Therefore, data from studies 7 and 8 were included because there were no significant differences in results when these data were excluded.

included an additional variable. The variables created were: OTHER, 0=absence, 1=presence; SEMESTER, 1=fall, 2=winter; YEAR, 1=1980, 2=1981, 3=1982, 4=1983; DSET, 1=study 1, 2=study 2, ..., 8=study 8; and LECTOP, 1=sexroles lecture, 2=repression lecture.

Variables

After the data were combined the students were categorized into perceived control groups on the basis of the two theoretical definitions of control. This entailed a two-stage process. First, students were categorized as successful or unsuccessful based on their response to the perceived success question about their aptitude test performance: How successful did you feel at the end of the test? Not at all successful/Very successful. Students with scores 4 or lower were labelled as failure students, and students with scores of 7 or greater were categorized as success students. Subjects with success scores of 5 or 6 were deleted.

Perceptions of success were used rather than actual test performance because cognitive aspects of control and success were being examined in this study, and actual test scores for noncontingent subjects would not provide any differentiation among students. Noncontingent subjects' test scores were determined by the special answer sheet, not by their actual performance level. In two studies, students' aptitude test scores were unavailable. Finally, researchers have found that experimenter-defined success based on actual performance does not correspond highly to students' subjective success ratings (Elig & Frieze, 1979). In a number of field studies the correlations between college students subjective ratings of success and actual exam outcomes ranged from .33 (Arkin & Maruyama, 1979)

to .57 (Gilmor & Reid, 1979). After dividing students into successful and unsuccessful groups, the specific theoretical control groups were formed.

Perceived Control

Locus of control. Students' internality-externality (IE) scores were computed from their causal attributions about their aptitude test performance. Task difficulty and luck (external attributions) were subtracted from ability and effort (internal attributions): $IE\ score = Ability + Effort - Task\ Difficulty - Luck$. Scores above zero were categorized as internal scores below zero were categorized as external. Students with a zero IE score were deleted since a zero indicates neither internal nor external attributions.⁸ A total of 869 students were deleted because their IE score was 0, because their perceived success score was 5 or 6, or both. Thus, the perceived control variable using a locus of control definition had four levels: internal success, internal failure, external success, external failure.

Learned helplessness. There were five theoretically defined perceived control groups, three in terms of attributions about failure: universal helpless, personal helpless, mastery failure; and two in response to

⁸ It should be noted that other values were considered as cutoffs for the IE score ($-1 > IE > 1$) and the perceived success score ($3 \geq Success \geq 8$). These more extreme values were initially selected to ensure significant differences between the internal and external groups and the success and failure groups. However, they were subsequently abandoned because too much data were lost resulting in some very small and discrepant sample sizes. The results of the analyses using the more extreme values and the more liberal values were essentially equivalent. The numbers changed, but the interpretations remained the same. Therefore, the less extreme values were selected to ensure the largest sample size possible.

success: success helpless, mastery success. According to the theoretical definition persons in the universal helplessness group attribute their failure externally to causes such as luck or task. Both personal helplessness and mastery people attribute failure internally, but personal helplessness individuals believe the cause is lack of ability (uncontrollable cause), whereas, the mastery individuals perceive the cause to be lack of effort (controllable cause). The same internality score computed for locus of control was used in the learned helplessness definition.

Individuals with a negative IE score (external attributions for failure) were classified as universal helpless. Internals (positive IE score) were further divided to differentiate between personal helplessness and mastery on the basis of their attributions to the internal causes of ability and effort. The relative magnitude of ability and effort attributions were compared. Individuals who assigned a larger value to ability than effort (ability > effort) were classified as personal helpless, and those who assigned a larger value to effort (effort > ability) were classified as mastery failure students. Personal helpless individuals believe that the cause of their failure is uncontrollable, so their attributions to ability, an uncontrollable cause, should be greater than their attributions to effort. In contrast, mastery students perceive their failures to be controllable. Their attributions to an internal controllable cause, effort, should be greater than their attributions to ability. Again, individuals with a IE score of zero were deleted, along with internals who attribute failure equally to ability and effort (effort = ability). A total of 951 subjects were lost because their IE score was

0, their ability and effort attributions were equal, or their perceived success score was 5 or 6. There were two perceived control groups defined in terms of attributions for success. The success helpless group was composed of students who attributed their success externally, i.e., those successful students with a negative IE score. The final group, mastery success, included students who attributed their success to internal causes (positive IE score).

Expressiveness

The teaching behavior of instructor expressiveness was the second independent variable. Twenty-five minute color videotaped lectures on the topics of sexrole stereotyping and repression were used which differed systemically in instructor expressiveness (low, high). Expressiveness was manipulated by varying the voice inflection, eye contact, humor, and physical movement of the instructor. Decreased frequencies of these behaviors represented the low expressiveness condition and increased frequencies defined the high expressiveness condition. A psychology professor made the presentation from actual lecture notes. Content was equated across conditions by using only high content videotapes from previous research (Perry, Abrami, Leventhal & Check, 1979, study 2). In one study content was manipulated, but only students receiving the high content lecture were selected. Student achievement is an important dependent measure in the study and since the achievement scores are influenced by the lecture content level, only subjects receiving the high content lecture were used.

Dependent Measures

There were six dependent variables common to all eight studies. These included an achievement test, an attribution profile consisting of four attributions (ability, effort, task difficulty, luck) related to the achievement test, and a question on students' feelings of helplessness. The achievement tests were composed of 30 multiple-choice questions designed to assess both retention and conceptual understanding of the lecture. The questions on the achievement tests were specific to the lecture content, resulting in one test for each of the two lecture topics. The maximum score was 30 for both tests, but the average performance score on each test was not necessarily the same. The tests were constructed independently with no attempt to equate the level of difficulty between the two tests. For the attribution profile, students rated the extent to which each factor determined their achievement test performance (Not at all/Entirely). A 10-point bipolar scale was used to assess students' feelings of helplessness about their achievement test performance (1=helpless, 10=confident).

RESULTS

In presenting the findings of the study this chapter is divided into three major sections. The first section discusses the validity of combining the eight experiments. The next two sections describe the results of the analyses for the stage one and stage two comparisons, respectively. The stage one comparisons examined the two theoretical attributional definitions of control as models of perceived control. At stage two, the definitions were analyzed as models of perceived control in the university classroom.

Internal Validity of the Dataset

Although the data were collected in controlled laboratory experiments, combining the data from the eight studies and defining groups in terms of subjective responses are quasi-experimental procedures. It is important, therefore, to consider possible threats to the internal validity of the dataset. Internal validity refers to the "validity with which statements can be made about whether there is a causal relationship from one variable to another in the form in which the variables were manipulated or measured" (Cook & Campbell, 1979, p.38). Cook and Campbell (1979) list a number of potential threats to internal validity such as maturation of subjects, the number of times responses are measured, selection, or imitation of treatments, to name a few.

Maturation of subjects is a threat when there is a possibility of the subjects growing older, more experienced, etc. between the pretest and the posttest. In the laboratory studies each dependent variable was measured only once, so there were no pretests. Thus, maturation of subjects, and the number of times variables (responses) were measured are not applicable as possible threats of the internal validity of the dataset. Imitation of treatments refers to situations where treatments involve informational programs, and treatment groups are able to communicate among themselves. Subjects in one group learn of the information intended for the other group, therefore, invalidating the experiment because differences among groups disappear. This situation is not applicable to the present dataset because the "subjects" were data from previous experiments and no treatments were implemented.

Selection, or differences between the kinds of subjects in one group as opposed to another, appears to be the main potential threat. Assigning subjects from eight different studies to perceived control groups on the basis of subjective responses allows for the possibility of differences between the groups due to some unrelated variable such as the study from which the data came. For example, there are two different lecture topics in the combined dataset. The proportion of students writing the sexroles test compared to the repression test may differ among the perceived control groups. If one achievement test were easier than the other, achievement scores in the perceived control groups could differ simply because more subjects in one group wrote the easier test. Achievement test scores would be confounded by lecture topic differences.

Initially five possible variables were considered which might threaten the internal validity due to selection bias. These were: OTHER, the presence or absence of other independent variables; SEMESTER, the semester in which the data were collected; YEAR, the year in which the data were collected; DSET, which of the eight studies the data came from; and LECTOP, the topic of the lecture and corresponding achievement test. It was thought that the presence of other independent variables in the research design might either attenuate or accentuate students' subjective control if those variables had a large impact on control. Students' responses collected in the winter semester may be different from data collected in the fall semester. Students who volunteer for experiments early in the year may differ from students volunteering later in the academic year on some unspecified psychological characteristic which influences their subjective perceptions. As well, the students may differ in their experiences in other psychological experiments which may affect their subjective reactions in the experiment. There may be variations from year to year in the subject pool population, the procedures for conducting the laboratory experiments, or the experimenters who collected the data which influence the students' responses. These same possible causes can vary from study to study, as well as from year to year. Finally, the post-lecture dependent measures were specific to the topic of the lecture, i.e., the achievement test was based on the lecture material. Students might respond to the sexroles lecture differently than to the repression lecture. Thus, the lecture topic was considered as a potential threat.

The variables SEMESTER, YEAR, DSET, and LECTOP were highly intercorrelated. The correlations among all variables are presented in

TABLE 5
Intercorrelations Among Variables

	SEMESTER	YEAR	DSET	LECTOP
OTHER	.169	-.003	-.002	-.269
SEMESTER		.734	.753	.830
YEAR			.982	.839
DSET				.827

N=2139

Table 5. Because of the intercorrelation only two of the variables, YEAR and LECTOP were considered. YEAR was selected rather than SEMESTER or DSET because it seemed to provide the most appropriate unit of analysis. Studies that were conducted within the same year always used the same dependent measures, followed the same basic procedures, and were conducted by the same cadre of experimenters. SEMESTER with only two levels did not provide enough distinction, and DSET provided too fine a distinction among the groups. Some degree of variability in the data was considered acceptable because one purpose of the study was to combine a number of experiments to form a larger, more variable population of students' perceptions of control. This left three variables as potential threats, LECTOP, OTHER, and YEAR.

LECTOP was included for two reasons even though it correlated highly with YEAR. First, it would not be used in examining possible threats to validity of the stage one comparisons. The stage one comparisons examined the post-contingency perceived control measure which students respond to before the lecture is introduced. Therefore, LECTOP would not be an appropriate variable to test at stage one. Second, the achievement test is the major dependent measure of theoretical interest because it is a performance measure. There is a separate test for each lecture topic, so it is important that no differences arise in achievement test scores due to combining the two different tests. The achievement test is also important because students respond to the other post-lecture measures (feelings of helplessness, attributions) in reaction to their achievement test performance.

