Change in Expectancy as a Function of Instructor involvement: A Classroom Study

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Abstract: Students' motivation frequently fluctuates during a semester. However, it is often difficult for instructors to determine the specific situation under which these changes occur and their academic impact. Furthermore, classroom research in the area is scarce. Utilizing multiple analytic procedures to analyze the responses of 34 students in an upper-division Theories of Personality psychology course, the current study examined changes in expectancy ("Can I do this task?") as a function of instructor involvement and the effect of expectancy changes on exam performance and test anxiety. Expectancy declined from one teacher-involved action to the next. However, changes in expectancy had no impact on exam performance and test anxiety. These findings confirm that students' motivation is sensitive to classroom situations and clarify the influence of motivation changes on academic outcomes. The study reveals the importance of carefully considering the nature of the classroom situation when seeking to effect positive motivation changes.

Keywords: situated expectancy-value theory, motivation change, expectancy change, instructor involvement

Instructors might observe that students' motivation frequently changes over a semester. However, given the complexity of the classroom environment, understanding the nuances of these fluctuations can sometimes be unclear. In particular, it can be challenging to determine the circumstances under which motivation changes and the impact fluctuations can have on exam performance and other academic-related outcomes. Moreover, there is a dearth of classroom research investigating changes in motivation and their impact. Yet, understanding these phenomena is critical for adopting differentiation practices for meeting students' diverse motivational needs (Tomlinson, 2014). One well-established comprehensive motivational theory, the situated-expectancy value theory (SEVT; Eccles et al., 1983; Eccles & Wigfield, 2002, 2020; Wigfield & Eccles, 2000), explicates the situated nature of motivation and the impact it can have on student academic outcomes, thereby providing a relevant framework from which to understand these classroom complexities. The current study applied the SEVT to explore these phenomena over one semester. In particular, the study investigated short-term changes in

expectancy ("Can I do this task?"), one central motivational construct of the SEVT in an upper division Theories of Personality course as a function of instructor involvement via the provision of different study tools. The present work also explored the impact of changes in expectancy on exam performance and test anxiety.

The SEVT and The Situated Nature of Expectancy

The SEVT posits that students' academic choices, behaviors, and performance are determined by their subjective task value (perceived value of engaging in a task) and expectancy (expectation of success in a task) (Eccles et al., 1983; Eccles & Wigfield, 2002; Wigfield & Eccles, 2020). According to the SEVT, expectancy of success is a bottleneck in determining academic competence for upcoming tasks, which informs individuals' task performance, engagement, and other academic decisions (Wigfield & Eccles, 2000, 2020). In the SEVT, expectancy is conceptually similar to Bandura's self-efficacy, specifically, expectancy efficacy (Anderman, 2020; Bandura, 1997; Wigfield & Eccles, 2000). Given that self-efficacy and expectancy are conceptually connected, researchers have used self-efficacy scales to measure expectancy (e.g., (Edwards & Taasoobshirazi, 2022; Lauermann et al., 2017), as was done in the current study.

Expectancy, like task value, has been empirically linked to a myriad of school outcomes, including exam performance, engagement, career interest, and course-taking decisions and patterns (for a review, see Rosenzweig et al., 2019; Wigfield & Eccles, 2020). However, there is evidence of a stronger predictive value of expectancy for exam performance compared to task value (e.g., Bong et al., 2012; Brown & Putwain, 2021; Meece et al., 1990; Meyer et al., 2019; Musu-Gillette et al., 2015; Perez et al., 2019). Expectancy might also be more vulnerable to the immediate environment than task value, showing greater declines in some circumstances (e.g., Kosovich et al., 2017; Perez et al., 2014). Moreover, expectancy is determined to be a strong predictor of academic emotions (e.g., Kiuru et al., 2020). Because of this prior evidence, the current study targeted expectancy.

A recent reconceptualization of the expectancy-value model emphasizes the "*situative*" nature of the motivational constructs in the model (Eccles & Wigfield, 2020; Wigfield & Eccles, 2020). According to the revised SEVT, a student's motivation is sensitive to their immediate context, engendering "in the moment" motivation in response to situational characteristics (Eccles & Wigfield, 2020; Wigfield & Eccles, 2020). These contexts and situations influence the expectation of success in future tasks, shaping exam performance and choice in the moment.

