

MOTIVATION, INTEREST, AND POSITIVE AFFECT IN TRADITIONAL AND NONTRADITIONAL UNDERGRADUATE STUDENTS

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This study compares affective and motivational components of academic life for traditional and nontraditional university undergraduates. Traditional students are defined as those aged 21 and younger, who are most likely to have followed an unbroken linear path through the education system, whereas nontraditional students are defined as those aged 28 and older, for whom the undergraduate experience is not necessarily age normative. A total of 300 undergraduates ranging in age from 18 to 60 years were assessed on measures of intrinsic and extrinsic motivation to learn, interest, and positive affect. Nontraditional students reported higher levels of intrinsic motivation for learning than did traditional students. Intrinsic motivation correlated with positive affect more strongly for nontraditional than for traditional students. For all students, interest and age emerged as significant predictors of intrinsic motivation to learn, and both interest and intrinsic motivation significantly predicted positive affect.

Keywords: *nontraditional students; intrinsic motivation; interest; positive affect*

Globalization of knowledge, with a resultant accessible diversity of cultural and moral choices enabling growing individual autonomy, leads to what sociologists call a “detraditionalization” of social life (Hake, 1999). Periods of learning, work, unemployment, caregiving, or resting have spread throughout the course of life in recurrent cycles, sometimes resulting in a challenging combination of tasks for individuals when different life stages overlap (Glastra, Hake, & Schedler, 2004; Hake, 1999). Keeping pace demands an active engagement in knowledge and competence acquisition at each transition in the life course, such that lifelong learning has been defined as a necessary condition of survival in the 21st century (Glastra et al., 2004).

This recent trend away from social homogeneity in stage development has been reflected in the redistribution of age levels within the university undergraduate

population, partly through a delayed threshold of entry into adult life, sometimes referred to as the extension of youth, and partly due to an increase in the re-entry of older students into the system. A jumbling of the stages of life (Sales, Drolet, & Bonneau, 2001) has led to adult learners over the age of 25 becoming the fastest growing group of undergraduates in North America, accounting for between 30% and 50% of the undergraduate population during the past decade (Carney-Crompton & Tan, 2002; Graham & Donaldson, 1999; Kasworm, 2003; Sales et al., 2001).

Overall academic performance does not appear to be adversely affected by the substantial increase in the number of undergraduate students who work for remuneration either part-time or full-time while attending university (Sales et al., 2001). However, the rhythm of study is changed, usually through a need for time extensions to meet the requirements for program completion. In Canadian universities during the 1990s, fewer than half the students in their 3rd year of a bachelor's program followed a linear and continuous academic path in their post-secondary education programs (Sales et al., 2001). Increasing complexities in students' lifestyles and the subsequent blurring of transitions between stages in life has led to many postsecondary classrooms containing a mix of traditional and nontraditional students. This study explores the phenomenological distinction between older and younger students' experience within the intergenerational university classroom by testing hypothesized differences between two age groups (18 to 21 years vs. older than 27 years) on levels of motivation to learn, and relationships between age, trait interest, intrinsic motivation, and positive affect in a representative sample of university undergraduates.

Differences Between Traditional and Nontraditional Students

Adult students approach learning in the context of life application (Knowles, 1984). By making connections to an existing broad-based knowledge schema, older students are more likely to integrate new learning with various life roles in a more multidimensional way compared to younger students (Donaldson, 1999). For example, Graham and Donaldson (1999) found that whereas younger students

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interacted primarily with peers and in peer-related activities, older students were less involved in campus activities and more likely to be involved in caring for family. Despite this trend, older students demonstrated a growth equal to or greater than younger students across a series of 26 academic and intellectual development measures. Similarly, Carney-Crompton and Tan (2002) found that nontraditional students performed at higher academic levels than traditional students despite having more extracurricular stressors (e.g., familial responsibilities), whereas depression and anxiety scores remained comparable in the two groups. Older students found in-class learning experiences and relationships with faculty more meaningful than did younger students and employed a variety of techniques to compensate for the compressed time on campus (Donaldson, 1999).

