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Teaching Effectiveness, Course Evaluation, and Academic Performance:

The Role of Academic Delay of Gratification

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Although much research has been conducted assessing teachers' effectiveness in imparting knowledge (Marsh, 2007; McKeachie, 1997), very little work has been done to examine the association between teaching and course effectiveness and learners' willingness to delay gratification to secure mastering of class material and task completion. Academic delay of gratification is a key factor that influences an individual's motivation to excel in academic tasks. Bembenutty and Karabenick (1998) defined academic delay of gratification as students' postponement of immediately available opportunities to satisfy impulses in favor of pursuing chosen important academic rewards or goals that are temporally remote but ostensibly more valuable. The construct of academic delay of gratification is rooted in the work of Mischel and associates (Mischel, 1996; Mischel, Shoda, & Peake, 1988). The purpose of the present study was to examine the association

Summary

Academic delay of gratification is a significant and positive predictor of students' final course grades, even after controlling for the effect of their rating of the course, expected grade, and degree of interest, importance, and utility of the academic task. Students' expected course grades are by far the strongest predictor of their final course grades. This suggests a student's expected grade in a course is associated with academic achievement in that course. Because expectation of grades alone should not be the focus of students' motivation, students need to learn how to use other factors to motivate themselves and to develop learning strategies that support mastery and a mastery orientation. Students' ratings of a course are not a significant predictor of their final course grades, which suggests that students' perception of the course are not directly associated with the grades they obtained in the course. This suggests that academic delay of gratification helps students to orchestrate their academic progress, enactment of goals, task completion, and eventual academic achievement. Judging by its role in predicting students' final course grades, academic delay of gratification explains a statistically significant amount of variance in students' academic achievement.

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between students' perception of teaching and course effectiveness and their willingness to delay gratification for the sake of temporally distant but highly valuable academic outcomes.

Highly intrinsically motivated learners delay gratification because they are interested in the classroom activities. Instructors work hard to involve their students in learning. At the same time, students who delay gratification contribute significantly to their class with their high motivation, effort, and commitment to their task. What the instructors bring to the class complements what students who delay gratification contribute to the class. Pintrich and Zusho (2007) have posited that students' behavior and actions in the class influence the behavior of their instructors. Pintrich and Zusho argued that actively engaged learners influence the instructor's choice of teaching strategies. For instance, as Pintrich and Zusho and Zimmerman (Zimmerman, 2008; Zimmerman & Schunk, 2008) observed, the motivation and behavior of the students is influenced by the feedback they receive from their instructors, but students' feedback, evaluation, and performance influence the instructor's effort, persistency, and motivation for teaching in a reciprocal fashion. Therefore, a positive association is expected between students' willingness to delay gratification and their ratings of teaching and course effectiveness.

Teaching Effectiveness

An important area of education is the students' evaluation of teaching effectiveness and rating of their courses (Marsh, 2007; McKeachie, 2007). Evaluations of university teaching have been used in the United States, Canada, and other countries. The purposes of evaluation of teaching effectiveness are diverse. Very often, evaluations are used as a diagnostic feedback tool for faculty improvement and teaching effectiveness. In other instances, these evaluations are used to provide information to the students and to make personnel decisions such as giving tenure and promotion (Marsh, 2007; McKeachie, 2007).

Teaching effectiveness and rating of the course could be done with a single-item question. Often, institutions use a multidimensional instrument, which assess dimensions such as students' perception of the instructor's subject knowledge, preparation and organization, classroom management skills, respect for the students, workload, and value of course material. However, the reliability, stability, generalizability, and applicability of students' evaluations of university teaching have been questioned on multiple grounds (Marsh, 2007). Researchers (Marsh, 2007; McKeachie, 2007) observed that ratings could be biased and subject to multiple external factors outside of the instructor's ability to teach and to create and maintain an effective course (Nerger, Viney, & Riedel, 1997; Perry & Smart, 2007). Potential biases include prior subject interest, expected grade, reason for taking the course, class size, instructor rank and gender, and student personality. In addition, instructors could bias the rating through grading leniency and grade inflation (Marsh, 2007). Nevertheless, most researchers agree that students' evaluations of university teaching are used primarily for constructive purposes, such as to encourage instructors to improve their teaching effectiveness and to inform the students about their selection of courses (Marsh, 2007; McKeachie, 2007; Nerger et al., 1997; Perry & Smart, 2007).