The SEVT offers various situations and contexts in which students are embedded that could impact their momentary motivation, one of which is the classroom (Eccles & Roeser, 2010, 2011; Wigfield et al., 2015). Prior SEVT research, although limited, has explored short-term changes in expectancy using the classroom as the situational influence, revealing inconsistent results. Mainly, some research has recorded short-term declines in expectancy over a semester (Benden & Lauermann, 2022; Kosovich et al., 2017; Zusho et al., 2003), while others have revealed short-term fluctuations in expectancy in situation-specific settings (Dietrich et al., 2017;

Johnson et al., 2014; Moeller et al., 2022; Parrisius et al., 2022). This indicates that more work is needed to clarify these dynamics. The current study pursued this goal.

In general, prior research on short-term changes in expectancy has primarily targeted changes in course- or domain-related expectancy (e.g., Kosovich et al., 2017; Zusho et al., 2003) or changes in motivation in response to different course topics and assessments (Benden & Lauermann, 2022; Johnson et al., 2014; Moeller et al., 2022). There remains little knowledge about the changes in motivation as a function of other course-related factors. To provide a more nuanced examination of the classroom's impact on changes in motivation, additional work is needed to examine specific features of the classroom environment to which motivation could respond.

One aspect of the classroom experience that has been found to reliably impact student motivation is instructor support (e.g., Fredricks et al., 2018; Skinner & Belmont, 1993; Wang & Eccles, 2013a; Wentzel et al., 2017). In the classroom, teachers have close and constant interactions with students. In this regard, from the perspective of the SEVT, teachers are socializers whose supportive behaviors can shape student motivation (Eccles & Wigfield, 2020; Wigfield & Eccles, 2020). SEVT experts have focused on various dimensions of teacher support, one of which is instructor involvement, which supports student feelings of relatedness (Marchand & Gutierrez, 2017; Wang & Eccles, 2012). Instructor involvement includes actions that characterize the interpersonal relationship between instructor and students, including dedicating resources to students (Skinner & Belmont, 1993). The current study's conceptualization of this type of instructor involvement is informational help (i.e., provision of academic resources; Skinner et al., 2008; Wentzel et al., 2017). Prior work has revealed that instructor involvement is a powerful predictor of achievement, motivation, and academic emotions (e.g., Ayllón et al., 2019; Lei et al., 2018; Stroet et al., 2013). This means that teachers, as socializers, communicate involved behaviors to students when they provide resources to help them academically. Therefore, it is reasonable to infer that changes in the type of instructor involvement could impact changes in short-term motivation.

However, after an exhaustive search of the literature, only one study examined changes in expectancy as a function of instructor involvement guided by the SEVT. Benden and Lauermann (2022) examined the impact of performance feedback, which falls under the auspice of instructor involvement (see Stroet et al., 2015), on changes in expectancy-value motivation in a two-week period. They demonstrated that students who received feedback about their performance on worksheets at the time of data collection (i.e., the third week of the semester during math lectures) experienced greater declines in expectancy from weeks two to three of the semester than students who received feedback after data collection. Little is known about the role of other types of instructor involvement, especially the provision of resources to support students' education, in short-term fluctuations in expectancy. Thus, the current study sought to extend this line of inquiry by exploring changes in expectancy as a result of providing different study tools, including practice testing and a study guide during a semester.

Practice testing refers to testing on to-be-remembered information (Rowland, 2014), a relatively potent study technique in enhancing learning, long-term retention, and transfer (for reviews, see Adesope et al., 2017; Yang et al., 2021). Because practice testing is not a regular part of the psychology program curricula and experts have advocated for incorporating it (Schwieren et al., 2017), providing students the opportunity to engage in practice testing is, to that extent, one element of providing additional resources to enhance student learning or instructor involvement. Providing an organizational framework for students to study or a study guide can also be considered an aspect of instructor involvement. Study guides orient students to what needs to be learned (Salend, 2016) and help them focus on relevant concepts (Gore, 2010). In the current study, a teacher-generated partial guide was used whereby topics and subtopics were outlined, with the expectation that students elaborate on the content to enhance their learning, which was a critical skill for completing the upcoming test. This method could be considered an effective approach to utilizing study guides (Petrunich-Rutherford, 2021).