Age has been measured as a predictor for cognitive maturity and strategies in learning styles in university students (Alexander, Murphy, Woods, Duhon, & Parker, 1997; Gadzella, Stephens, & Baloglu, 2002; Justice & Dornan, 2001; Macpherson, 2002). If older students approach learning in a qualitatively different way from younger students, as the evidence suggests, then we might expect to find that levels of motivation and affect also co-vary with age. Kasworm (2003) explored adult students' understanding of their learning experiences as undergraduates and found that despite the heterogeneity that comes with age, older students as a group reported a strong sense of both intrinsic and extrinsic motivation for learning, along with an awareness of how these each influenced their learning experience. If age is associated with greater levels of complexity in student life, then it follows that intrinsic motivation levels might be higher in older students who persist in their commitment to attain a degree. This raises the question, Do older students need a higher threshold of interest in learning to meet the demands of university performance than younger students?

Carney-Crompton and Tan (2002) suggest that in addition to opportunities offered by external environmental contexts, a self-selection process retains only those individuals with high self-efficacy, a strong intrinsic motivation to learn, and the capacity to commit to a long-term engagement to return to university. University attendance is a normative sieve for the younger adult, but atypical for the older adult, so that more capable and resilient individuals will be self-selected as nontraditional undergraduate students. For this type of individual, self-improvement and personal growth are equal to or more important than extrinsic goals such as job, career, financial opportunities, or societal expectations. Strong intrinsic motivation may be necessary for nontraditional students to persist and succeed in the university environment over the long term.

Intrinsic and Extrinsic Motivation

In the academic context, intrinsic goal orientation is the degree to which students perceive themselves to be participating in a learning task for reasons such as challenge, curiosity, and mastery (Pintrich, Smith, Garcia, & McKeachie,

1991). Being intrinsically motivated in an academic task indicates that the student's participation in the task is an end in itself. An intrinsically motivated student is likely to display autonomy and employ self-initiated exploratory strategies. By contrast, for a student high in extrinsic goal orientation, engaging in a learning task is the means to an end. An extrinsically motivated student seeks approval and external signs of worth and is more likely to ask procedural questions than content-enhancing questions (Sansone & Smith, 2000).

Vallerand and Bissonnette (1992) assessed intrinsic and extrinsic motivational styles as predictors of behavioral persistence in college students. They found that students who persisted in their studies had higher initial levels of intrinsic motivation toward academic activities in general than did students who dropped out, whereas extrinsic motivation did not predict persistence. Similarly, Jacobsen (2000) found traditional students had higher extrinsic goal orientation scores than nontraditional students on the Motivation subscale of the Motivated Strategies for Learning Questionnaire (Pintrich et al., 1991). Vansteenkiste et al. (2004) demonstrated that students placed in an intrinsic motivation condition processed reading material more deeply, achieved higher grades, and showed more persistence than students placed in an extrinsic condition. The literature suggests a meaningful relationship between type of motivation and student persistence, achievement, autonomy (Glastra et al., 2004), and age. However, most studies of motivation to learn in undergraduate students are limited to single-domain samples (e.g., introductory psychology courses). This study was designed to collect a representative sample of volunteers from the full university population, including diversity in faculty enrollment and sociodemographics as well as age.

In addition, many studies have replicated findings that an extrinsic reward can undermine intrinsic motivation for a task (Deci, Koestner, & Ryan, 1999), and since the early 1970s there has been controversy about the competitive nature of these two motivational constructs. Although intrinsic motivation is considered to promote psychological well-being through feelings of personal accomplishment and self-esteem, extrinsic motivation can potentially boycott genuine interest in a learning task and discourage subjective well-being in the classroom. Yet grade-achievement goals remain the focus in undergraduate programs. The current consensus is that intrinsic and extrinsic motivation codetermine in various ways the engagement in, and resulting quality of, a learning experience. The primary goal of this study was to investigate how the balance of these two motivational types within the academic environment might differ according to the age of the undergraduate student. It was hypothesized that nontraditional (older) students would report higher levels of intrinsic motivation, whereas traditional (younger) students would conversely report higher levels of extrinsic motivation. Confirmation of this finding would then lead to a comparison of higher levels of intrinsic motivation to learn with higher levels of interest and positive affect as a function of student age.