Teaching effectiveness has a long history in education. William James (1899) challenged teachers in this way

> In teaching, you must simply work your pupil into such a state of interest in what you are going to teach him that every other object of attention is banished from his mind; then reveal it to him so impressively that he will remember the occasion to his dying day; and finally fill him with devouring curiosity to know what the next steps in connection with the subject are. (pp. 9–10)

James was concerned with the role and effectiveness of the teacher, the environment in which learning takes place, and the action and reaction of the learners. James contended that when

teachers and classes are effective, learners would be absorbed in the task in such a way that every other distraction and competing alternative could fade away as the students themselves would banish distracting factors. Indeed, James was one of the first theorists to discuss the role of volition in understanding individual differences in enacting long-term intentions (James, 1899).

Academic Delay of Gratification

The previous discussion suggests that learners who engage in delay of gratification could be like those described by James (1899). However, if the students do not perceive that the teaching and the course are useful, important, and interesting to them, then they may not find it necessary to delay gratification. Mischel and his associates have maintained that individuals choose to delay gratification for a reward that they consider highly valuable and useful (Mischel, 1996; Mischel, Cantor, & Feldman, 1996).

Highly self-regulated learners may use their volitional control to delay gratification (Corno, 2001; Randi & Corno, 2000; Zimmerman, 1998), which could result in a favorable view of the teachers and the class tasks. They could develop a positive view of class activities because they have successfully orchestrated their motivational tendencies, cognitive skills, and behavioral capabilities. At the same time, teachers may respond positively to their effort, resulting in a positive relationship between the teachers and the students (McKeachie, 1974, 2007; McKeachie & Svinicki, 2006). This type of process may produce a reciprocal relationship in which teachers would put their students in "a state of interest . . . and devouring curiosity" (James, 1899, pp. 24–25). As Gallagher (1994) observed,

> the teacher is now expected to create enriched learning environments, to design student interactive activities, and to be aware of the specific content he/she is expected to present—all while being reflective on his/her role in the interactive and sequential process. (p. 182)

The literature contains a constellation of learning strategies known to be effective in enhancing learning and academic achievement (Corno, 1993; McCann & Garcia, 1999; Pintrich, 2000; Pintrich & De Groot, 1990; Randi & Corno, 2000; Wolters, 1999; Zimmerman & Martinez-Pons, 1990). Recently, Bembenutty and his associates (Bembenutty, 1999; Bembenutty & Chen, 2005; Bembenutty & Karabenick, 1998, 2004) have suggested that students strategically delay gratification by voluntarily postponing immediate gratification in order to enact academic rewards temporally distant but highly valuable. Bembenutty and colleagues further asserted that students' willingness to delay gratification influences learning. From this perspective, *academic delay of gratification* refers to students' preference for a delayed alternative (e.g., stay home studying to get a good grade in the course later) over an immediately available option (e.g., go to a favorite concert the day before a test even though the student is not well-prepared) to secure temporally distant academic rewards, goals, and intentions (Bembenutty, 1999; Bembenutty & Chen, 2005).

The Academic Delay of Gratification Scale (ADOGS; Bembenutty & Karabenick, 1998) assesses academic delay of gratification. The ADOGS solicits a student's preference for an immediately available attractive option versus a delayed academic alternative. An example (similar to that seen in Appendix A) is, "A. Delay studying for an exam in this class the next day even though it may mean getting a lower grade, in order to attend a concert, play, or sporting event," versus "B. Stay home to study to increase your chances of getting a high grade on the exam." Students responded on a 4-point scale.

Using the ADOGS, Bembenutty and his associates (Bembenutty & Karabenick, 1998; Bembenutty, Karabenick, McKeachie, & Lin, 1998) found a relationship between students' tendencies to use cognitive (e.g., retrieval, distributed practice, rehearsal, elaboration, organization) and self-management strategies (e.g., effort regulation, action control, time management, environmental control, peer learning) and their willingness to delay gratification. They also found a relationship between aca-

demic delay of gratification and students' motivational tendencies (e.g., self-efficacy, task-value, intrinsic and extrinsic motivation). The aforementioned patterns of behavior suggest that delay of gratification is an important individual difference that is enacted in relation to academic and classroom activities. In other words, students who are willing to delay gratification for the sake of future academic rewards appear to perceive classroom-related tasks in a more favorable way than students who are unwilling to delay gratification. That is why a positive association between students' willingness to delay gratification and their rating of the course and teaching effectiveness is expected in the present study.