The possible effects of the three variables were tested in two stages. First the effects of OTHER and YEAR were tested on the post-contingency measures: perceived control and the IE score. The perceived control measure is the dependent variable analyzed in the stage one comparisons, and the IE score is the combined attributional score used to define the internality/externality dichotomy. LECTOP was not included since control and IE attributions were measured before the classroom simulation phase. An additive analysis of variance model (OTHER, YEAR) was used because both levels of OTHER (0,1) were not combined with each level of YEAR (1, 2, 3, 4), hence there was no interaction term. The second stage entailed testing the effects of OTHER, YEAR, and LECTOP on the post-lecture measures.

The results indicated no significant effect for OTHER on both the perceived control measure, $F(1,1265) < 1$, and the IE score, $F(1,1265) < 1$. YEAR had a significant effect on perceived control, $F(1,1265) = 4.29$, $p < .005$, but not on the IE score, $F(1,1265) = 2.35$, $p > .05$. In examining why perceived control would differ from one year to the next, it was determined that the amount of noncontingent failure varied from year to year. That is, noncontingent students received different levels of failure on their aptitude test depending on which year the study was conducted. In year one the amount of noncontingent failure was 75%, year two it was 50%, and years three and four it was 40% and 24%.

It was hypothesized that perceived control might be related to the actual level of success such that more successful students had higher perceptions of control regardless of the contingency of the outcome. Note, that this refers to objective success which differs from perceived success. This relationship might explain the effect of YEAR on perceived control

since the overall level of success for students increased from year one to year four. An analysis of covariance (ANCOVA) with aptitude test score as the covariate was conducted on the perceived control measure for all subjects (contingent, noncontingent, no feedback). OTHER was not included in the ANCOVA design because of the previous nonsignificance. Controlling for students' aptitude test score, YEAR no longer had a significant effect on perceived control, $F(1,1076) = 1.37, p > .20$. From these results it was concluded that the data sample was internally valid in terms of examining the post-contingency measures: perceived control, and IE score.

The next stage was to examine the effects of OTHER, YEAR, and LECTOP on the post-lecture measures. Since YEAR and LECTOP were highly correlated ($r=.84$) it was mathematically impossible to include all three variables in the analysis at once. Instead the data were analyzed twice using two separate designs, OTHER and YEAR, and OTHER and LECTOP. OTHER did not significantly affect any of the post-lecture measures: achievement, $F(1,2134) = 1.85, p > .17$; helpless/confident, $F(1,2122) < 1, p > .80$; attribution profile, $F(4,2125) = 1.23, p > .20$. Both YEAR and LECTOP had a significant effect on the post-lecture measures. For achievement the results were: YEAR, $F(3,2134) = 29.03, p < .001$, and LECTOP, $F(1,2136) = 71.29, p < .001$. For helpless/confident the results were: YEAR, $F(3,2122) = 10.34, p < .001$, and LECTOP, $F(1,2124) = 18.07, p < .001$; and for the attribution profile they were: YEAR, $F(12,6381) = 16.24, p < .001$, and LECTOP, $F(4,2127) = 28.46, p < .001$.

It was decided to analyze the post-lecture data separately for each lecture topic because of the significant LECTOP effect and because there were two separate achievement tests. The significant YEAR effect was

relevant only to the second lecture topic, repression. The first lecture topic, sexrole stereotyping, was just used in year one. The repression lecture was used in years two, three, and four, so the potential for variation due to year of study was applicable only to the repression topic. The effects of YEAR were examined by including it as a variable in the design. When added to the design, YEAR did not have a significant effect as a main effect or in interaction with other variables (i.e., YEAR X EXPRESSIVENESS). Therefore, it was concluded that analyzing the post-lecture measures separately for each lecture topic was a sufficient procedure for controlling extraneous variation.

Rationale for Major Analyses

Analysis of variance (ANOVA) was used to test the theoretical predictions because specific group comparisons had been predicted. Defining the groups in terms of subjective responses resulted in very unequal group sizes. When sample sizes are unequal the problem of heterogeneity of variance becomes more acute. The actual level of significance will be different from the nominal level when variances are quite heterogeneous (Rogan & Keselman, 1977). To determine if variance heterogeneity would be a problem in this study, a test for homogeneity of variance using the Bartlett-Box statistic from the SPSS-X MANOVA procedure was conducted on all dependent measures. If the tests were significant ($p < .20$), then a coefficient of variation was computed to assess the degree of heterogeneity (Rogan & Keselman, 1977; Rogan, Keselman & Breen, 1977). A more liberal α level, .20 instead of the conventional .05, was selected to ensure against falsely deciding that the variances were not heterogenous, i.e., a type II error.

The homogeneity of variance tests were significant for the post-contingency control measure and the achievement test score under the sexroles and repression lecture conditions. None of the tests on the other dependent measures were significant (all p 's > .20). Coefficients of variation were computed for the dependent measures of control and student achievement to determine the degree of variance heterogeneity present. The values of the coefficients were: .24 for control, .26 for achievement-sexroles and, .18 for achievement-repression. According to Rogan and Keselman (1977) these values indicate a relatively small degree of variance heterogeneity. The effect of variance heterogeneity is to produce a discrepancy between the actual and nominal levels of significance. The actual level will exceed the nominal level (a liberal test) when the smaller samples have the larger variances, and the actual level will be less than the nominal level (a conservative test) when smaller samples are drawn from more homogeneous populations (Box, 1954). Because the relationship between the sample size and size of the variance in the present study fell in between these two extremes, and the degree of variance heterogeneity was small, it was concluded variance heterogeneity would not have an adverse effect on the significance level of the F -test and standard ANOVA procedures could be used.

The level of significance was set at $\alpha = .001$ for all ANOVA effects and all a priori contrasts. Such a conservative level was used because when the sample size is so large, the statistical tests are powerful enough to detect as significant very small differences. For univariate analyses, omega-squared values were computed to indicate the magnitude of the significant effects (Hays, 1973). A multivariate measure of explained

variance, eta-squared, was computed for multivariate tests of significance (Serlin, 1980). An omega-squared or eta-squared value less than .030 was considered too small to be of practical significance. Therefore, an effect was considered significant when the probability was less than .001 and ω^2 or η^2 was greater than .030.

Stage One Comparisons

The stage one comparisons on the perceived control measure were designed to evaluate the two attributional definitions of control. The extent to which each definition corresponded to the predicted ordering of the group means gave some indication of the validity of the theoretical definitions of perceived control. The locus of control model is discussed first followed by the learned helplessness model. Both predicted and actual group differences are presented.

Locus of Control

It was predicted that internal and successful students should have higher perceptions of control than external and failure students, and that internal success and external failure students should report the greatest and least sense of control, respectively. The predicted ordering of the four groups was: [internal success $\geq$ internal failure] > [external success $\geq$ external failure]; which was tested by a series of contrasts: (a) internal vs external, (b) internal success vs internal failure, and (c) external success vs external failure. Within this set of contrasts, the first contrast tested the overall difference in perceived control between internal and external students, and the second and third contrasts examined

differences between success and failure for internal and external students, respectively. The relationship between control and success was examined by a fourth a priori contrast: (d) success vs failure, which indicated if successful students have higher perceived control than nonsuccessful students regardless of their locus of control.

An overall Locus of Control analysis of variance (ANOVA) was computed, and the pre-planned comparisons were programmed using the SAS GLM procedure. The results showed a significant locus of control main effect on perceived control, $F(3,1265) = 103.42$, $p < .001$, $\omega^2 = .19$. The perceived control means and standard deviations are presented in the upper half of Table 6. Internals ($M = 6.19$) reported greater perceived control than externals ($M = 4.63$), $F(1,1265) = 54.04$, $p < .001$, $\omega^2 = .034$; and successful students ($M = 6.71$) felt more in control than failure students ($M = 4.68$), $F(1,1265) = 147.98$, $p < .001$, $\omega^2 = .093$. Internal success students had greater perceptions of control than internal failure students, $F(1,1265) = 109.90$, $p < .001$, $\omega^2 = .067$; external success students reported higher perceived control than external failure students, $F(1,1265) = 55.32$, $p < .001$, $\omega^2 = .034$.

Consistent with locus of control theory, internal students felt more in control than external students. However actual outcome, success or failure, had a larger effect on perceived control. The success-failure contrast accounted for 9 % of the variance, whereas, the internal-external comparison explained 3.4 % of the variance. For both internal and external students, perceptions of success and failure influenced their perceptions of control. Internal students (and external students) who felt successful had higher perceived control than internals (and externals) who felt

unsuccessful. The magnitude of this effect was larger for internals, accounting for 6.7% of the variance, than for externals, accounting for 3.4% of the variance. The results suggest that the attributional definition of perceived control derived from the locus of control theory is valid as a model of perceived control. But, the results also indicate that perceived success may modify students' perceptions of control.

TABLE 6

Comparison of Perceived Control Means and Standard Deviations for the Locus of Control and Learned Helplessness Models

LOCUS OF CONTROL

	Internal Success	Internal Failure	External Success	External Failure
Mean	6.96	5.23	5.91	4.20
S.D.	1.97	2.26	2.82	2.35
n	421	336	130	382

LEARNED HELPLESSNESS

	Mastery Success	Mastery Failure	Personal Helpless	Success Helpless	Universal Helpless
Mean	6.96	5.19	5.29	5.91	4.20
S.D.	1.97	2.36	2.05	2.82	2.35
n	421	171	83	130	382

Learned Helplessness

In general, mastery students were predicted to have greater perceptions of control than helpless students. The three helpless groups, personal helpless, success helpless, and universal helpless, should not differ in perceived control according to helplessness theory. The two mastery groups, mastery success and mastery failure, may or may not have different perceptions of control in that success may influence perceived control. The predicted ordering of the groups was: [mastery success $\geq$ mastery failure] > [personal helpless = success helpless = universal helpless]. These predictions were tested by the following five contrasts: (a) mastery vs helpless, (b) mastery success vs mastery failure, (c) personal helpless vs universal helpless, (d) success helpless vs universal helpless, and (e) success helpless vs personal helpless.

An overall Learned Helpless ANOVA indicated a significant learned helplessness main effect on perceived control, $F(4,1182) = 77.10$, $p < .001$, $\omega^2 = .20$. The perceived control means and standard deviations for the learned helplessness model are presented in the bottom half of Table 6. As predicted, mastery students ($M = 6.46$) reported significantly higher perceived control than the helpless students ($M = 4.72$), $F(1,1182) = 38.46$, $p < .001$, $\omega^2 = .03$. Mastery students who were successful had greater perceptions of control than mastery failure students, $F(1,1182) = 74.31$, $p < .001$, $\omega^2 = .05$. Contrary to predictions, there were significant differences among the three helpless groups in their perceptions of control. Success helpless students reported greater perceived control than universal helpless students, $F(1,1182) = 55.30$, $p < .001$, $\omega^2 = .04$. Personal and success helpless groups did not differ significantly in

perceptions of control, $F(1,1182) = 3.78$, $p > .001$, $\omega^2 = .002$, nor did personal helpless and universal helpless, $F(1,1182) = 15.83$, $p < .001$, $\omega^2 = .01$.