The Emotion of Interest

Interest has been defined as the most basic and ubiquitous of universal motivating emotions for humans (Izard, 1977, 1993). Differential emotions theory describes how the emotion of interest motivates focused attention, receptivity to information, and learning across situations and throughout the life span (Dougherty, Abe, & Izard, 1996). According to Sansone and Smith (2000), the proximal motivator for persistence and subsequent engagement, particularly for activities that take place over the long term, is the degree to which one experiences interest and enjoyment in a particular task. High levels of interest are necessary to trigger and maintain a strong intrinsic motivation for learning (Hidi, 2000). Consedine, Magai, and King (2004) have demonstrated that interest is associated with greater education and that it may be the primary affective component of the engaged lifestyle for adults in later life.

Individual interest has been described as the energizing force behind intrinsic motivation (Alexander et al., 1997). Although individual interest and intrinsic motivation are two separate constructs, they predict similar outcomes in that they both create and sustain a deepening involvement with content and affect over time. Situational interest, by contrast, corresponds to extrinsic motivation in that it is "caught" from external stimuli and "held" only as long as the external stimuli are present (Hidi, 2000). Both situational interest and extrinsic motivation are outcome oriented in that a reward outside the activity itself motivates engagement with that activity. Situational interests are transient or temporarily goal serving, whereas individual interests are considered to be relatively stable and long lasting. It follows that younger undergraduates at identity-forming stages in their lives might be more likely to be experiencing situational interests, thus reporting higher levels of extrinsic motivation for learning, whereas older undergraduates might be in a position to have established enduring individual interests and thus to experience higher levels of intrinsic motivation for learning.

Renninger (2000) explains that when an individual interest is atypical of an age or a gender, it is likely to be more intense than the interest of those for whom it is typical. She indicates that frustrated pursuit of an interest has been identified as a contributor to later achievement for some individuals (Coren, 1997). This phenomenon might apply to the highly motivated nontraditional student finally returning to school after years in the workforce, or to students who have been delayed in the completion of their program of study by life tasks external to their university experience. Accordingly, it was hypothesized in the current study that both age and students' self-reported interest would predict intrinsic motivation to learn.

Positive Affect

In addition to other qualitative differences in learning processes and outcomes, intrinsic motivation has also been consistently distinguished from extrinsic motivation

by its association with positive affect (Higgins & Trope, 1990; Kaplan & Maehr, 1999; Ryan & Deci, 2000; Schiefele, 1991). Engagement with an intrinsic goal, such as learning for the sake of self-development, actually promotes subjective well-being in the satisfaction of basic psychological needs (Deci & Ryan, 2000). Likewise, the overlap between interest and its reinforcing positive affective qualities has been repeatedly demonstrated (Izard, 1993; Kashdan, Rose, & Fincham, 2004; Peterson & Seligman, 2004; Sansone & Smith, 2000). For example, Csikszentmihalyi (1997) has described the *autotelic* or intrinsically motivated person as one who pays attention to things for their own sake without expecting an immediate return, is capable of sustained interest without recognition or with little support, and becomes caught up in the feedback loop between learning, interest, and enjoyment. The flow experience acts as a magnet for learning; an individual can enter the flow state by learning new skills, increasing challenges, or adding new cognitive layers to existing interests built on the foundation of past experience.

Csikszentmihalyi (1990) distinguishes between authentic or “free choice” projects and inauthentic or “should do” projects. To reach an inner congruence between our goals, our activities, and our affective state (flow), we create meaning through new learning challenges that absorb and delight. Csikszentmihalyi equates authentic intrinsically motivated projects with “discovered” life themes, where a person writes his or her own script for action out of personal experience and awareness of choice. Inauthentic projects, or “accepted” life themes, occur when a person simply takes on a predetermined role from a script written by others, such as young undergraduates might do when following their parents’ desire that they study in a particular field. Given that intrinsic motivation, curiosity, interest, and flow are phenomenologically similar and include positive affect (Kashdan & Fincham, 2004), we can expect to find evidence of a unique synergy between motivation and affect in older students demonstrating higher levels of intrinsic motivation to learn.

Taylor, Marienau, and Fiddler (2000) provide a relevant concise description of the critical importance of emotion in the process of meaning-making for developing adult learners, but the existing literature does not fully explore the emotional mechanisms underlying the affect-cognition-motivation triangle for older adult students beyond measuring test anxiety and acknowledging student worry and concern. By tracing the predictors of positive affect in undergraduate students, and investigating how they might interact differently depending on student age, this study hoped to provide a deeper understanding of motivation and affect in classrooms of diverse student age.