As noted before, the situational circumstances by which expectancy changes in the short term are relatively underexplored in the literature. Even less is known about the situative nature of expectancy among upper-division psychology courses when considering short-term changes in motivation. The majority of prior work, instead, limited investigations among first-year students or in introductory college courses (e.g., Benden & Lauermann, 2022; Kosovich et al., 2017; Zusho et al., 2003). Yet, upper-level courses are consequential for students' education. For instance, positive motivational processes in upper-level classes can improve students' attitudes toward active learning (Clinton & Kelly, 2019), enhance engagement (Miller et al., 2021), positively influence meta-cognitive self-regulation (VanZile-Tamsen, 2001), and improve achievement (Darnon et al., 2009, 2018; Wang & Lewis, 2022). In contrast, upper-class students' negative motivational processes can predict maladaptive outcomes, including poor exam performance (Darnon et al., 2009) and disengagement (Kim et al., 2022). Furthermore, upper-level courses are critical to completing a college degree, similar to other courses in an academic major. To that extent, understanding motivational states and their influence on achievement in these types of courses is critical. The current study examined these changes in an upper-division personality psychology course.

Finally, prior work has focused on assessing the impact of expectancy changes on educational outcomes, such as achievement, program satisfaction, interest, and retention (e.g., (Benden & Lauermann, 2022; Kosovich et al., 2017; Zusho et al., 2003). Nonetheless, there remains a limited understanding of their impact on other educational processes, particularly academic emotions. Academic emotions encompass a wide array of emotions, including test anxiety, expressed in achievement settings and related to academic outcomes (Pekrun et al., 2002; Pekrun & Loderer, 2020). This is a relevant area of inquiry because there is evidence of a strong link between student motivation and academic emotions (Berweger et al., 2022; Ketonen et al., 2018; Pekrun et al., 2002; Sutter-Brandenberger et al., 2018), including expectancy (Kiuru et al., 2020). Notably, experts have advocated for more research into the interplay between motivation and academic emotions in different learning situations (Dietrich et al., 2022). Furthermore, directly related to expectancy trajectories, there is inconsistency in the evidence

linking changes in expectancy with academic outcomes, particularly exam performance. Changes in expectancy have predicted academic achievement (Benden & Lauermann, 2022) and showed no significant impact on performance (Kosovich et al., 2017). This suggests that more research is needed to clarify these relationships, which the current study undertook.

The Current Study

The current research aimed to extend prior work on short-term changes in expectancy over a semester by examining expectancy fluctuations as a function of instructor involvement, an area that remains underexplored. In addition, the study sought to extend the investigations of changes in expectancy to upper-division psychology students, as the majority of prior work targeted introductory courses or first-year students. A final objective of the study was to examine the impact of changes in expectancy not only on exam performance but also to explore how changes in expectancy influence academic emotion, namely, test anxiety. Relatively little is known about this relationship. As such, the study addressed two research questions:

1. How does expectancy change in the short term in response to instructor involvement in an upper-division theories of personality psychology course?
2. Do changes in expectancy impact exam performance and test anxiety?

Considering that prior work has documented a decline in expectancy when assessing changes in expectancy as a function of instructor involvement (see Benden & Lauermann, 2022), expectancy was expected to decline across teacher-involved circumstances. As it relates to research question two, because there are inconsistent findings about the impact of changes in expectancy on academic outcomes (see Benden & Lauermann, 2022; Kosovich et al., 2017), this question was left open. It was anticipated that the effect of changes in expectancy on exam performance and test anxiety could go in either direction.

Method

Participants and Procedure

The participants were 34 psychology students (85.3% female; 14.7% male) enrolled in an upper-division Theories of Personality psychology course at a large public university in the southeastern United States. The mean age was 21.62 (*SD* = 2.30), ranging from 19 to 33 years. Whites made up the majority of the sample (64.7%), followed by African-American (20.6%), Hispanic (8.8%), Asian, and mixed-race students (2.9% each). The sample was 73.5% seniors, 23.5% juniors, and 2.9% sophomores.

During the first week of class, students were notified of the nature of the study, including procedures, types of data that will be collected, survey completion time, risks and benefits, their rights, and how confidentiality and anonymity will be achieved. They were also informed that their exam scores would be collected. They were then given until the next class meeting to decide whether they wished to participate. Students who agreed to participate were given informed consent forms to read and sign during the second week of class.