Theory Comparison

According to helplessness theory personal helpless students should have significantly lower perceptions of control than mastery failure students. Personal helpless students attribute their failure to an uncontrollable, stable cause, ability; whereas, mastery failure students attribute their poor performance to a controllable and unstable cause, effort. Locus of control theory, on the other hand, considers the two groups to be equivalent because both groups of students attribute their failure to internal causes. The personal helpless vs mastery failure contrast was not significant, $F(1,1182) < 1$, $p > .75$. The two groups did not differ in their perceptions of control, thus providing support for the locus of control position.

The consistency between predicted and actual stage one outcomes was higher for the locus of control theory than for the learned helplessness theory. Learned helplessness theory accurately predicted that, in general, mastery students have higher perceived control than helplessness students. However, the perceptions of control for the helpless groups were inconsistent with predictions. First, there were significant differences among the helpless groups. Second, personal helpless and universal helpless students perceived they had as much control over their aptitude test performance as the mastery failure students.

Stage Two Comparisons

The second stage of comparisons examined the theories as models of perceived control in the university classroom. The focus was on how well the theory explained the effects of students' perceptions of control on their classroom behaviors in relation to instructor expressiveness. Different measures were used in the second stage. These were students' performance on the achievement test, their feelings of helplessness and their attributions about their achievement test performance. Predictions were made about the effects of perceived control and instructor expressiveness on these post-lecture measures. Expressiveness effects were tested by comparing low and high expressiveness for each perceived control group. The locus of control model is presented first followed by learned helplessness. Under each theoretical model the results are described sequentially by the dependent measures and separately for each lecture topic.

Locus of Control

Student achievement. The student achievement means and standard deviations for the sexroles and repression lectures are presented in Table 7. Previous research (e.g., Perry & Dickens, 1984; Perry et al., 1979) has indicated that high expressiveness has an enhancing effect on achievement compared to low expressiveness, although this effect does not hold for all students. Students exposed to a noncontingent failure feedback were unable to benefit from instructor expressiveness. It was predicted that expressiveness effects would not be significant for students expected to

have lower subjective perceived control, i.e., external students. The effects of perceived control on student achievement were examined in two ways. First, the same four a priori comparisons were made on the locus of control groups, (a) internal vs external, (b) internal success vs internal failure, (c) external success vs external failure, and (d) success vs failure. Second, expressiveness effects were tested by comparing high versus low expressiveness for each of the four perceived control groups.

For the sexroles data, a Locus of Control by Expressiveness ANOVA indicated a significant main effect of expressiveness, $F(1,434) = 48.60$, $p < .001$, $\omega^2 = .091$ on student achievement,⁹ but not for locus of control, $F(3,434) = 5.89$, $p < .001$, $\omega^2 = .029$. Internal students ($M = 19.83$) did not score significantly higher on the sexroles exam than external students ($M = 18.64$), $F(1,434) = 4.32$, $p < .038$, $\omega^2 = .007$. None of the other three comparisons were significant: internal success vs internal failure, $F(1,434) = 6.55$, $p < .011$; external success vs external failure, $F(1,434) < 1$, $p > .10$; success vs failure, $F(1,434) = 2.60$, $p > .10$. Significant differences between low and high expressiveness were found only for external failure students, $F(1,434) = 20.79$, $p < .001$, $\omega^2 = .039$ (external success students, $F(1,434) = 13.12$, $p < .001$, $\omega^2 = .024$; internal success, $F(1,434) = 12.29$, $p < .001$, $\omega^2 = .022$; internal failure, $F(1,434) = 11.72$, $p < .001$, $\omega^2 = .021$).

⁹ As noted previously (p. 44) predictions were not made concerning the expressiveness main effect. This effect has been examined in detail in each of the eight studies, and discussion would, therefore, be redundant. The results are mentioned for completeness and to give an indication of the overall magnitude of effect for the laboratory studies.

TABLE 7

Means & Standard Deviations for Post-Lecture Measures: Locus of Control Model

SEXROLES LECTURE

	Internal Success		External Success		Internal Failure		External Failure	
	LE	HE	LE	HE	LE	HE	LE	HE
<u>Achievement</u>								
Mean	19.11	21.68	15.38	21.61	16.97	20.55	16.57	20.03
S.D.	5.35	4.81	6.06	2.77	4.98	3.68	4.94	4.35
n	96	74	13	18	36	47	67	91
<u>Helpless/Confident</u>								
Mean	6.32	7.83	4.92	7.44	5.65	7.04	4.76	6.86
S.D.	2.49	2.20	3.09	2.28	2.29	2.17	2.41	2.47
n	95	71	13	18	34	46	67	90
<u>Ability</u>								
Mean	5.94	7.19	3.23	7.33	5.72	6.64	5.06	6.16
S.D.	2.55	2.06	2.59	2.00	2.55	2.65	2.39	2.11
<u>Effort</u>								
Mean	6.53	6.99	3.46	6.67	6.14	6.58	5.35	6.19
S.D.	2.20	2.14	2.33	1.85	2.46	2.21	2.43	2.24
<u>Task Difficulty</u>								
Mean	5.84	6.37	3.85	5.67	5.69	6.62	5.61	5.91
S.D.	2.03	2.26	2.85	2.77	2.07	2.04	2.07	2.04
<u>Luck</u>								
Mean	4.31	2.45	6.23	3.72	3.86	2.98	4.21	3.26
S.D.	2.83	1.52	3.30	2.27	2.11	2.36	2.29	2.22
n	95	73	13	18	36	45	66	88

Table 7 Continued

REPRESSION LECTURE								
	Internal Success		External Success		Internal Failure		External Failure	
	LE	HE	LE	HE	LE	HE	LE	HE
<u>Achievement</u>								
Mean	16.53	20.09	16.12	18.39	15.52	18.93	15.05	18.42
S.D.	4.23	4.76	4.11	4.51	4.16	5.11	4.12	4.28
n	119	133	50	49	131	122	116	108
<u>Helpless/Confident</u>								
Mean	5.01	6.52	5.44	6.71	5.30	6.48	5.04	5.94
S.D.	2.29	2.15	2.40	1.88	2.00	2.04	2.10	2.16
n	117	132	49	49	129	123	113	107
<u>Ability</u>								
Mean	5.34	6.88	5.62	6.34	5.30	6.56	4.89	6.08
S.D.	2.55	2.16	2.57	2.40	2.47	2.26	2.39	2.20
<u>Effort</u>								
Mean	6.41	7.19	6.89	7.25	5.75	6.79	5.92	6.44
S.D.	2.33	1.93	2.08	1.80	2.30	2.23	2.21	2.18
<u>Task Difficulty</u>								
Mean	6.43	6.88	7.05	7.32	6.18	6.77	6.41	6.40
S.D.	2.54	2.25	2.25	2.14	2.34	2.02	1.99	2.09
<u>Luck</u>								
Mean	5.36	4.15	5.20	4.77	4.74	3.85	5.03	4.39
S.D.	2.64	2.32	2.84	2.69	2.50	2.21	2.66	2.48
n	117	130	50	48	131	119	112	107

For the repression achievement test there was a significant main effect for expressiveness, $F(1,820) = 88.93$, $p < .001$, $\omega^2 = .092$, but not for locus of control, $F(3,820) = 5.31$, $p < .001$, $\omega^2 = .013$. Again, internal students ($M = 17.79$) did not perform better than external students ($M = 16.85$), $F(1,820) = 5.36$, $p < .02$, $\omega^2 = .005$. Nor were any comparisons among the four perceived control groups significant: internal success vs internal failure, $F(1,820) = 7.44$, $p < .01$, $\omega^2 = .007$; external success vs external failure, $F(1,820) < 1$, $p > .10$; success vs failure, $F(1,820) = 5.75$, $p < .02$, $\omega^2 = .006$. Significant expressiveness effects on achievement were found for internal success students, $F(1,820) = 40.11$, $p < .001$, $\omega^2 = .041$, for internal failure students, $F(1,820) = 37.11$, $p < .001$, $\omega^2 = .038$, and for external failure students, $F(1,820) = 31.89$, $p < .001$, $\omega^2 = .032$, but not for external success students, $F(1,820) = 6.41$, $p < .012$, $\omega^2 = .006$.

The student achievement results were somewhat unexpected. There were no significant performance differences between internal and external students on either exam. It had been anticipated that students expected to have higher perceptions of control such as internal success, internal failure, and possibly external success would perform better with the high expressive instructor compared to the low expressive instructor. For the sexroles lecture, only external failure students improved their performance in the high versus low expressive lecture. All students except external success students benefited from the high expressive repression lecture.

Helpless/Confident. The means and standard deviations for this question are found in Table 7. Theoretically, significant differences in feelings of helplessness were expected between internals and externals. Based on

previous findings (Perry & Dickens, 1984) expressiveness effects on feelings of helplessness were also predicted for internal students. For the sexroles lecture, the Locus of Control by Instructor Expressiveness ANOVA indicated a significant locus of control main effect, $F(3,426) = 7.52$, $p < .001$, $\omega^2 = .039$; and expressiveness main effect, $F(1,426) = 42.31$, $p < .001$, $\omega^2 = .08$. There were no differences in feelings of helplessness between internal and external students, $F(1,426) = 6.08$, $p < .014$, or internal success and internal failure students, $F(1,426) = 4.90$, $p < .03$, external success and external failure students, $F(1,426) < 1$, $p > .10$, or success and failure students, $F(1,426) = 3.64$, $p < .06$. Expressiveness effects were significant for internal success students, $F(1,426) = 16.32$, $p < .001$, $\omega^2 = .031$ and external failure students, $F(1,426) = 29.48$, $p < .001$, $\omega^2 = .057$. Expressiveness effects were not found for external success students, $F(1,426) = 8.40$, $p < .004$, $\omega^2 = .015$, nor internal failure, $F(1,426) = 6.67$, $p < .01$, $\omega^2 = .011$.