Hypotheses

This study hypothesized that nontraditional students would report higher levels of intrinsic motivation than traditional students, whereas traditional students would report higher levels of extrinsic motivation than nontraditional students. A

second hypothesis was that both trait interest levels and student age would positively predict intrinsic motivation for academic studies. Third, it was expected that age, interest, and intrinsic motivation would predict positive affect. Finally, the relation between intrinsic motivation and positive affect was expected to be stronger for nontraditional students than for traditional students.

METHOD

Participants

A total of 300 undergraduates from a midsized urban university were recruited from a booth set up in the lobby of the main campus library. Each participant received 10 dollars for completing a questionnaire battery. Comparisons of the characteristics of this study's participants ($N = 300$) with those of the total university's undergraduate population ($N = 26,226$) confirmed that it was a representative sample of the total university population in proportional terms of faculty enrollment, gender, and age.¹ Of the participants, 50% were registered in the faculty of arts and sciences, 20% in the business faculty, 20% in engineering, and 10% in other programs. A total of 56% of the study participants were male. Participants' age ranged from 18 to 60 ($M = 25$, $SD = 6.64$), and 74% were attending university on a full-time basis. Of the 61% of participants who were working in addition to going to school, 13% worked 21 hours per week or more, and 48% worked 20 hours per week or less.

Materials

Participants filled out a short demographic form, requesting information about their age, faculty, enrollment status (full-time, part-time), type of living arrangement, number of dependents, best source of financial support (predominantly parents, spouse, self, scholarship, or financial aid), number of hours worked for remuneration during the school year, and previous school or occupational experience. In addition, the following three self-report questionnaires were used in this study:

1. The Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich et al., 1991) is designed to assess college or university students' motivation orientations and their use of different learning strategies for a given course. It was chosen for this study because it is context bound yet appropriate for use with all students regardless of faculty. Only the 31 motivation questions were used in this study, and data analysis was limited to the subscales of Intrinsic and Extrinsic Goal Orientation. Intrinsic goal orientation concerns the degree to which students perceive themselves to be participating in a task for reasons such as challenge, curiosity, or mastery. With extrinsic goal orientation, students' primary concerns are related more to aspects such as grades, rewards, or performance comparison. Students rated themselves on a 7-point Likert-type scale from "not at all true of me" (1) to "very true

of me”(7) on items concerning how they felt about the most recent class they had attended. Predictive validity analysis has shown that the Intrinsic Goal Orientation subscale correlates significantly in a positive direction with final grades, whereas the Extrinsic Goal Orientation subscale does not. The coefficient alphas for the Intrinsic and Extrinsic Goal orientation subscales yielded internal consistency estimates of .74 and .62, respectively. Previous analyses have shown that the Motivation scales tend to be negatively skewed, with means over 5 on a 7-point scale, indicating that most students report high motivation levels (Pintrich, Smith, Garcia, & McKeachie, 1993). Yet the scale’s robust psychometric properties make it both a reliable and a valid way to assess intrinsic and extrinsic motivation to learn.

2. Differential emotions theory posits that interest is a stable and enduring trait that always motivates focused attention, receptivity to information, and learning (Izard, 1993). This view of interest as a motivational subsystem of personality is compatible with the concept of individual interest discussed in this study. The Differential Emotions Scale IV-A (DES; Izard, Libero, Putnam, & Haynes, 1993) measures levels of discrete emotions by asking participants how often they feel a particular emotion in their daily lives, allowing the participant to select from a 5-point scale ranging from *rarely or never* (1) to *very often* (5). Repeated use of this test has demonstrated its sensitivity in measuring trait levels of 12 discrete emotions. This study analyzed only the three Interest subscale items (e.g., “How often do you feel so interested in what you’re doing that you’re caught up in it?”). Each item’s content was derived from cross-cultural research on emotion-expression labeling and then further refined through confirmatory factor analysis and other psychometric techniques. The coefficient alpha for the Interest subscale has been measured as .75, and correlations among the DES scales and the Personality Research Form scales show that interest correlates significantly with achievement, affiliation, endurance, and understanding (Izard et al., 1993).
3. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is composed of 20 descriptive terms to be rated on a 5-point scale. Participants were asked to what extent they had experienced a particular emotion during the past year and they responded with an answer varying from *very slightly or not at all* (1) to *extremely* (5). Watson et al. (1988) report a high coefficient alpha of .86 for positive affect over the past year. The PANAS has also shown strong test-retest reliability; the longer the rated time frame, the greater the test stability in both student and nonstudent samples. The scale was chosen for use in this study because of these reliabilities as a global measure of affect. Responses to the following 10 words in the PANAS provided this study’s outcome measure of positive affect: *interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive, and active*.