The current work was part of a multifaceted study on study aids. Only the second and third course exams included instructor-involved actions and, thereby, were relevant to the current work. Two students did not complete all phases of the present study. In preparation for the second exam, which took place in the eighth week of a 15-week semester, students completed three 20-item multiple-choice practice quizzes. Each quiz covered topics from one chapter. Quizzes were administered online and were only available after the relevant topics had been covered. Students were allowed four quiz attempts and 60 minutes for each attempt. Given that delayed feedback in practice testing can lead to positive outcomes (see Mullet et al., 2014), feedback was provided after the third attempt and thereafter. Quizzes surveyed the same main ideas and topics as the exam, but the question wording varied. On average, 30 (88.2%) students completed each quiz in at least one attempt. To prepare for Exam 3 in the thirteenth week, the instructor provided a study guide organized by relevant topics and subtopics. The guide was provided to students electronically approximately two weeks before. The study's procedures were approved by the author's institutional review board (IRB).

Course structure

The hybrid Theories of Personality course (i.e., 66% face-to-face; 33% online) covered classical and current theories and domains of personality and met twice a week on campus. There were four 50-minute multiple-choice in-class exams, each comprising 45 questions and one bonus item (45 points each). Exams covered content from three chapters, consisting primarily of application and analysis items with a few knowledge and comprehension questions. Lectures were delivered via PowerPoint presentations and made available to students in skeletal outlines.

Measures

To ensure that students reflected on the instructor-involved action, explicit instructions were given to consider the study tool used in preparation for the upcoming exam. These instructions appeared at the beginning of each measure.

Expectancy

Expectancy was measured with an eight-item instrument adapted from the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich et al., 1993). For this study, items were rewritten to reflect the expectancy for each exam. Sample items included "I am confident I will do an excellent job on Exam X" and "I believe I will receive an excellent grade on Exam X." The scale ranged from 1 (not at all true of me) to 7 (very true of me). The scale demonstrated excellent alphas (α =.94: practice testing provision for Exam 2; α =.96: study guide provision for Exam 3).

Test Anxiety

The STAI-State subscale, a 20-item instrument designed to measure how respondents feel "at the moment," was used. The subscale is from the State-Trait Anxiety Inventory (STAI) (Spielberger & Gonzalez, 1980). Items were anchored along a scale ranging from 1 (not at all) to 4 (very much so). Sample items include "I felt calm" and "I felt upset." The STAI-State has demonstrated good internal consistency, test–retest reliability, and convergent and discriminant validity (Spielberger, 1989). In addition, the STAI State (α =.90; practice testing provision for exam

2; α =.93; study guide provision for exam 3) demonstrated excellent internal consistency in the current study.

Exam Performance

Students' exam scores represented exam performance. It was defined as the percentage of correct items on each 45-question (plus one bonus item) multiple-choice exam.

Data Analysis

To address the first question, three complementary data analytic procedures were used, mirroring prior work investigating changes in motivation over time (e.g., Bernacki et al., 2015; Fryer & Elliot, 2007; Muis & Edwards, 2009): 1) mean-level change, 2) differential continuity, and 3) individual-level change (reliable change index; RCI) (for a detailed explanation, see Fryer & Elliot, 2007). Mean level change measures change at the macro level from one situation or time point to another using dependent samples *t*-tests. Any statistically significant changes in expectancy signal a change in the average endorsement of expectancy across all participants over time or situations. Similarly, differential continuity measures change at the group level. To measure differential continuity, the Pearson-product moment correlation was used to assess test-retest reliability. High test-retest reliability coefficients reveal stability of expectancy from one situation or time point to the other. However, moderate reliabilities indicate moderate changes in expectancy, and low reliabilities show significant changes. These analyses show the classroom trends relating to how expectancy changes as students encounter different teacher-involved actions.