In the repression lecture condition, the Locus of Control by Expressiveness ANOVA indicated only an expressiveness main effect, $F(1,810) = 57.16$, $p < .001$, $\omega^2 = .063$. Again there were no differences among the four groups. Expressiveness effects were only significant for internal success students, $F(1,810) = 31.29$, $p < .001$, $\omega^2 = .034$. (internal failure students, $F(1,810) = 19.15$, $p < .001$, $\omega^2 = .020$; external failure, $F(1,810) = 9.76$, $p < .002$, $\omega^2 = .001$; external success, $F(1,810) = 8.75$, $p < .003$, $\omega^2 = .009$). That is, the high expressive instructor reduced feelings of helplessness about the achievement test performance for internal success students (sexroles and repression test) and for external failure students (sexroles test).

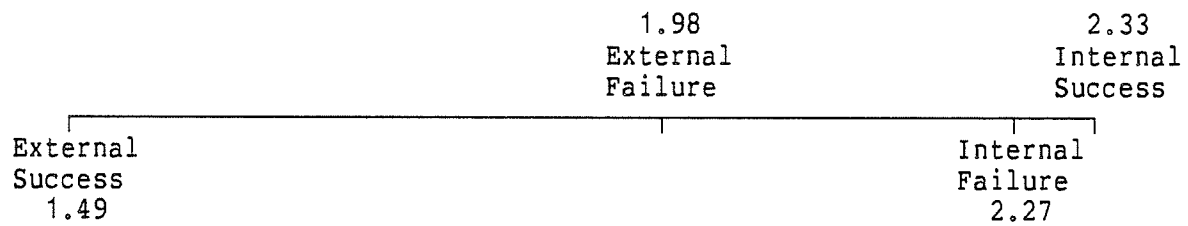
Attribution profile. The attribution profile consisted of students' responses to four attribution questions: ability, effort, task difficulty, and luck. The means and standard deviations for the attributions are presented in Table 7. A Locus of Control by Instructor Expressiveness MANOVA produced a significant main effect of locus of control, $F(12,1275) = 3.40$, $p < .001$, $\eta^2 = .033$, and expressiveness, $F(4,423) = 15.48$, $p < .001$, $\eta^2 = .146$, on attributions about the sexroles achievement test. In the repression lecture condition, the MANOVA indicated a significant effect of expressiveness, $F(4,803) = 14.04$, $p < .001$, $\eta^2 = .070$, on the attribution profile, but not for locus of control, $F(12,2415) = 3.10$, $p < .001$, $\eta^2 = .016$. The significant locus of control main effect for the sexroles test was followed by discriminant function analysis for further clarification. The attribution profile was characterized by high positive loadings on the two internal dimensions, ability and effort, and on task difficulty, plus a high negative loading on luck. (See Table 8). This profile suggested a sense of mastery, i.e., taking responsibility for a difficult task. The group centroids listed in Table 8 indicate that the internal students, success and failure, had the greatest sense of mastery, followed by external failure students, then external success students with the least sense of mastery. This separation of internal students from external failure and external success students is evident in the plotting of the group centroids (see Figure 1).

TABLE 8

Discriminant Function Analysis of Locus of Control Effect for Attribution Profile

SEXROLES LECTURE

<u>Attributions</u>	<u>z</u> <u>weights</u>	<u>Structure</u> <u>correlation</u>	<u>Group</u> <u>Centroids</u>
Ability	.131	.64	Internal Success 2.33
Effort	.596	.80	Internal Failure 2.27
T. Difficulty	.315	.55	External Success 1.49
Luck	-.458	-.58	External Failure 1.98



SEXROLES LECTURE

Note: The larger the centroid, the more internal the attributional locus

Figure 1: Plot of Locus of Control Attribution Profile Centroids

Learned Helplessness

Student achievement. The student achievement means and standard deviations for the sexroles and repression lectures are presented in Table 9. Learned helplessness theory predicted that mastery students should score higher on the achievement test than helpless students, and that the achievement performance of the different helpless students should not differ. Expressiveness effects were expected for mastery, but not helpless students. The effects of perceived control on achievement were examined in two ways. First, a priori comparisons were made on the perceived control groups: (a) mastery vs helpless, and (b) mastery success vs mastery failure, (c) personal helpless vs universal helpless, (d) success helpless vs universal helpless, and (e) success helpless vs personal helpless. Second, expressiveness effects were tested by comparing high versus low expressiveness for each of the five perceived control groups.

For the sexroles data, the Learned Helplessness by Instructor Expressiveness ANOVA on student achievement indicated a significant main effect of expressiveness, $F(1,408) = 35.76$, $p < .001$, $\omega^2 = .073$; but not for helplessness, $F(4,408) = 4.47$, $p < .002$, $\omega^2 = .029$. The mastery students ($M = 19.95$) did not score significantly higher than the helpless students ($M = 18.74$), $F < 1$, nor were there significant differences among the helpless groups, all F 's < 1 . Expressiveness effects were evident only for universal helpless students, $F(1,408) = 20.50$, $p < .001$, $\omega^2 = .041$; but not for any of the other groups, i.e., success helpless students, $F(1,408) = 12.94$, $p < .001$, $\omega^2 = .025$; mastery success students, $F(1,408) = 12.12$, $p < .001$, $\omega^2 = .023$, personal helpless students, $F(1,408) = 4.25$, $p < .04$, ω^2

= .007; mastery failure students, $F(1,408) = 3.76$, $p > .05$, $\omega^2 = .007$. The universal helpless students were able to benefit from the achievement enhancing effects of instructor expressiveness during the sexroles lecture.

There was a significant main effect of expressiveness on the repression achievement test performance, $F(1,760) = 94.82$, $p < .001$, $\omega^2 = .104$, but not for helplessness, $F(4,760) = 4.06$, $p < .003$, $\omega^2 = .014$. Again, the performance of mastery students ($M = 18.00$) on the repression test did not differ from helpless students ($M = 16.89$), $F(1,760) = 6.05$, $p < .014$, $\omega^2 = .006$. There were no significant differences among the helpless groups, all F 's < 1 . Expressiveness effects were found for mastery success students, $F(1,760) = 40.42$, $p < .001$, $\omega^2 = .044$, and for universal helpless students, $F(1,760) = 32.14$, $p < .001$, $\omega^2 = .035$; but not for personal helpless, $F(1,760) = 22.29$, $p < .001$, $\omega^2 = .024$; mastery failure, $F(1,760) = 18.19$, $p < .001$, $\omega^2 = .019$. = .019; nor success helpless students, $F(1,760) = 6.46$, $p < .011$, $\omega^2 = .006$. For students viewing the repression lecture, mastery success and universal helpless students benefited from the high expressive compared to the low expressive instructor.

The student achievement results for the sexroles and repression lectures were not as anticipated. It was predicted that mastery students with greater perceptions of control would perform better on the achievement test than helpless students. There were no significant perceived control main effects for either lecture condition, nor did the performance of mastery students differ significantly from the helpless students. The only expressiveness effects that were "practically significant" were for universal helpless students in both lecture conditions, and for mastery success students writing the repression achievement test.

TABLE 9

Means & Standard Deviations for Post-Lecture Measures: Learned Helplessness Model

SEXROLES LECTURE

	MASTERY SUCCESS		MASTERY FAILURE		PERSONAL HELPLESS		SUCCESS HELPLESS		UNIVERSAL HELPLESS	
	LE	HE	LE	HE	LE	HE	LE	HE	LE	HE
<u>Achievement</u>										
Mean	19.11	21.68	16.80	19.95	17.58	21.58	15.38	21.61	16.57	20.03
S.D.	5.39	4.81	4.80	3.27	4.85	3.70	6.06	2.77	4.94	4.35
n	96	74	15	20	12	12	13	18	67	91
<u>Helpless/Confident</u>										
Mean	6.32	7.83	4.54	6.55	6.25	8.09	4.92	7.44	4.76	6.86
S.D.	2.49	2.20	1.76	2.24	2.59	1.64	3.09	2.28	2.41	2.47
n	95	71	13	20	12	11	13	18	67	90
<u>Ability</u>										
Mean	5.94	7.19	5.07	6.11	6.33	7.50	3.23	7.33	5.06	6.16
S.D.	2.55	2.06	2.34	2.78	3.03	2.39	2.59	2.00	2.39	2.11
<u>Effort</u>										
Mean	6.53	6.99	5.33	6.17	6.75	6.83	3.46	6.67	5.35	6.19
S.D.	2.20	2.14	2.69	2.26	2.49	1.70	2.33	1.85	2.43	2.24
<u>Task Difficulty</u>										
Mean	5.84	6.37	5.27	6.39	6.25	6.25	3.85	5.67	5.61	5.91
S.D.	2.03	2.26	1.79	2.40	2.70	2.38	2.85	2.77	2.07	2.04
<u>Luck</u>										
Mean	4.31	2.45	3.87	2.44	3.83	2.75	6.23	3.72	4.21	3.26
S.D.	2.83	1.52	1.88	2.20	2.37	2.14	3.30	2.27	2.29	2.22
n	95	73	15	18	12	12	13	18	66	88

Table 9 Continued

REPRESSION LECTURE										
	MASTERY SUCCESS		MASTERY FAILURE		PERSONAL HELPLESS		SUCCESS HELPLESS		UNIVERSAL HELPLESS	
	LE	HE	LE	HE	LE	HE	LE	HE	LE	HE
<u>Achievement</u>										
Mean	16.53	20.09	15.76	19.02	14.21	19.68	16.12	18.39	15.05	18.42
S.D.	4.23	4.78	3.93	4.98	4.27	5.78	4.11	4.51	4.12	4.28
n	119	133	72	62	28	31	50	49	116	108
<u>Helpless/Confident</u>										
Mean	5.01	6.52	5.34	6.36	4.80	6.48	5.44	6.71	5.04	5.94
S.D.	2.29	2.15	1.90	2.13	1.87	2.15	2.40	1.88	2.10	2.16
n	117	132	73	62	28	30	49	49	113	107
<u>Ability</u>										
Mean	5.34	6.88	5.59	6.43	5.04	6.22	5.62	6.34	4.89	6.08
S.D.	2.55	2.16	2.49	2.21	2.29	2.62	2.57	2.40	2.39	2.20
<u>Effort</u>										
Mean	6.41	7.19	5.75	6.50	5.40	6.67	6.89	7.25	5.92	6.44
S.D.	2.33	1.93	2.42	2.45	2.26	2.28	2.08	1.80	2.21	2.18
<u>Task Difficulty</u>										
Mean	6.43	6.88	6.07	6.72	6.55	6.59	7.05	7.32	6.41	6.40
S.D.	2.54	2.25	2.34	1.95	2.33	2.14	2.25	2.14	1.99	2.09
<u>Luck</u>										
Mean	5.36	4.15	4.55	3.61	4.88	4.15	5.20	4.77	5.03	4.39
S.D.	2.65	2.32	2.37	2.14	2.56	2.35	2.85	2.69	2.66	2.48
n	117	130	74	60	28	30	50	48	112	107

Helpless/Confident. The means and standard deviations of the helpless/confident question are presented in Table 9 for both lecture conditions. This question about helpless feelings is important for a test of learned helplessness theory. The theory predicts that the performance (i.e., achievement test performance) of personal and universal helpless students should be the same, but that personal helpless individuals should feel significantly more helpless than universal students. Based on empirical findings of Perry & Dickens (1984) it was also predicted that a high expressive instructor would decrease feelings of helplessness for mastery but not helpless students.