Procedure

All 300 participants completed the questionnaires. Two groups on the extremes of the sample were delineated, resulting in students ages 21 and younger ($n = 108$, $M = 20$, $SD = 1.0$) as the traditional group and students ages 28 and older ($n = 61$, $M = 35$, $SD = 7.6$) as the nontraditional group. Traditional students were defined as those most likely to have followed an unbroken linear path from high school into a university undergraduate program and to belong to an age group for whom attending school is a relatively normative experience. Nontraditional

students were defined as those who re-entered school after time experiencing nonacademic life events or those for whom the undergraduate experience is non-normative for their age group in that they may be combining it with other major life tasks. This resulted in a representative 2-to-1 ratio of traditional to nontraditional aged students, consistent with other studies (e.g., Graham & Donaldson, 1999). Levene's test for homogeneity of variance showed no significant differences between the two groups, indicating no violation of the assumption for ANOVA when using unequal sample sizes.

Having defined students by age as either traditional or nontraditional to enable comparisons based on contrasting life stages, clear sociodemographic differences were now apparent between the groups. For sources of financial support, 68% of traditional students reported their parents as a primary source of income, whereas nontraditional students were either self-supporting (36%); funded through government loans, bursaries, or scholarships (36%); or supported by a spouse (23%). Only two of the traditional-student group had at least one child of their own to support, whereas 40% of the nontraditional group did. Of traditional students, 83% reported full-time enrollment as compared with 62% of nontraditional students. Interestingly, a greater percentage (62%) of the younger students reported working in addition to attending school than did the older students (52%), although these figures represent primarily part-time employment (20 hours per week or less).

RESULTS

Prior to conducting data analysis, any missing data (less than 1%) were replaced by the numerical mean of the total sample for that item. Neither skewness nor outliers required transformation or conversion. The analysis was designed, first, to explore differences between the traditional and the nontraditional student subgroups, and second, to use the entire student sample to test hypothesized predictors of intrinsic motivation and positive affect.

Group Differences

A mixed factorial analysis of variance (ANOVA) was conducted to test whether traditional ($n = 108$) and nontraditional ($n = 61$) students reported significantly different intrinsic and extrinsic motivation scores. A trend was revealed at the between-group level, with traditional students reporting slightly less motivation overall than nontraditional students, $F(1, 167) = 3.1, p < .10$. Type of motivation scores compared did not significantly differ. The ANOVA revealed a significant interaction between student category and motivation type, $F(1, 167) = 4.0, p < .05$, with older nontraditional students reporting higher mean levels of intrinsic motivation than did traditional students.

To confirm the ANOVA interaction results, post hoc tests of simple effects were performed. The mean difference between the traditional and nontraditional

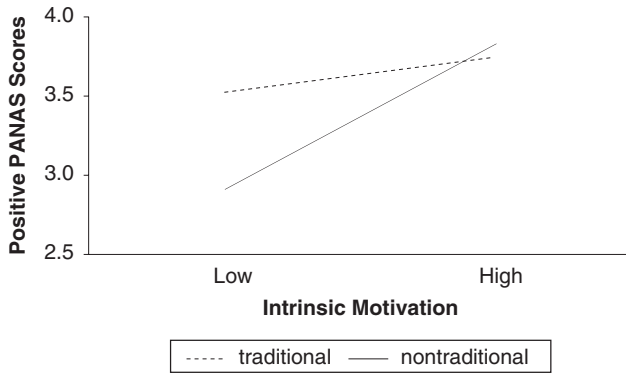


Figure 1: Levels of Positive Affect for Traditional and Nontraditional Students as a Function of Intrinsic Motivation

NOTE: PANAS = The Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988).

student groups for intrinsic motivation was significant at the .05 level, $F(1, 167) = 8.4, p < .01$, with the nontraditional student group reporting higher mean scores ($M = 5.59, SD = 0.13$) than the traditional group ($M = 5.10, SD = 0.10$). The effect size of the interaction was moderate, Cohen's $d = .25$.