Motivational Determinants of Academic Delay of Gratification

Consistent with Eccles's comprehensive expectancy-value theory that explains learners' preferences for diverse alternatives of action (e.g., Bembenutty, 2008b; Eccles, 2005; Wigfield & Eccles, 2000), Mischel (1996; Ayduk, Rodriguez, Mischel, Shoda, & Wright, 2007) posited that willingness to delay gratification would depend upon an individual's expectancies, beliefs, goals, and values. Mischel and Ayduk (2004) observed that

> an expectancy-subjective value mechanism underlies the initial assessments that people make regarding this decision. It is a subjective calculation of whether the value and feasibility of attaining a delayed reward relative to the value of the immediately available one is high enough to warrant their choice to wait or work to attain it. (p. 106)

Thus, delay of gratification depends on the degree of interest, utility, and importance of these alternatives.

Bembenutty (2008a) found a positive correlation between these motivational determinants and delay of gratification. Specifically, Bembenutty found an association between college students' degree of interest, importance, and utility of an aca-

demic task versus a nonacademic alternative and their choice of a delay of gratification. He found that students' willingness to delay gratification to pursue long-term academic goals related to their motivation-related judgments of delay versus non-delay alternatives. Thus, the motivational determinants of delay of gratification are expected to be associated with students' ratings of instructors and their courses.

Expected Course Grade

Students' expected grades have been associated with student evaluations of teaching (Marsh, 2007; McKeachie, 2007). For instance, Marsh and Dunkin (1992) and Koermer and Petelle (1991) found a positive correlation between expected grade and student ratings. Expected grade in the course was a significant predictor of final course grade (Crawford, Dale, & Toney-McLin, 2003). Students with high expectations give higher ratings than students with low expectations (Greenwald & Gillmore, 1997a, 1997b; Kohn & Hartfield, 2006; Wachtel, 1998; Worthington, 2002). However, Stodnick and Rogers (2008), using partial correlation to control for student learning, did not find a correlation between expected grade and student evaluation ($r = -.049$, $p < .10$). To date, researchers have not examined the association between delay of gratification, its motivational determinants, and expected and obtained grade, or whether delay of gratification would have a significant association with obtained final grade after controlling for expected grade and the motivational determinants of delay of gratification.

Hypotheses of This Study

Two hypotheses guided this study. First, academic delay of gratification, students' ratings of instructors and their courses, motivational determinants of delay of gratification (i.e., interest, importance, and utility), and expected and obtained final course

grade would be positively related. Second, academic delay of gratification would be positively associated with obtained final course grade, even after controlling for students' expected grade, rating of the course and the instructor, and the motivational determinants of delay of gratification (i.e., interest, importance, and utility).

Method

Participants

Participants were college students (N = 113) enrolled in six undergraduate introductory courses (i.e., psychology, statistics, and political science) at a large, public, Midwestern university. All of the students enrolled in the classes participated in the study (with 7 to 25 students per class). There were 64 females (56.6%) and 49 males (42.4%). Seventeen of the students were first-year college students (15.0%), 32 were sophomores (28.3), 34 were juniors (30.1), 19 were seniors (16.8%), and 11 were graduate students (9.7%). Sixty-nine of the participants were Caucasian (61.3%), 15 were African American (13.3%), 4 were Asian American (3.5%), 3 were Native American (2.7%), 2 were Hispanic (1.8%), and 20 students did not report their ethnicity or marked "Other" without specifying their ethnicity. The mean age of the participants was 24.44 years (SD = 6.19).

Measures

Academic Delay of Gratification. This study utilized 10 scenarios from the Academic Delay of Gratification Scale (ADOGS; Bembenutty, 2008a; Bembenutty & Karabenick, 1998, 2004). The ADOGS examines students' delay of gratification preference in relation to the course in which they were currently enrolled. The students rated their preference for an immediately available attractive option versus a delayed alternative. An example (similar to that seen in Appendix A) is, "A. Delay studying for an exam in this class the next day even though it may mean get-

ting a lower grade, in order to attend a concert, play, or sporting event," versus "B. Stay home to study to increase your chances of getting a high grade on the exam." Students responded on a 4-point scale: *Definitely choose A*, *Probably choose A*, *Probably choose B*, and *Definitely choose B*. Considered as a continuous variable, responses were coded and averaged for the 10 items so that higher mean scores indicated greater delay of gratification (range 1 to 4). The ADOGS demonstrates acceptable psychometric properties. In this study, the ADOGS has adequate internal consistency, Cronbach α = .71 (M = 3.03, SD = .48). Previous studies have examined the psychometric qualities of the ADOGS (Bembenutty, 1997; Bembenutty & Karabenick, 1998). Its construct, convergent, divergent, and criterion validity has been assessed with instruments such as Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1993) and the Patterns of Adaptive Learning Survey (PALS; Midgley et al., 1997).