A Learned Helplessness by Instructor Expressiveness ANOVA revealed significant main effects of helplessness, $F(4,400) = 7.25$, $p < .001$, $\omega^2 = .052$, and expressiveness $F(1,400) = 36.07$, $p < .001$, $\omega^2 = .075$ for the sexroles lecture. Personal helpless students ($M = 7.13$) did not feel significantly more helpless about their achievement test performance than universal helpless students ($M = 5.96$). Significant expressiveness effects were found for universal helpless students $F(1,400) = 29.52$, $p < .001$, $\omega^2 = .059$ and for mastery success students, $F(1,400) = 16.35$, $p < .001$, $\omega^2 = .032$, writing the sexroles test.

In the repression lecture condition, there was a significant expressiveness main effect on the helpless/confident measure, $F(1,750) = 51.42$, $p < .001$, $\omega^2 = .061$, but no helplessness main effect, $F(4,750) = 1.49$, $p > .20$. Personal helpless students ($M = 5.67$) did not feel more helpless than universal helpless students ($M = 5.48$) about their achievement test performance. Expressiveness effects were found only for mastery success students, $F(1,750) = 31.12$, $p < .001$, $\omega^2 = .037$. For all

mastery success students and some universal helpless students (sexroles lecture), the high expressive instructor decreased students' feelings of helplessness about their achievement performance when compared to the low expressive instructor.

Attribution profile. The means and standard deviations for the four attributions comprising the profile are presented in Table 9. A Learned Helplessness by Instructor Expressiveness MANOVA indicated significant main effects of learned helplessness, $F(16,1600) = 2.87, p < .001, \eta^2 = .030$, and expressiveness, $F(4,397) = 10.84, p < .001, \eta^2 = .110$, for the sexroles lecture; and main effect of expressiveness, $F(4,743) = 10.81, p < .001, \eta^2 = .058$, for the repression test. The helplessness multivariate main effect was not significant for the repression test, $F(16,2984) = 2.74, p < .001, \eta^2 = .015$. Discriminant function analysis (DFA) was performed on the helplessness main effect for the sexroles lecture to provide further clarification of attributional differences. See Table 10 for discriminant function analysis results.

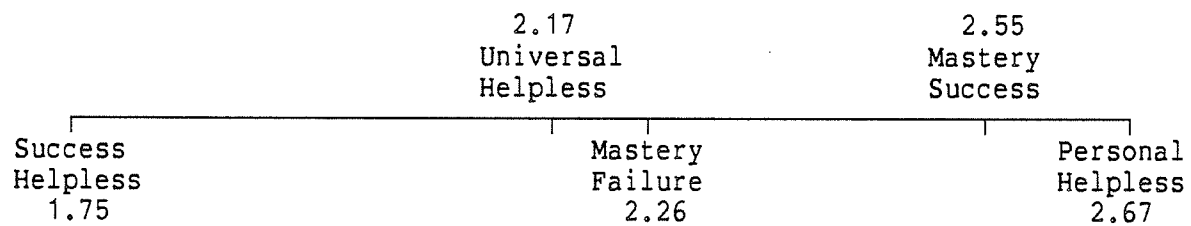
The attribution profile of students writing the sexroles test was characterized by high positive loadings on ability and effort, a moderate loading on task difficulty combined with a moderate negative loading on luck. This profile suggests a sense of mastery, i.e., taking responsibility for a difficult task. The plot of the group centroids in Figure 2 indicate that personal helpless and mastery success students had the greatest sense of mastery, that mastery failure and universal helpless students had relatively similar mastery feelings which were less than personal helpless and mastery success students, and that the success helpless students had the lowest sense of mastery.

TABLE 10

Discriminant Function Analysis of Helplessness Effect on the Attributional Profile

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<u>Attribution</u>	<u>z</u> <u>weights</u>	<u>Structure</u> <u>correlation</u>	<u>Group</u> <u>Centroids</u>	
Ability	.240	.71	Mastery Success	2.55
Effort	.601	.83	Mastery Failure	2.26
T. Difficulty	.240	.53	Personal Helpless	2.67
Luck	-.383	-.53	Success Helpless	1.75
			Universal Helpless	2.17



SEXROLES LECTURE

Note: The larger the centroid, the greater the sense of mastery

Figure 2: Plot of Learned Helplessness Attribution Profile Centroids

DISCUSSION

This study examined students' subjective perceptions of control and instructor expressiveness within a university classroom. Two definitions of perceived control based on locus of control and learned helplessness theory were constructed from students' attributional responses to an objective manipulation of contingency. The two theoretical definitions were tested separately as (a) attributional definitions of perceived control, and as (b) definitions of perceived control in a university classroom. These two approaches are discussed separately because they are seen as two distinct issues.

Attributional Definitions of Perceived Control

The purpose of the stage one analyses was to examine the validity of the two theoretical definitions. That is, is it possible to develop subjective definitions of control using causal attributions? This issue is discussed in terms of (a) the magnitude of effect, (b) the relationship between control and success, and (c) a comparison of locus of control and learned helplessness.

Magnitude of Effect

Both theoretical definitions had a large impact on students' perceptions of control. The locus of control definition accounted for 19 percent of the variance and the learned helplessness definition explained

20 percent of the variance in the perceived control measure. This is a large-sized effect according to Cohen's (1977) definition. As a comparison to an objective definition, an overall omega-squared was computed for the objective contingency manipulation from the same dataset. The value was .13, indicating a large effect also, but not as large as the subjective definitions.

It should be noted that omega-squared is an estimate of the magnitude of effects in a fixed effects model. Each of the three definitions - subjective locus of control, subjective learned helplessness, and objective contingency - is a different fixed effects model. Therefore, the ω^2 's should not be compared directly. However, relative comparisons may be possible because of similarities between the three fixed effects models. The five levels of the objective contingency manipulation included noncontingent success as well as noncontingent failure: contingent, noncontingent low failure (success), noncontingent medium failure, noncontingent high failure, and no feedback. The two subjective models (learned helplessness and locus of control) also contained success and failure groups, i.e., Learned Helplessness - mastery success, success helpless, and mastery failure, universal helpless, personal helpless, and Locus of Control - internal success, external success, and internal failure, external failure. The two subjective definitions had a large effect on perceptions of control and larger than the objective manipulation. This is an important finding because it shows that subjective definitions of control are not only viable, but may be better at predicting students' subjective reactions, feelings, attributions, etc. than an objective definition such as the contingency manipulation.

Control and Success

The results of this study suggest a relationship between control and success. Students who felt more successful also felt more in control than failure students. Betancourt and Weiner (1982) found that students rated causes as more controllable after success than after failure. In examining the relationship between internality/externality and affect researchers have emphasized that attributing failure internally produces feelings of incompetency and loss of self-esteem. Weisz and Stipek (1982) have linked these affective reactions with perceived control, hypothesizing that an individual's feelings of personal competency are directly related to his/her perceptions of personal control. In one study (Forsyth & McMillan, 1981) students with the greatest sense of competency and adequacy were those who internalized their success, and students with the least sense of adequacy were those who internalized failure.

Considering the locus of control definition, students in the present study rated their perceived control highest when they internalized their success, but rated it lowest when they externalized their failure, contrary to the previously mentioned research. This inconsistency concerning the consequences of internal versus external causes of failure could be due to the fact that different types of dependent measures were used in the Forsyth and McMillan study and the present study. When students are responding to affective measures (concerning internal states) on how they feel about their test performance as in Forsyth and McMillan's (1981) study, internal causes for failure may produce the greatest sense of incompetency. But, when students are asked to rate the extent to which they have control over their test performance (an external outcome),

students who attribute their failure to external causes report the least amount of control. Rather than being inconsistent, these two findings support Weisz and Stipek's (1982) suggestion that personal control includes both perceptions of contingency and personal competency. However, the fact that internal and external students' perceptions of control were significantly greater for success than for failure, indicates that a person's perceptions of control are not independent of their perceptions of success. These findings support the contention by Lefcourt and others (Lefcourt et al., 1984; Marsh et al., 1984) that an individual's locus of control for success outcomes is not necessarily the same as his/her locus of control for failure outcomes.

Evidence for the relationship between control and success was also present using the learned helplessness definition of perceived control. Mastery students did report greater perceived control than helpless students, but there were unexpected, significant differences among the perceptions of control of the helpless groups. Both success helplessness and personal helpless students reported significantly greater perceived control than universal helpless students. The three helpless groups defined in this study, personal helpless, universal helpless, and success helpless, were distinguished from each other on the basis of the attributional causes students used to explain uncontrollable outcomes. The attributional dimensions predict when helplessness deficits will generalize to new situations, whether they will persist over time, or whether there will be a concomitant loss of self-esteem. However, theoretically each type of helplessness should manifest the same deficits in performance, and more importantly, the same deficits in perceptions of control. As Abramson et

al. (1980) state: "It is important to emphasize, however, that the cognitive [italics added] and motivational deficits are hypothesized to occur in both personal and universal helplessness" (p. 16).

The fact that success helpless students had greater feelings of control is important theoretically and empirically because it suggests that helplessness deficits do not necessarily result from noncontingent success. Seligman and his colleagues (Abramson et al., 1980; Seligman, 1975) argue that noncontingent positive outcomes should have the same effect as noncontingent negative outcomes. That is, control and success are independent of each other. Others such as Miller and Norman (1979) and Sargent and Lambert (1979), argue that only noncontingent negative outcomes produce helplessness deficits, i.e., failure is a necessary condition for helplessness.

To summarize, both theories need to take into account the success or failure of the outcome. The results of this study indicate that control and success are not independent. Students do not necessarily have the same feelings of control after success as after failure. In fact, students perceive success as more controllable (Betancourt & Weiner, 1982). Miller and Norman (1979) have argued this point in the learned helplessness literature, and Lefcourt (1980) has discussed it in relation to locus of control.

Theory Comparison

The significant difference in perceived control between personal and universal helplessness is critical of the reformulated helplessness model.