Conversely, RCI measures change at the individual level and examines whether an individual's score increased, decreased, or stayed the same across situations (Christensen, 1986; Fryer & Elliot, 2007; Jacobson & Truax, 1991). RCI analysis provides an additional and more precise measure of change because group-level changes may mask individual changes if the average number of increases and decreases in a group score is similar, nullifying each other. RCI provides information about individual differences in changes over time, particularly where there are two reference points (Bischoff et al., 2020). RCI is measured by subtracting scores at time-point two from scores at time-point one and dividing that difference by the standard error of the difference score. This approach ensures that any changes observed between time points are reliable and not due to measurement error. RCIs greater than 1.96 and smaller than -1.96 are unlikely to occur by chance and therefore are considered reliable changes (Jacobson & Truax, 1991). As such, each individual can be characterized as having a significant increase, decrease, or no change in scores over time. This analysis is particularly pertinent in classroom research since it reveals changes at a more micro level, enabling a more nuanced understanding of how changes occur across situations.

To address the second research question, a one-way ANOVA was conducted to determine whether exam performance and test anxiety differed for participants with different changes in expectancy over instructor-involved actions. Participants were classified into three groups,

determined by the RCI: increase, decrease, and no change in expectancy. Grades and test anxiety for Exam 3 were used as outcome measures.

Results

How Does Expectancy Change in the Short Term in Response to Instructor involvement in an Upper-Division Theories of Personality Psychology Course?

Mean-Level Change

A dependent-samples t-test was conducted to assess mean changes in expectancy across instructor-involved actions (i.e., practice testing and study guide provision). The results demonstrated group-level differences across involved situations, $t(31) = 3.14$, $p < .005$. Expectancy significantly declined from the administration of practice testing (M = 5.39, *SD* = 1.07) to the study guide (M = 4.63, *SD* = 1.40). Table 1 presents descriptive statistics and alpha reliability coefficients for expectancy across instructor-involved situations.

Table 1

Descriptive Statistics and Cronbach Alphas for Expectancy Across Instructor-Involved Actions

Instructor-Involved Actions	M	SD	α
Practice Testing	5.39	1.07	.94
Study Guide	4.63	1.40	.96

Differential Continuity

Differential continuity or test-retest reliability was measured using the Pearson-product moment correlation across the two instructor-involved behaviors. There was a statistically significant, moderate positive correlation between practice-testing-related expectancy and study guide-related expectancy, $r(32) = .41$, $p < .05$. This indicates that expectancy experienced a moderate decline over time as instructor-involved actions changed from assigning practice testing to providing a study guide.

Individual Level Change

Reliable Change Index (RCI) measured individual changes in expectancy as instructor-involved behaviors changed from assigning practice tests to distributing a study guide. Table 2 summarizes the RCI scores, showing the percentage of participants who had a significant increase, decrease, or no reliable change in expectancy scores across instructor-involved actions. The majority of the 32 students who completed both administrations of the survey (78.2%; two students did not complete all phases of the study) reported a statistically reliable change in their expectancy from practice testing exposure to the provision of a study guide. The remaining students (21.9%) reported no change in their expectancy. Of the students who reported a statistically reliable change, 56.3% reported a decline, and 21.9% reported an increase in their

expectancy from practice testing to the study guide. Table 3 presents a summary of the patterns of change for expectancy across the three statistical procedures.

Table 2

Reliable Change Index Showing Individual Level Changes Represented by Percentages Across Instructor-Involved Actions

	Change in Expectancy
	Instructor-Involved Action 1 (Practice Testing) to Instructor-Involved Action 2 (Study Guide)
Reliable Increase	21.9%
Reliable Decrease	56.3%
No Change	21.9%
Total Reliable Change	78.2%

Table 3

Summary of Expectancy Change Results by Type of Analytic Approach

	Change in Expectancy
Analytical Procedure	Instructor-Involved Action 1 (Practice Testing) to Instructor-Involved Action 2 (Study Guide)
MLC	D
DC	MOD
ILC	D

Note: DC = differential continuity, MLC = mean-level change, and ILC = individual-level change. D = decrease. MOD = moderate level of change.

Do Changes in Expectancy Impact Exam performance and Test Anxiety?

One-way ANOVA determined that exam performance and test anxiety were not statistically impacted by changes in expectancy as teacher actions changed, $F(2, 29) = .61$, $p = .551$. In other words, participants who showed a reliable increase ($n = 7$), decrease ($n = 18$), and no change ($n = 7$) in expectancy did not differ in Exam 3 performance and test anxiety.