Determinants of Academic Delay of Gratification. After the students reported their choice for each scenario presented in the ADOGS, they reported their interest in the delay versus the non-delay alternatives (*interest*). An example item was, "How much would you like to party the night before a test and study only if you have time?" versus "How much would you like to study first and party only if you have time?" They also indicated how important each alternative was to them (*importance*). An example item was, "How important would it be for you to party the night before a test?" versus "How important would it be for you to study first and party only if you have time?" They reported how useful the delay alternatives versus the non-delay alternatives were to them (*utility*). An example item was, "How useful would it be for you to party the night before a test?" versus "How useful would it be for you to study first and party only if you have time?" Differences scores (delay preference minus preference for an immediately available attractive option) were obtained by subtracting responses to the non-delay alternatives from the delay alternatives. Then, the results of the subtractions

were added over the 10 items. Considered as continuous variables, the variables Interest, Importance, and Utility were coded and added so that higher total scores indicated greater interest, importance, and utility of the delay alternatives as opposed to the non-delay alternatives (see Appendix A).

To calculate the differences between the students' interest, importance, and utility preferences for the delay versus the non-delay alternatives, students were asked to indicate the degree of interest, importance, and utility they placed on each of the two alternatives. For example, imagine a student indicates that she likes very much to study first and party only if she has time: She circles 5 for that question. Further, she circles 2 for the question that asks if she likes to party first. Then to obtain the difference score, 5 – 2 is calculated. In this case, the liking score for this student would be 3, which represents a fairly average tendency to like the delay alternative more than the non-delay alternative. However, if she indicates that her liking of the delay alternative is 2 and that she likes the non-delay alternative very much, scoring it a 5, then her differential score for liking would be -3 (2 – 5 = -3), which indicates that she has a high liking preference for the non-delay alternative. Using this differencing technique, scores can range from -5 to +5.

As observed in Mischel's work, the determinants of delay of gratification are operationalized as representing separate psychological processes that deserve to be examined independently from the individual's actual intention to delay gratification. For instance, a student could consider that the delay alternative is more important than the non-delay alternative, but whether she will actually choose to delay gratification would be determined by factors such as how much she likes and values both of the alternatives, her expected grade, and her perception of the course and the instructor.

This study investigated students' preference for one alternative, given the presence of the other. Thus, we have a conditional principle, which is the students' preference for Alternative B given that there is a competing choice (i.e., Alternative A). Delay of gratification is a choice approach. In Mischel's (1996)

classic marshmallow study with children, he presented the students with the choice to have one or two candies; both alternatives were present for the children to select. In the present study, the importance of staying home to study is not the same as the importance of going to a party; these are not different measures of the same attribute. The importance of assessing the individual scenarios is that they give readers an opportunity to see the individual responses of the students to each of the situations. The students have differential preferences for each of the scenarios and for each of the alternatives. For example, a student who likes to stay home and study may not see the importance or does not have the expectancy-value for staying at home. Similarly, a student who understands the importance of and possesses the expectancy-value for studying in a place without distraction may like to study in a place with distraction, which is the case of many students for whom the library is a place where they can socialize with their friends even when they know that they should be studying there.

Mischel (1996) clearly distinguishes between the individual's actual behavior of choosing an alternative course of action from the motivational determinants that influence that choice. Individuals' selection of action is a result of potential and multiple motivational factors such as how much they like an option, how important it is for them, and how useful each alternative will be to them. For instance, in a hierarchical regression model predicting final course grade, a positive standardized beta of the differential preferences of *importance* would indicate that after controlling for the effect of the other predictors, students who considered the delay alternatives as more important to them would be the ones who would obtain the highest final course grade. On the other hand, a negative standardized beta would indicate that the students with greater preference for the nondelay alternative would be the ones who would obtain the highest grade in the course.

To assess students' perceptions of teaching effectiveness, they responded to the following question: "What is your overall rating of the teaching effectiveness of the instructor of this course?"

The alternative answers ranged from 1 to 5, *Much below average* to *Much above average* (a recoded variable; see Appendix B).

To assess the students' perceptions of course effectiveness, they responded to the following question: "What is your overall rating of this course?" The alternative answers ranged from 1 to 5, *Much below average* to *Much above average* (a recoded variable; see Appendix B).