The inclusion of the personal-universal dichotomy based on the internality of attributional causes was considered a refinement of the original learned helplessness theory (Abramson et al., 1980). The definitions of personal helpless and mastery failure used in the present study were derived from Abramson et al.'s (1980) model and Dweck's mastery/helpless dichotomy based on attributions to effort and ability. Students who attribute their failure to internal, stable, and uncontrollable causes such as lack of ability are labelled personal helpless, whereas, those who attribute their failure to lack of effort, an internal, unstable, and controllable cause are considered to be mastery-oriented. Both groups of students are making internal attributions about failure, but the distinction is determined by the specific attribution, ability or effort.

In this study, there were few differences in the responses of the mastery failure and personal helpless students. For example, the perceived control means were 5.19 for mastery failure and 5.29 for personal helpless students. Although helpless students can be theoretically distinguished from mastery students on the basis of a specific internal attribution about failure, in this study there was little empirical distinction between the two types of students. There could be several reasons for the lack of a difference between the two groups.

First, causal attributions used to define the groups may not have been sensitive enough to establish a difference between personal helpless and mastery failure. Weiner (1985b) has determined that people do spontaneously search for explanations after an outcome. So it should be assumed that students were making attributions after completing the aptitude test. The problem may be in the measurement of the attributions.

Frieze and her colleagues (e.g., Elig & Frieze, 1979; Whitley & Frieze, 1985) have shown that variations in the format and the wording of the attribution questions can alter the results of studies. For example, Whitley and Frieze (1985) have identified two styles of wording the questions. The first, informational attributions, asks students for information about themselves and the task; such as, how much ability they have for the task, how lucky they are, how hard they tried, or how easy or difficult the task was. The second, causal attribution wording style, asks students to identify the extent to which the various factors influenced, determined, or caused the outcome.

This second format is more directly related to perceived causality of outcomes, and was the format used in this study. However, the specific definitions for mastery failure and personal helplessness were created by relative comparisons of effort and ability attributions. The informational attributions may have been a more appropriate wording style. How much or little ability students felt they had for the task after failure or how hard they tried may have been a better method of distinguishing the personal helplessness and mastery failure students. A small subset of the data included these informational questions, so two groups were created based on the responses to the questions: "how much ability did you have for the aptitude test?", "how hard did you try on the aptitude test?" There were a total of 131 students who were divided into low and high effort and low and high ability groups. The two groups were defined as follows: personal helplessness - low effort and low ability, mastery failure - low effort and high ability. Using this method to define personal helplessness and mastery failure students resulted in a significant difference in perceived control

between the two groups ($F(1,53) = 4.62, \omega^2 = .080$), with personal helpless students feeling less in control ($M = 4.22$) than mastery failure students ($M = 5.67$). Unfortunately, the subsample was so small ($N = 55$) that this method of defining the two groups could not be used.

Second, the method used to define the perceived control groups may have been too indirect to provide an exact definition. For example, personal helpless students were defined by a three stage process as those students who: (a) felt their aptitude test performance was unsuccessful (perceived success < 5), (b) were more internal in their overall attributions (ability+effort $>$ test difficulty+luck), and (c) felt that their ability determined their performance to a greater degree than their effort (ability $>$ effort). In this definition there is no assessment of which attribution students believed had the greatest contribution to their performance. What might be important is which attributional cause was perceived to have the largest contribution. This is labelled the ipsative method and is considered the best procedure for making relative comparisons among attributions (Elig & Frieze, 1979). Then personal helpless students might be defined as those who felt their failure was caused mainly by their ability, i.e., those students who perceived ability to be the most important cause of their performance. This approach necessitates another question being asked: "What was the most important cause of your performance?" This information was not available in the data, but future research using subjective definitions of control might include a relative importance rating of the attributions.

As a final point, the internal/external dichotomy used for both theories in the study was empirically derived from Weiner's attributional

theory of achievement motivation. Students were classified as internal or external on the basis of their overall pattern of attributions. Those who felt that ability and effort, internal attributions according to Weiner, determined their performance to a greater extent than task difficulty and luck, Weiner's external attributions, were labelled as internal students. This distinction has been used by other researchers (e.g., Arkin & Maruyama, 1979; Luginbuhl et al., 1975) to classify students as internal or external within a locus of control framework, but was also used in this study to create subjective control groups for the learned helplessness definition. Theoretically the internal/external dimension is related to self-esteem and was necessary to distinguish between personal helpless and universal helpless individuals. The fact that internal students had greater perceived control than external students provides theoretical support for the locus of control theory, but it also provides support for Weiner's internal/external dimension.

Perceived Control in the Classroom

In the second stage of analyses, the teacher variable of instructor expressiveness was introduced when the effects of perceived control in the classroom were examined. It was predicted that perceived control would affect student achievement performance, and students' attributions and feelings of confidence about their achievement performance. It was also expected that students with higher perceptions of control (mastery or internal students) would benefit from the high expressive lecture, whereas those with lower perceptions (helpless or external students) would not benefit from the achievement enhancing effects of the high expressive

lecture. The results did not support all the predictions. There was no consistent pattern of perceived control effects at stage two, which was surprising considering the large impact perceived control had had at stage one ($\omega^2 = .19, .20$). Expressiveness effects were also not as anticipated. The remainder of the discussion will focus on these two issues including a comparison of the two theories at stage two.

Perceived Control Effects

The subjective definitions of control had a large effect on students' perceptions of control immediately after the aptitude test, but this large impact did not transfer to the students' achievement performance or feelings of confidence. Subjective perceived control had a smaller and less consistent effect on the post-lecture measures. There were no main effects on achievement under either lecture condition. Perceived control significantly affected feelings of helpless/confidence ($\omega^2 = .08$ for locus of control, $\omega^2 = .052$ for learned helplessness), and the attribution profile ($\eta^2 = .031$ for locus of control, $\eta^2 = .030$ for learned helplessness) in the sexroles lecture condition.

There are several reasons that may explain why the large effect did not transfer from the post-aptitude test to the post-lecture measures. First, the introduction of the lecture and instructor could mediate the effects of subjective perceived control. The measures of interest were very specific to the lecture. The achievement test was based on the number of teaching points covered in the lectures, and the other measures were based on students' subjective reaction to their achievement test performance. As well, instructor quality had a definite impact on the

measures. This was evident by the main effect of expressiveness on all measures (omega-squared values ranged from .073 to .091 for achievement, and from .061 to .104 for feelings of helplessness). Thus, the instructor may have a more immediate effect on the students performance, mediating any negative impact of perceived control.

In discussing the effects of subjective control the focus has been to treat students' perceptions as a "trait" rather than a "state". Locus of control theory describes control as a personality variable, which is considered to be a trait of the individual rather than a temporary state. Learned helplessness theory also distinguishes between specific versus global helplessness where a person may become helpless in a specific situation, (i.e., helpless in mathematics but not in literature), or in all situations (i.e., helpless in all academic courses). Specific helplessness might be considered a temporary state since the individual would be helpless only in the situation that produces the helplessness. Global helplessness could be considered more trait-like since it would be evident in more than one situation. However, perceived control defined in terms of subjective feelings may really be measuring a "state" of control rather than a "trait". Subjective definitions may be good predictors of students' "state" such as their perceptions of control, or their causal attributions, but not as good predictors of more trait-like or ability-oriented characteristics, such as achievement performance.

In a laboratory classroom simulation using university students as subjects it might be assumed that students would exhibit only situational or "state" helplessness. Students having a more global helplessness or an external personality for academic achievement situations would probably not

pursue a university education. High school students who did not feel in control of their achievement outcomes would probably choose a nonacademic career orientation such as, technical or vocational programs. However, students feeling helpless about a specific situation or topic may still enroll in university. For example, students who felt they had no control over their performance in literature could pursue a science degree which would include only minimal exposure to literature courses. Thus, if the stage one results are describing a state of no control rather than a trait of general uncontrollability and the classroom simulation may be viewed as a different situation, then the instructor may have more impact than perceptions of control during the classroom situation. Students may feel out of control after the aptitude test, but may interpret the lecture presentation as a new situation (i.e., "I feel out of control over my aptitude test performance, but the lecture presentation/achievement test is a new situation over which I may have control").

A second explanation for the inconsistent perceived control effects is based on Kuhl's theory of action control (Kuhl, 1981, 1984). Kuhl's model stresses a distinction between action orientation, "focusing on action alternatives and plans that serve to overcome discrepancies between a present state and an intended future one" (Kuhl, 1981, p. 159), and state orientation, focusing on some internal or external state created by an unpleasant, aversive outcome. Action orientation is similar to Dweck's notion of mastery orientation and state orientation is similar to helplessness behaviors. Kuhl (1984) states that the antecedent of action orientation versus state orientation depends on the degree of perceived incongruence between two pieces of information. When there is mild

incongruence between expectations and new information or two conflicting expectations, this may stimulate action-oriented attentional focus and strong involvement in the current situation.

In the present study there may have been incongruence between students' general expectations of control and the information they received about their aptitude test performance. That is, (a) they expected to have control over academic outcomes, but (b) in the aptitude test situation they did not have control, as indicated by the stage one perceived control measure. Therefore, the perceived lack of control after the aptitude test may have been an antecedent for action control, producing strong involvement in the classroom situation. This is similar to a reactance theory interpretation (e.g., Brehm, 1972). Reactance occurs when a person's sense of freedom or control is threatened. The person reacts by becoming more involved in the situation, trying hard to regain the lost control/freedom. Students may prevent the negative effects of perceived lack of control by focusing their attention on the instructor. Perry and Tunna (in press) found that Type A students were also able to prevent the deficits associated with loss of control from developing. When Type A students were faced with a threatening noncontingent situation they appeared to have "intensified their efforts to maintain control in contrast to Type B students" (Perry & Tunna, in press, p. 19). These explanations have considered only the student, but they can be extended to include the instructor's influence when examining expressiveness effects.

Expressiveness Effects

As mentioned previously, the internal/mastery¹⁰ students did not uniformly benefit from the high expressive instructor, and the external/helpless students did not uniformly fail to benefit from the high expressive instructor. The two perceived control groups that had some consistency of results for expressiveness effects across the two lecture topics were (a) the internal success/mastery success group, and (b) the external failure/universal helpless group. Generally, the high expressive instructor increased achievement performance and feelings of confidence for these two groups of students. (See Table 11 for a summary of expressiveness effects.) The internal success/mastery success students behaved as predicted. These students had the highest perceptions of control, the highest achievement scores, tended to have high feelings of confidence, and were able to benefit from the high expressiveness instructor - all characteristics describing a person in control. Their sense of mastery may have even overcome the poor instructional quality in the low expressive sexroles lecture. There was no significant difference in achievement scores between low and high expressiveness due to the elevated achievement performance of the internal/mastery success students viewing the low expressive sexroles lecture (See Tables 7 & 9). On the other hand, the external failure/universal helpless students had the lowest perceptions of control, the lowest achievement scores, and the lowest feelings of confidence (or the highest feelings of helplessness) - attributes describing a helpless individual. It was surprising, therefore,

¹⁰ The discussion here does not pertain to one specific theory, so terminology from both theories will be used when talking about the results in a general sense.

that these students were able to increase their achievement in both high expressive lectures and increase their sense of confidence in the high expressive sexroles lecture.