Discussion

Utilizing the SEVT, the current study explored changes in expectancy in response to instructor involvement and the impact of these changes on exam performance and test anxiety. Overall, students' expectancy declined as the type of involvement changed from assigning practice tests to providing a study guide. The results also demonstrated that changes in expectancy over these involved practices did not impact exam performance and text anxiety. The results and their implications are discussed next.

It appears that students endorsed higher expectations of exam success when instructor involvement included providing access to practice quizzes. However, when involvement changed to the provision of a study guide, the expectation of success in the upcoming exam declined significantly. This result supported the hypothesis and is consistent with prior research documenting a decline in expectancy in response to instructor involvement, primarily performance feedback (see Benden & Lauermann, 2022). This evidence suggests that instructor involvement could have a negative impact on student motivation across circumstances. These findings are inconsistent with prior cross-sectional research documenting a positive effect of instructor involvement on motivation (for a review, see Stroet et al., 2013). As the type of involvement changes in the short term, expectancy could decrease. There are several plausible explanations for the current result.

First, one cannot discount that the type of activity connected to instructor involvement could account for the results. The first instructor involved behavior included practice testing for an upcoming exam, while the second was connected to a study guide. There is a consistent pattern of results revealing that practice testing can result in enhanced learning and retention of studied information across academic settings (e.g., Bertilsson et al., 2021; Dobson & Linderholm, 2015; Glaser & Richter, 2022; Rummer et al., 2017; Schwieren et al., 2017), a phenomenon commonly referred to as the *testing effect* (Batsell et al., 2017). The findings related to study guides are less consistent. For instance, although study guides can be used to orient learners to relevant content (Salend, 2016), there is evidence that teacher-generated study guides, used in the current study, have less than optimal positive learning outcomes than student-generated guides (Cushen et al., 2019; Shane-Simpson et al., 2022) and are less potent than other strategies, such as interteaching (Gayman et al., 2020). Perhaps practice testing was more effective in preparing students for completing the exam than the study guide, thereby increasing their expectation of exam success than when using the study guide. Given that the current study did not test this phenomenon, additional research could explore this further.

Second, it is probable that expectancy of success declined from one involved practice to the next because of the content covered in the exams connected to the relevant study tools provided by the instructor. Practice testing was assigned for an exam covering psychoanalysis, neopsychoanalysis, and behaviorism, which students may have perceived as easy to understand. This might have increased their expectation of success in the exam. In contrast, the study guide was used for an exam testing information related to cognitive, trait, and humanistic personality theories, which could have been perceived as more difficult. This could have made students

question their ability, resulting in decreased expectancy of success on the upcoming exam. Indeed, there is evidence of a negative relationship between task difficulty and expectancy (Eccles & Wigfield, 1995; Fielding et al., 2022). Additional work is needed to test this assumption.

Finally, exam performance when practice testing was used may have impacted the decline in expectancy for the following exam for which study guides were provided. In other words, students likely evaluated their expectation of success on the upcoming exam using the scores they received from the prior exam score. If their scores were lower than expected, it is reasonable to assume that their expectation of success would decline across teacher-involved circumstances. This assertion is supported by research documenting declines in expectancy in the short term when accounting for prior performance (Kosovich et al., 2017; Perez et al., 2014).

Regarding the second research question, changes in expectancy across instructor-involved actions did not impact exam performance and test anxiety. This finding extends research confirming a nonsignificant impact of expectancy change on exam performance (Kosovich et al., 2017). However, it is contrary to prior research revealing that expectancy declines predict many learning outcomes, including exam performance (Benden & Lauermann, 2022). This finding affirms the need for additional research to provide more nuance about these relationships and better understand the impact of changes in expectancy on test anxiety. Nonetheless, the current finding suggests that changes in expectancy do not play a central role in affecting exam performance and test anxiety. Other factors might be more salient influences on these outcomes. For instance, socioeconomic status, prior academic achievement, self-esteem, study skills, perceived cost, and task value can predict exam performance and test anxiety (e.g., Flake et al., 2015; Hyseni Duraku & Hoxha, 2018; Jiang et al., 2018; Jiang & Zhang, 2023; Rodríguez-Hernández et al., 2020). However, the impact of changes in expectancy on exam performance and test anxiety warrants further investigation.