The students reported their expected final course grade. In addition, the students gave the researcher permission to obtain their final course grade in the course from the instructor. The scale ranges from 0 (*failing*) to 11 (*an A*).

Procedure

Students completed the evaluation instrument after the midsemester examination and at least 2 weeks before the final examination. Instructors were required to leave the classroom during administration of the instruments. Students were assured that evaluations would not affect their performance in the course and that the instructors would not see their responses.

Data Analysis

The data analysis involved two steps. The first step examined the correlation between all of the variables. In the second step, hierarchical regression analyses were conducted using final course grade as the dependent variable and the other variables in the study as predictors. Because students were nested within classes, it was important to consider potential classroom effects. Thus, to compute the intraclass correlation (ICC), classrooms were used as a random effect. The within-classroom and between-classroom variations were estimated using maximum likelihood estimation. The between-classroom variation was .039 and the within-classroom variation was 7.84. The ICC was .005 (ICC = .039/(.039 + 7.86)). The ICC indicated that 0.5% of the variance in course grade occurred across classrooms, with 99.5% occurring within classrooms. In other words, students from the same

classroom exhibited relatively large heterogeneity in final course grade. Hence, classroom-level effects would not account for a significant amount of the variance in course grades, and further examination of the data did not need to use multilevel modeling. Further, the design effect for study was 1.043, which is very low. This additional evidence bolsters the claim that there is no need for a multilevel modeling analysis or to do any adjustments to the standard errors.

Results

Correlations Between the Variables

The first hypothesis predicted an association between delay of gratification, motivational determinants of delay of gratification (i.e., interest, importance, and utility), expected and obtained final course grade, and ratings of the course and the instructor. Students' rating of the course and teaching effectiveness were highly correlated (r = .68). Academic delay of gratification was significantly correlated to students' rating of the course (r = .21) and teaching effectiveness (r = .20). Delay of gratification was related to final course grade (r = .29). Teaching effectiveness was related to students' expected grade and final course grade. Students' rating of the course was related to students' expected and final course grade. Final course grade was related to expected course grade (r = .59). Table 1 contains the correlations among all of the variables in the study as well as means and standard deviations for all of the variables.

Students' willingness to delay gratification was related to interest, importance, and utility of the delay alternatives relative to the non-delay alternatives. In addition, utility of the delay alternatives was positively related to final course grade. Importance was related to rating of the course. Further, interest for the delay alternatives relative to the non-delay alternatives was related to importance and utility. Finally, importance was related to utility.

Table 1

Pearson Correlations Between the Variables in the Study

	1	2	3	4	5	6	7	8
1. Rating of the Instructor	—							
2. Rating of the Course	.68**	—						
3. ADOGS	.20*	.21*	—					
4. Interest	.06	.02	.45**	—				
5. Importance	.22	.30**	.51**	.31**	—			
6. Utility	.17	.14	.44**	.20*	.68**	—		
7. Expected Course Grade	.25**	.30**	.18	-.05	.08	.16	—	
8. Final Course Grade	.25*	.30**	.29**	.10	.18	.26**	.59**	—
9. Final Course Grade ($\rho_{XY \cdot Z}$)	.05	.07	.23*	-.16	.01	.05	.81***	—
Mean	3.84	3.76	3.03	-0.61	1.48	1.68	8.62	8.25
Standard Deviation	0.78	0.75	0.48	1.34	0.79	0.75	2.27	2.82

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Partial correlations between final course grade and the other variables in the study were examined. After controlling for the other variables, final course grade was related to delay of gratification (r = .23) and expected grade (r = .81).

Hierarchical Regression Analysis

The second hypothesis specified that academic delay of gratification would be positively associated with obtained final course grade, even after controlling for expected grade, ratings of the course and the instructor, and the motivational determinants of delay of gratification. Given the high correlation between rating of the course and rating of the instructor (r = .68) and to avoid multicollinearity, it was determined to retain for further analyses only the rating of the course for its higher correlation with the dependent variable. A series of hierarchical regression models were conducted to estimate the unique contribution of each independent variable while controlling for other independent variables that were already entered.

Given the high correlation between expected and obtained final grade, expected grade was entered in the first step. In Step 2, rating of the course was added to examine the effect of students' perception of the course after controlling for the expected grade. In Step 3, motivational determinants of delay of gratification were entered. In Step 4, delay of gratification was added to examine the unique contribution of this factor after controlling for all other independent variables.