Why were students who appeared to be helpless able to gain from the expressive instructor? It could be that the students who appeared to be helpless are not really in a state of helplessness or low perceived control. Rothbaum et al. (1982) have described a two process theory of control which distinguishes between primary and secondary control. Primary control refers to having control or trying to gain control by directly influencing the environment, similar to what has previously been described as high perceived control. Secondary control refers to attempting to fit in with one's environment rather than trying to control it; exerting control over the psychological impact. The person relinquishes primary control of an uncontrollable situation, but maintains cognitive control through one or more secondary control processes.

These secondary processes include predictive control, illusory control, vicarious control, and interpretive control. Attributions to severely limited ability refer to predictive control because the person attempts to make the best of a difficult situation by being able to predict its reoccurrence. Attributions of negative outcomes to chance allows illusory control by association with chance or fate. The person simply accepts his/her failures as they come. Vicarious control refers to aligning oneself with powerful others through identification or deindividuation. Finally, interpretive control is a combinations of one or more of the other secondary control processes. Cognitive secondary control is afforded by the ability to "interpret" the reasons for the failure or uncontrollability.

By making external attributions for failure, these external failure/universal helpless students may be exhibiting illusory control. Rothbaum et al. believe that all people who display passive or helpless behaviors are not necessarily out of control. They contend that some of these individuals may really be maintaining psychological control through secondary control processes. By this same argument, the external failure/universal helpless students displayed what was interpreted as helpless behaviors, but could have remained cognitively in control. If so, this may explain why their performance increased under the high expressive instructor. Even though their overall performance was lowest, it increased under high expressiveness because the external failure/universal helpless students were cognitively aware and in control.

Kuhl's (1981, 1984) distinction between state-orientation and action-orientation used to explain the perceived control effects may also be relevant here. At first, it was assumed that the external failure/universal helpless students were state-oriented because of their helpless-like behaviors. However, the unexpected outcomes may have prodded them into an action-orientation, so that they were attending to the instructor and his lecture. In the Perry and Tunna (in press) study, noncontingent feedback did not reduce the effectiveness of instruction for Type A students. Exposure to noncontingent feedback produced increased effort or action-orientation in these students rather than loss of control. The internal success/mastery success students would be assumed to be action oriented as well, so their attention would also be focused on the instructor.

A final point of interest is the differences in results between the two lecture topics. Why were the results not the same for all groups under each lecture topic? A number of reasons can be suggested. First, one of the lecture topics may have been more interesting than the other. For example, students may have found the topic of repression to be more novel and interesting than a discussion of sexrole stereotyping. These two topics were originally selected because it was felt that they were topics that would not be covered in introductory psychology, so that the information would be new to subjects. However, with increasing awareness of sexroles and sexrole stereotyping in society, the topic may be discussed in introductory psychology or other courses such as introductory sociology. Even if it is not, students may be more aware of sexrole stereotyping than the topic of repression. Thus, repression may be a more novel topic to the students, so that their attention is oriented more to the lecture and consequently more to the instructor.

A second possibility is that the significant difference in overall achievement performance between the two topics influenced the other measures as well. The results were analyzed separately for each topic because of the significant lecture topic effect on achievement. If one test were harder than another, students may react differently to the harder test. Since students responded to the attributions and helpless/confidence questions in terms of their achievement performance, the different levels of performance may have influenced the affective and attributional reactions. The overall performance on the sexroles exam was higher than on the repression exam, and overall feelings of helpless/confidence were higher for sexroles than repression. It could be that with the higher

level of achievement, feelings of confidence increased more under the high expressive sexroles lecture than the high expressive repression lecture. This might explain why there were significant expressiveness effects on external failure/universal helpless students' feelings of confidence in the sexroles lecture but not in the repression.

A final possibility is that the overall difference in quality between low and high expressiveness was greater for one lecture than the other. For example, the high expressiveness conditions may have had equivalent levels of expressiveness for both lectures, but one of the low expressiveness conditions may have been lower in expressiveness than the other lecture. Thus, expressiveness could have had a larger effect for one topic simply because the difference between low and high expressiveness was greater for that lecture. That may explain why there were more expressiveness effects for the repression lecture. It could be that the low expressive repression lecture was lower in expressiveness than the low expressive sexroles lecture. (See Table 11).

TABLE 11

Comparison of Significant Expressiveness Effects for the Two Theories

		SEXROLES LECTURE	REPRESSION LECTURE
LEARNED HELPLESSNESS			
Universal Helpless	Achievement	X	X
	Help/Confid	X	ns
Personal Helpless	Achievement	ns	ns
	Help/Confid	ns	ns
Success Helpless	Achievement	ns	ns
	Help/Confid	ns	ns
Mastery Failure	Achievement	ns	ns
	Help/Confid	ns	ns
Mastery Success	Achievement	ns	X
	Help/Confid	X	X
LOCUS OF CONTROL			
External Failure	Achievement	X	X
	Help/Confid	X	ns
Internal Failure	Achievement	ns	X
	Help/Confid	ns	ns
External Success	Achievement	ns	ns
	Help/Confid	ns	ns
Internal Success	Achievement	ns	X
	Help/Confid	X	X

Theory Comparison

The discussion has focused generally on perceived control in the classroom, but a final comparison of personal helpless and mastery failure versus internal failure is needed. First, neither personal helpless or mastery failure students performed as expected. For the sexroles lecture for example, the personal helpless students had the second highest achievement score, they had the highest feelings of confidence; and their attributional mastery orientation was the highest. Clearly these students were not helpless students with low performance and low self-esteem. As with perceived control at stage one, there was little difference between the performance of mastery failure and personal helpless students (e.g., Achievement(sexroles): mastery failure, 18.60 and personal helpless, 19.58; Achievement(repression): mastery failure, 17.24 and personal helpless, 17.08; Confidence(sexroles): mastery failure, 5.76 and personal helpless, 7.13; Confidence(repression): mastery failure, 5.81 and personal helpless, 5.67). There were no expressiveness effects for either group under either lecture topic. On the other hand, there was a significant expressiveness effect on achievement performance on the repression test for internal failure students.

Based on both stage one and stage two results it was concluded that subjective definitions of control were a useful in examining perceived control in general and perceived control in the classroom. However, the definition used to describe the personal helpless students in this study did not appear to be an adequate definition. There was no clear distinction between personal helpless and mastery failure students. This does not mean that there is no theoretical distinction between these

groups, but it does mean that the attributional definitions did not provide an adequate distinction. The results for internal failure students were generally as predicted, therefore, the fault does not seem to be with the internal failure dimension. The problem may be in trying to use specific attributions which were designed for other purposes to discriminate between helpless and mastery students. This is really a problem of secondary analysis of data. When using previously collected data, the researcher has to use the variables as they were measured. In this study, the information attribution questions may have been a better choice to define the helpless groups, however, there were not enough subjects answering that type of question to warrant using that method.

Cochran and Hammen (1985) examined the directionality of the learned helplessness hypothesis, i.e., do attributions produce depression and helplessness deficits. They found that depression caused the attributions, rather than the attributions producing the depression. This suggests that causal attributions may not be useful for defining learned helplessness. However, using the informational attributions (how hard did you try, how much ability do you have for the task) gave a more accurate definition of personal helplessness and mastery failure groups. Frieze (1980) believes informational attributions precede causal attributions. Thus, informational attributions may be formed at an earlier stage in the cognitive process that produces learned helplessness and depression than causal attributions. This may explain why they were more useful in defining the helpless group. Future research should examine the feasibility of other attributional procedures rather than ignore the conceptual ties between learned helplessness and attributions.

There was greater consistency between predictions and results for the locus of control attributional definition. Locus of control was defined using a procedure that has been used by other researchers (e.g., Forsyth & McMillan, 1981; Luginbuhl et al., 1975; Ronis et al., 1983). The results of this study corroborated the findings from previous research. For example, Forsyth and McMillan found that following success internal students felt more competent and in control than external students. In the present study internal success students had greater perceptions of control than external success students. Thus, the attributional definition of locus of control was consistent with other research and with locus of control and attribution theory. In future, the derived score would provide a good definition of locus of control, along with other scales designed to measure perceived control for achievement outcomes (e.g., IAR, MMCS).

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Appendix A

Detailed Description of Studies

The following section presents a detailed description of each of the studies that compose the data bank. The description includes information about: (a) the date the study was conducted, (b) sample size, (c) independent variables, and (d) dependent measures. A brief abstract of the study precedes the above information.

Study 1 (Dickens, Perry & Turcotte, 1981)

Study 1 examined the effects of amount of exposure to response-outcome contingency and instructor expressiveness on attributions and achievement. The amount of correct feedback that noncontingent subjects received was manipulated (25%, 75%) to provide some variability in noncontingent aptitude scores, and to ensure the overall aptitude score mean for noncontingent subjects was relatively similar to the contingent group mean. Amount of exposure was manipulated by varying the length of the contingent task (aptitude test). There were three test lengths: short (25 items), medium (75 items), and long (75 items).

This study was conducted during the fall term of the 1980-1981 academic year. Total N=532 students. The independent variables were:

1. Objective contingency (contingent, noncontingent, no feedback).

2. Amount of exposure (short test length, medium test length, long test length).
3. Instructor expressiveness (low, high).

The dependent measures were:

Phase 1 CONTINGENCY TASK:

1. Subjective control, 1=Very little control, 10=Completely under my control.
2. Subjective success, 1=Not at all successful, 10= Very successful.
3. Ability, 1=Did not determine performance at all, 10=Entirely determine performance.
4. Effort, 1=Did not determine performance at all, 10=Entirely determined performance.
5. Test difficulty, 1=Did not determine performance at all, 10=Entirely determined performance.
6. Luck, 1=Did not determine performance at all, 10=Entirely determined performance.

Phase 2 CLASSROOM SIMULATION:

1. Achievement test score, maximum=30
2. Ability, 1=Did not determine achievement performance at all, 10= Entirely determined achievement performance
3. Effort, 1=Did not determine achievement performance at all, 10=Entirely determined achievement performance
4. Test difficulty, 1=Did not determine achievement performance at all, 10=Entirely determined achievement performance

5. Luck, 1=Did not determine achievement performance at all,
10=Entirely determined achievement performance
6. Self, 1=Did not determine achievement performance at all,
10=Entirely determined achievement performance
7. Teacher, 1=Did not determine achievement performance at all,
10=Entirely determined achievement performance
8. Feelings about achievement performance.
 - a) Competent/incompetent (10-point scale)
 - b) Helpless/confident (10-point scale)

Study 2 (Perry & Dickens, 1984)

Study 2 examined the effects of response-outcome contingency training, instructor expressiveness, and student incentive. The student incentive variable was added because previous classroom research has found that it affects student achievement (Perry, Abrami, & Leventhal, 1979). Incentive was manipulated for the high incentive group by telling students that a performance of 65% or greater on the post-lecture achievement test would result in their receiving three additional experimental credits. For some students the additional credits could complete their experimental participation requirement for the year. Low incentive students received no information about additional experimental credits.