The current findings have important implications for theory and practice. The major theoretical implication emerging from the study is the support for the SEVT's assumption that expectancy is sensitive to the immediate context, including instructor involvement (Wigfield & Eccles, 2020). The current sample expectancy declined as they encountered different instructor-involved behaviors. The study also extends work on short-term changes in expectancy as a function of instructor involvement; there is limited research in this line of inquiry.

Concerning educational implications, the results suggest that instructor involvement alone might be insufficient in influencing positive changes in student motivation. Educators could consider other factors, including the type of instructor-involved actions. For instance, if educators seek to support student expectancy by providing study tools, they could incorporate effective study techniques, including practice testing and spacing (Carpenter et al., 2022). Educators could also apply other facets of instructor involvement, including emotional support, linked to student motivation (e.g., Fryer & Bovee, 2016; Marchand & Gutierrez, 2017; Vansteenkiste et al., 2012; Wang & Eccles, 2013). Additionally, the current finding suggests that educators should be cognizant of declines in expectancy over situations. Therefore, incorporating interventions and

differentiated practices to buffer these declines might be prudent. For instance, educators could apply interventions that can enhance self-efficacy and positively change mindsets (Cromley et al., 2020; Yeager et al., 2019), which are conceptually similar to expectancy (Rosenzweig et al., 2022b).

Several factors limit the conclusions that can be drawn from the current study. First, the study was conducted in an upper-division personality psychology course. These findings might not generalize to other psychology courses, primarily as evidence exists documenting different motivational trajectories within one subject domain (Petersen & Hyde, 2017; Wang et al., 2017). Moving forward, researchers could examine changes in expectancy in other psychology courses.

Second, instructor involvement was intricately tied to the provision of study tools. Providing academic resources is one feature of instructor involvement (Skinner & Belmont, 1993). However, students likely reflected primarily on the type of tools offered and less directly on the instructor's action in providing these tools. It is, therefore, challenging to determine which factor impacted changes in expectancy. Future researchers could more directly test changes in expectancy as a function of instructor involvement.

Third, other SEVT motivational constructs, including the different task values, were not examined in the current study, limiting the application to only expectancy. However, there is evidence that task values change as a function of changing situations (Benden & Lauermann, 2022; Dietrich et al., 2019; Johnson et al., 2014; Kosovich et al., 2017). Future research should explore changes in these constructs.

Fourth, although the study documented declines in expectancy, only two instructor-involved circumstances were tested. Additional teacher-involved behaviors for the semester may have revealed more information about changes in expectancy, primarily as research showed that motivation diminishes as a semester progresses (Kosovich et al., 2017; Zusho et al., 2003). Future research should include more instances of instructor-involved behaviors. Furthermore, given that females and whites comprised the majority of the sample, additional research is needed with a more diverse group of participants.

Finally, the study did not comprise a comparison or control group, which could have identified potential confounds and better explained the results. For instance, the time of the semester teacher-involved actions occurred could account for the current findings. That is, students were first exposed to practice testing (Exam 2; Week 8) and then a study guide (Exam 3; Week 13). It is possible that a comparison group whereby teacher actions involved the provision of a study guide for Exam 2 in Week 8, then practice quizzes for Exam 3 in Week 13 would have clarified whether instructor involvement or time of teacher-involved behavior contributed to the results. Nonetheless, this study serves as a critical “starting point” in better understanding short-term expectancy changes and their impact on student outcomes in a classroom setting. Going forward, additional SoTL studies involving control or comparison groups of Theory of Personality courses and taking into account various factors (e.g., the timeframe of

the semester, carryover effect, etc.) are needed to eliminate potential confounds and better explain the context in which motivation changes and the impacts of these changes.

Conclusion

As students' motivation frequently changes as a semester progresses, determining the circumstances under which motivation changes and the impact of these changes on educational outcomes is critical for differentiating instruction. The present study pursued this line of inquiry and investigated changes in expectancy as a function of instructor involvement and explored the effect of expectancy changes on academic performance and test anxiety. The results demonstrated declines from one instructor-involved behavior to the next and non-significant impacts of changes in expectancy on performance and test anxiety. These findings potentially offer a better understanding of strategies that can be used to enhance motivation, when these strategies are most effective, and motivational factors that can influence academic performance and emotions.

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