Multicollinearity between the six predictors was examined using Variation Inflation Factor (VIC). The highest VIF in this model was 2.2, with a Condition Index lower than 30. Thus, multicollinearity among the independent variables was not a significant concern. Regression model diagnostics were also conducted. Residuals from the final model were plotted in a histogram and a Q-Q plot. There was no severe violation of normality. Studentized deleted residuals were plotted against the standardized predicted values in a scatter plot. Again, no severe violation of the constant variance assumption was detected.

For exploratory purposes, interaction terms between all of the independent variables were tested to examine potential moderation effects. However, none of them was significant; hence, the final model did not include the interaction terms.

Table 2 displays the results of the hierarchical regression predicting final course grade. In the Step 1 model, expected grade was a statistically significant predictor (standardized $\beta = .82$, $p < .001$) of final course grade. This variable accounted for 67% of the variance in the outcome. As indicated by the partial eta squared ($\eta_p^2 = .70$), the effect is large compared to the error variance that was not explained by the effect.

When students' ratings of the course were added to the equation in Step 2, expected grade was still a statistically significant predictor ($\beta = .78$, $p < .001$; $\eta_p^2 = .68$) of final course grade, but rating of the course was not, $\eta_p^2 = .01$ ($\Delta R^2 = .02$, $p > .05$). Together, expected grade and rating of the course accounted for 69% of the variance in the outcome.

When the students' interest for, importance of, and utility of the immediate versus the delay alternatives were added to the equation in Step 3, expected grade was still a significant predictor ($\beta = .79$, $p < .001$) of final course grade, but rating of the course, interest, importance, and utility were not. All three variables contributed an additional 1% of the variation for the final grade, indicating that none was a significant predictor for students' final grade after adjusting for expected grade. The overall R^2 for this model was .703. The effect sizes for the three variables were small.

After students' willingness to delay gratification was added to the equation in Step 4, it was a significant predictor ($\beta = .16$, $p < .05$; $\eta_p^2 = .05$) of final course grade. Delay of gratification accounted for an extra 1% of the variation. Expected grade was still a significant predictor ($\beta = .77$, $p < .001$; $\eta_p^2 = .65$), but rating of the course, interest, importance, and utility were not. Together, these independent variables accounted for 71% of the variance in the outcome. These results support the second hypothesis that students' willingness to delay gratification was positively associated with obtained final course, even after controlling for the

Table 2

Summary of Hierarchical Regression Analysis for Variables Predicting Final Course Grade

Step	Variable	*B*	SE *B*	β	*t*	ρxy*z	R^2	ΔR^2	*F* Change	ANOVA
1	Expected Grade	.99	.07	.82	13.24***	.82	.67	.67	175.27***	175.27***
2	Expected Grade	.95	.07	.78	12.33***	.81	.69	.02	3.59	92.17***
	Rating of the Course	.41	.21	.12	1.89	.21				
3	Expected Grade	.96	.07	.79	12.25***	.81	.70	.01	.93	37.35***
	Rating of the Course	.33	.22	.09	1.47	.16				
	Interest	-.09	.11	-.05	-.81	-.09				
	Importance	.19	.28	.05	.67	.08				
	Utility	.19	.27	.05	.72	.08				
4	Expected Grade	.93	.07	.77	12.07***	.81	.71	.01	4.38*	33.19***
	Rating of the Course	.27	.22	.07	1.20	.13				
	Interest	-.17	.12	-.10	-1.46	-.16				
	Importance	.01	.28	.01	.06	.00				
	Utility	.13	.26	.04	.50	.05				
	ADOG	.86	.41	.16	2.10*	.23				

Note. * $p < .05$. *** $p < .001$.

other independent variables in this study. However, students' expected grade was by far the strongest predictor identified in the study. The percentage of the variance in course grade explained by all of the variables included except expected course grade was approximately 4%.

Discussion

This study examined the associations among academic delay of gratification, students' rating of instructors and their courses, interest, importance, utility, and expected and obtained final course grades. The study also investigated whether academic delay of gratification would be positively associated with obtained final course grade, after controlling for expected grade, rating of the course and the instructor, and the motivational determinants of delay of gratification. Findings suggested that academic delay of gratification was positively related to students' ratings of the course and teaching effectiveness. In addition, academic delay of gratification was a positive predictor of students' final course grades, even after controlling for the effect of rating of the course, expected grade, and the motivational values associated with delay of gratification. These results suggest that academic delay of gratification helps students to orchestrate their academic progress, enactment of goals, task completion, and eventual academic achievement. Thus, academic delay of gratification is an important factor associated with course grades, as well as course and instructor evaluations. Judging by its role in predicting students' final course grades, academic delay of gratification explains incremental variance in students' academic achievement.