The study was conducted during the fall term of the 1980-1981 academic year. Total N=296 subjects. The independent variables were:

1. Objective contingency (contingent, noncontingent, no feedback, control-no training)

2. Incentive (low, high)
3. Instructor expressiveness (low, high)

The dependent measures were:

Phase 1 CONTINGENCY TASK:

Same as study 1

Phase 2 CLASSROOM SIMULATION:

Same as study 1

Study 3 (Perry, Dickens & Somers, 1984)

Study 3 examined the effects of student's attributional locus, response-outcome contingency and instructor expressiveness on attributions and achievement. Subjects were selected from a larger sample of students who filled out a questionnaire designed to measure student attributions on a variety of academic issues (Perry, Dickens, & Abrami, 1981). On the basis of their causal attributions for general classroom outcomes in which they had done poorly, students were defined as having an internal or an external attributional locus. The attributional composite was computed by adding luck and test difficulty ratings (external) then subtracting the ability and effort ratings (internal). The scores ranged from -8 to +8, with -8 being an extreme internal score and +8 being an extreme external score.

This study was conducted in the winter term of the 1981-1982 academic year. Total N=220 subjects. The independent variables were:

1. Subjective locus of causality (internal, external)

2. Objective contingency (contingent, noncontingent, no feedback)
3. Instructor expressiveness (low, high)

The dependent measures were:

Phase 1 CONTINGENCY TASK:

1. Subjective control, 1=Very little control, 10=Completely under my control.
2. Subjective success, 1=Not at all successful, 10= Very successful.
3. Ability, 1=Did not determine performance at all, 10=Entirely determine performance.
4. Effort, 1=Did not determine performance at all, 10=Entirely determined performance.
5. Test difficulty, 1=Did not determine performance at all, 10=Entirely determined performance.
6. Luck, 1=Did not determine performance at all, 10=Entirely determined performance.
7. How hard did your Try?, 1=Not at all, 10=Tried my hardest
8. Feelings about the aptitude test
 - a) Stress 1=Never, 10=Always
 - b) Helpless "
 - c) Conscientious "
 - d) Procrastinating "

Phase 2 CLASSROOM SIMULATION:

1. Achievement score, maximum=30
2. Ability, 1=Did not determine performance, 9=Entirely determined performance

3. Effort, 1=Did not determine performance, 9=Entirely determined performance
4. Test difficulty, 1=Did not determine performance, 9=Entirely determined performance
5. Luck, 1=Did not determine performance, 9=Entirely determined performance
6. Self, 1=Did not determine performance, 9=Entirely determined performance
7. Teacher, 1=Did not determine performance, 9=Entirely determined performance
8. Feelings about achievement performance
 - a) Helpless/Confident (9-point scale)
 - b) Stress/No stress (9-point scale)

Study 4 (Perry & Magnusson, in press)

Study 4 was designed to determine the effects of repeated exposures to objective contingency and instructor expressiveness on attributions and achievement. Students were exposed to the contingency manipulation (contingent, noncontingent) and observed a lecture varying in expressiveness (low, high). One week later the contingency manipulation was reintroduced by verbal cues to students and by the students completing the post-contingency attribution questionnaire a second time. The expressiveness of the second lecture varied to produce a four group lecture sequence (low-low, low-high, high-low, high-high).

This study was conducted during the winter term of the 1981-1982 academic year. Total N=165 subjects. The independent variables were:

1. Objective contingency (contingent, noncontingent)
2. Instructor expressiveness (low, high)

The dependent measures were:

Phase 1 CONTINGENCY TASK:

Same as study 3

Phase 2 CLASSROOM SIMULATION:

Same as study 3

Study 5 (Perry, Magnusson, Parsonson & Dickens, 1986)

Study 5 examined the effects of objective contingency, and two teaching behaviors, expressiveness and lecture content, on achievement and attributions. Two noncontingent groups were included which differed in the amount of reinforcement they received. Amount of noncontingent reinforcement was manipulated by the answer sheets (60% correct, 75% correct). Lecture content was manipulated by varying the number of teaching points covered in the lecture.

This study was conducted during the fall term of the 1982-1983 academic year. Total N=352 subjects. The independent variables were:

1. Objective contingency (Contingent, noncontingent-medium success, noncontingent-high success)
2. Instructor expressiveness (low, high)
3. Lecture content (low, high)

The dependent measures were:

Phase 1 CONTINGENCY TASK:

1. Subjective control, 0=Very little control, 9=Completely under my control.
2. Subjective success, 0=Not at all successful, 9= Very successful.
3. Ability, 0=Did not determine performance at all, 9=Entirely determine performance.
4. Effort, 0=Did not determine performance at all, 9=Entirely determined performance.
5. Test difficulty, 0=Did not determine performance at all, 9=Entirely determined performance.
6. Luck, 0=Did not determine performance at all, 9=Entirely determined performance.
7. How hard did your Try?, 0=Not at all, 9=Tried my hardest
8. Feelings about the aptitude test
 - a) Stress 0=Never, 9=Always
 - b) Helpless "
 - c) Motivated "
 - d) Lazy "
 - e) Discouraged "

Phase 2 CLASSROOM SIMULATION:

1. Achievement score, maximum=30
2. Ability, 1=Did not determine performance, 9=Entirely determined performance
3. Effort, 1=Did not determine performance, 9=Entirely determined performance
4. Test difficulty, 1=Did not determine performance, 9=Entirely determined performance

5. Luck, 1=Did not determine performance, 9=Entirely determined performance
6. Self, 1=Did not determine performance, 9=Entirely determined performance
7. Teacher, 1=Did not determine performance, 9=Entirely determined performance
8. Tried Hard, 1=Not at all, 9=Tried my hardest
9. Feelings about achievement performance
 - a) Stress/No stress (9-point scale)
 - b) Helpless/Confident "
 - c) Unmotivated/Motivated "
 - d) Lazy/Energetic "
 - e) Discouraged/Encouraged "

Study 6 (Magnusson, 1983)

This study examined the effects of two perceived control variables, locus of control and contingency training, and instructor expressiveness. Locus of control was measured by an Intellectual Achievement Responsibility (IAR) scale developed for college students by Bernard Weiner. Instructor expressiveness was manipulated in two laboratory sessions to investigate its effects across repeated exposures. Study 6 was conducted in the winter term of the 1982-1983 academic year. Total N=320 subjects. The independent variables were:

1. Students' Locus of control (internal, external)
2. Objective contingency (contingent, noncontingent)

3. Lecture sequence for instructor expressiveness (low-low, low-high, high-low, high-high)

The dependent variables were:

Phase 1 CONTINGENCY TASK:

Same as study 5

Phase 2 CLASSROOM SIMULATION:

Same as study 5

Study 7

Study 7 examined the effects of student expectations on the relationship between objective contingency and instructor expressiveness. Students expectations about their performance on the achievement test following the lecture presentation were measured immediately after the aptitude test (contingency manipulation).

This study was conducted during the fall term of the 1983-1984 academic year. Total N = 428 subjects. The independent variables were:

1. Objective contingency (contingent, noncontingent)
2. Student expectation
3. Instructor expressiveness (low, high)

The dependent variables were:

Phase 1 CONTINGENCY TASK:

1. Subjective control, 0=Very little control, 9=Completely under my control

2. Subjective success, 0=Not at all successful, 9=Very successful
3. How much ability do you have for the task? 0=None at all, 9=A great deal
4. How hard did you try? 0=did not try at all, 9=Tried my hardest
5. How difficult was the test, 0=Extremely easy, 9=Extremely difficult
6. Ability, 0=Did not determine performance, 9=Entirely determined performance
7. Effort, 0=Did not determine performance, 9=Entirely determined performance
8. Test difficulty, 0=Did not determine performance, 9=Entirely determined performance
9. Luck, 0=Did not determine performance, 9=Entirely determined performance
10. Feelings about the aptitude
 - a) Ashamed/Proud
 - b) Incompetent/Competent (9 - point scale)
 - c) Helpless/Confident
 - d) Unmotivated/Motivated
 - e) Discouraged/Encouraged
11. How successful do you expect to be on the achievement test? 0=Not at all successful, 9=Extremely successful

Phase 2 CLASSROOM SIMULATION:

1. Achievement score, maximum=30
2. How much ability do you have, 1=None at all, 9=A great deal
3. How hard did you try? 1=Did not try at all, 9=Tried my hardest

4. How difficult was the test, 1=Very easy, 9=Very difficult
5. Ability, 1=Did not determine performance, 9=Entirely determined performance
6. Effort, 1=Did not determine performance, 9=Entirely determined performance
7. Task Difficulty, 1=Did not determine performance, 9=Entirely determined performance
8. Luck, 1=Did not determine performance, 9=Entirely determined performance
9. Teacher, 1=Did not determine performance, 9=Entirely determined performance
10. Subjective success, 1=Very unsuccessful, 9=Very successful
11. Subjective control, 1=Very little control, 9=Completely under my control
12. Feelings about achievement test performance
 - a) Ashamed/Proud (9 - point scale)
 - b) Incompetent/Competent
 - c) Helpless/Confident
 - d) Unmotivated/Motivated
 - e) Discouraged/Encouraged

Study 8 (Parsonson, 1984)

Study 8 examined the effects of students ethnic background, objective contingency, and instructor expressiveness on students' achievement, attributions, expectations, and feelings. A nonverbal aptitude test was developed so that students whose first language was not English would not

be at a disadvantage. The nonverbal test was based on Raven's Progressive Matrices. A pilot determined that the test was an effective manipulation of control and was not more difficult than the verbal aptitude test used in all the other studies. The format and procedures were the same as the other studies with the exception of the type of contingency task (nonverbal vs. verbal).

This study was conducted during the winter term of the 1983-1984 academic year. Total N = 323 subjects. The independent variables were:

1. Objective contingency (contingent, noncontingent)
2. Instructor expressiveness (low, high)
3. Students' ethnic background (English, Ukranian, Chinese, Italian)

The dependent variables were:

Phase 1 CONTINGENCY TASK:

same as study 7

Phase 2 CLASSROOM SIMULATION:

same as study 7