The results of the present investigation suggest that students' expected course grade is by far the strongest predictor of their obtained course grade, even after controlling for rating of the course, delay of gratification, and its motivational determinants. It is not surprising that students' expected grade on the course is strongly associated with their academic achievement in the course. However, expectation of grade alone should not be the

focus of the students' motivation. Students need to learn how to use other factors to motivate themselves and to use learning strategies to develop mastery. Mastery orientation could also contribute to their outcome expectations. Surprisingly, a student's perception of the course was not associated with the grade she obtained in the course after controlling for expected grade.

Students' differential interest in, importance of, and utility value of the delay of gratification alternatives when presented with an immediately available but less valuable reward were significantly and positively related to their willingness to delay gratification. Students' perceptions of the utility value of the delay alternatives when presented with competing alternatives were positively related to final course grade. However, when utility value was placed in the prediction equation, it was not a significant predictor of final course grade. Moreover, differential interest and importance of the delay alternatives were not significantly associated with their obtained final grade. These findings suggest that, at least for some of the students, the non-delay alternatives were of significant attraction. For instance, the mean for interest in delaying gratification was actually below 0, and the means for importance and utility were approximately 1.5. Thus, at least some of the students may need to develop better self-regulation of learning skills (Pintrich & Zusho, 2007). The present investigation combined new techniques to assess the motivational determinants of delay of gratification among college students. On this point, Pintrich (1999) posited that assessing the motivational determinants by computing the differential preference was a commendable research approach to be considered.

I framed this investigation in the context of William James' (1899) call to teachers. James asked teachers to put their students in such a state of interest in the academic task that they would be willing to banish any distraction from their minds. This call contains a process in which both the teachers and the students must get involved in the learning process for the students to become active learners and motivational and behavioral architects of their knowledge and academic repertoire (Pintrich & Zusho, 2007; Zimmerman & Schunk, 2008). A response to

James' call and to contemporary instructional demands could be framed under the umbrella of the delay of gratification approach (Bembenutty, 2008a) and expectancy-value theory (Eccles, 2005; Wigfield & Eccles, 2000).

The present results are consistent with the notion that students who are willing to delay gratification are task-focused and would often avoid distracting factors that could detract from the value of the task and its completion. It is in this way that students with high tendencies to delay gratification activate their volitional strategies (Corno, 1993; Kuhl, 2000) to overcome distracting situations in the classroom and possibly even to avoid distraction derived from instructors' lack of skills or teaching effectiveness. Self-regulated learners take a proactive approach in the presence of obstacles (Corno, 2001; Zimmerman, 1998). However, their expected grade in the course needs to be orchestrated and combined with learning strategies to produce a long-term learning experience.

The present study represents an initial step toward understanding the mechanisms that are associated with students' tendency to delay gratification, expected course grade, and their perceptions of teacher effectiveness. In this initial step, I saw that the association between teachers' and students' characteristics is not only circumscribed or determined by the teachers' role of imparting knowledge, but also by the learners' ability to engage in self-regulation to secure mastery of class material and task completion.

Some words of caution are important. Seconding Brodie (1998), it is suggested that, "higher evaluations do not indicate that a professor is an effective teacher. Sometimes, a professor with the highest student evaluation may generate the least studying and produce the least learning" (p. 17). Similarly, Greenwald and Gillmore (1997a, 1997b) found in a study examining course workload and students' ratings of instructors that courses with higher grades were more liked by the students, but paradoxically, those courses required less workload. These findings also concur with McKeachie (1997, 2007), who observed that students' ratings are contextual variables that can be affected by grade leni-

ency and that statistical corrections of those ratings would not be sufficient to correct rating inflation. That is why it is important to consider all of the factors that may influence the ratings. These findings suggest that students' willingness to delay of gratification is an essential factor that determines student ratings. Examining that association would be important because it would imply that students' ratings reflect students' levels of learning and of workload because it is assumed that the students high in delay of gratification tend to be those who put more effort into their tasks, do most of the homework, sacrifice immediate gratification to attend academic demands, and obtain higher grades.

Limitations of the Study

This study has a number of limitations. First, this study is correlational in nature and causation cannot be inferred from it. Second, an actual behavioral action of the students' delay of gratification was not assessed. Thus, it is unknown how the students would actually behave if they encountered the alternatives presented to them in this study. Third, other motivational determinants of delay of gratification were not considered, such as the cost of selecting either of the alternatives, social goals that could press in favor of a particular alternative, outcome expectancy for the final reward or goal, and degree of self-efficacy with regard to the student's competence for attaining academic goals. Fourth, in the present study, course evaluation and teaching effectiveness were assessed with only one single-item global rating each. Thus, the dimensionality of typical evaluations of teaching may have not been completely captured. On this matter, Marsh (2007) advocated for a profile of scores to capture the multidimensionality of teaching evaluations in order to give feedback to instructors and make personnel decisions. Although initially Abrami and colleagues (Abrami, d'Apollonia, & Rosenfield, 2007) appeared to support a global rating for personnel decisions, they adhere to a multidimensional form to assess teaching effectiveness (Abrami, Rosenfield, & Dedic, 2007).

Finally, although this study focused on the motivational determinants surrounding the relationship between students' ratings of teachers and course effectiveness, these evaluations encompass and are determined also by many other variables (Perry & Smart, 2007). As Nerger et al. (1997) put it, "evaluation of instruction is a highly complicated, but worthy activity" (p. 231). As they also reported, teaching effectiveness depends on the "class size, shape of the classroom, field of study, expressiveness of the instructor, students' grade expectations, and 'warmth' of the instructor. In other words, course variables and student and instructor variables can affect student ratings" (p. 218). Other variables that influence this association are seating position, class level, other courses taken during the semester, gender, and previous grades.

Directions for Future Research

Given that students' ratings depend upon the cyclical interaction among the approach used by the instructors, the classroom conditions, and the students' individual differences, it is important that future research examine the associations that have not been investigated in the present study. A behavioral assessment of students' choice for a delay of gratification alternatives is warranted. This could be done by interviewing the students, by giving them electronic devices to elicit a report of their activities at random intervals, by introducing distractions into computer programs to check how they would respond to distraction while doing computer assignments, and by observing them in places such as the libraries or the study hall. Future research is needed to replicate the association between students' delay of gratification tendencies and their perceptions of teaching and course effectiveness. Further, triangulation of data related to the evaluation of courses and instructors in which classroom observations, instructors' self-ratings, students' journals, and corroboration of the ratings provided in surveys such as the one included in the present study with the students' official ratings designated by the universities could be informative. Furthermore, instructors could

be trained in such a way that they could promote their students' willingness to delay gratification. For instance, when the instructors assign readings, homework assignments, papers, portfolios, or projects, they could provide suggestions to students regarding how to avoid distractions when competing alternatives arise. Instructors could help students to set goals, use weekly planners, manage their time, control their physical and social environment, and engage in self-monitoring and self-evaluation of academic tasks.

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Appendix A
Sample Item Assessing Academic Delay of Gratification (ADOG) With Interest, Importance, and Utility for Success Given Preference for Immediate Versus Delayed Alternatives

Situation 1

Suppose that you had a choice between . . .

A. Leaving the library to have fun with your friends and try to complete an assignment that is due the next day when you get home later that night , ***OR***
B. Staying in the library to make certain that you finish the assignment.

Which would you probably choose to do?

__Definitely choose A *__Probably choose A*
__Probably choose B *__Definitely choose B*

****

- How much would you **like** to leave the library to have fun with your friends?
  Not at all 0 1 2 3 4 5 *Very much*

- How much would you **like** to stay in the library to finish an assignment that is due the next day?
  Not at all 0 1 2 3 4 5 *Very much*

- How **important** would it be for you to leave the library to have fun with your friends?
  Not at all 0 1 2 3 4 5 *Very much*

- How **important** would it be for you to stay in the library to finish an assignment that is due the next day?
  Not at all 0 1 2 3 4 5 *Very much*

- How **likely** is it that you would complete the assignment if you left the library to have fun with your friends?
  Not at all likely 0 1 2 3 4 5 *Very likely*

- How **likely** is it that you would complete the assignment if you stayed in the library?
  Not at all likely 0 1 2 3 4 5 *Very likely*

Appendix B
Items Assessing Teaching and Course Effectiveness

Rating of the Instructor

- What is your overall rating of the teaching effectiveness of the instructor of this course?

  ____a. Much above average ____b. Above average
  ____c. Average ____d. Below average
  ____e. Much below average

Rating of the Course

- What is your overall rating of this course?

  ____a. Much above average ____b. Above average
  ____c. Average ____d. Below average
  ____e. Much below average