A multiple regression predicting positive affect revealed a significant interaction between intrinsic motivation and student groups. After controlling for the main effects of student group and intrinsic motivation, the interaction term predicted an additional 5% of the variability in positive affect, $\beta = .26, F_{ch}(1, 165) = 8.81, p < .01$, indicating that the relationship between intrinsic motivation and positive affect is different for traditional as opposed to nontraditional students. As shown in Figure 1, the association between positive affect and intrinsic motivation is significantly weaker for traditional students ($r = .19, p < .05$) than for nontraditional students ($r = .48, p < .001$).

Predictors of Intrinsic Motivation

Correlations between the variables of age, interest, intrinsic motivation, extrinsic motivation, and positive affect for all participants are shown in Table 1.

Two standard multiple regression analyses were conducted to further explore the role of intrinsic motivation for learning in the full sample of 300 undergraduates. The purpose of the first analysis was to determine how much of the variance in MSLQ intrinsic motivation scores was predicted by student age and by interest levels on the DES. In the first regression, interest and age predicted 11% of the variance in intrinsic motivation, $R = .34, F(2, 297) = 19.35, p < .001$ (see Table 2). Although age contributed significantly to the likelihood of a student

TABLE 1
Correlations for Age, Interest, Intrinsic and Extrinsic Motivation, and Positive Affect ($N = 300$)

Measure	1	2	3	4	5
1. Intrinsic motivation	—				
2. Extrinsic motivation	.17***	—			
3. Interest	.32**	.01	—		
4. Positive affect	.28***	.03	.57***	—	
5. Age	.16***	-.03	.11*	.03	—

* $p < .10$. ** $p < .05$. *** $p < .01$.

TABLE 2
Multiple Regression Analysis for Variables Predicting Intrinsic Motivation

Variable	B	SE B	β	t
Interest	.16	.03	.30	5.53***
Age	.02	.01	.12	2.21**

NOTE: $F(2, 297) = 19.35***$, Adj. $R^2 = .11$.

** $p < .05$. *** $p < .01$.

TABLE 3
Multiple Regression Analysis for Variables Predicting Positive Affect

Variable	B	SE B	β	t
Interest	.17	.02	.54	10.70***
Intrinsic motivation	.08	.03	.12	2.42**
Age	-.01	.01	-.05	-1.00

NOTE: $F(3, 296) = 50.22***$, Adj. $R^2 = .33$.

** $p < .05$. *** $p < .01$.

being intrinsically motivated, interest emerged as the more important predictor of intrinsic motivation.

Predictors of Positive Affect

The second standard regression analysis indicated the extent to which age, interest, and intrinsic motivation predicted levels of positive affect on the PANAS. Together, interest and intrinsic motivation predicted 33% of the variance in positive affect, $R = .58$, $F(3, 296) = 50.22$, $p < .001$. The strongest predictor of positive affect was interest, followed by intrinsic motivation (see Table 3). Age did not

make a significant unique contribution to the prediction of positive affect, which is consistent with the results, described above, of the interaction between intrinsic motivation and student age group in predicting positive affect.

DISCUSSION

The examination of intrinsic and extrinsic motivation levels in traditional and nontraditional undergraduate students reveals a trend for nontraditional students to report slightly more motivation overall than traditional students, primarily due to nontraditional students' reporting significantly higher levels of intrinsic motivation than traditional students. This expected finding is consistent with the results of Justice and Dornan's (2001) study, which reported that Intrinsic Goal Orientation was the only subscale of the MSLQ to differ significantly across student age groups. However, contrary to both Jacobson's (2000) findings and the first hypothesis of this study, no difference between the two student age groups emerged on the MSLQ Extrinsic Motivation subscale. Both traditional and nontraditional students in this study reported equal amounts of extrinsic motivation to learn, which may reflect the fact that the defining conditions of success within the classroom itself, as well as degree requirements, are the same for all.

As hypothesized, both interest and age were significant predictors of intrinsic motivation for learning in undergraduates. Also as expected, interest and intrinsic motivation predicted positive affect. Student age by itself, although correlated with both interest and intrinsic motivation, was not a significant predictor of positive affect. The relationship between student age and positive affect was defined by an interaction between student age group and intrinsic motivation in the prediction of positive affect. Nontraditional students reported a significantly higher change in positive affect as a function of intrinsic motivation than traditional students reported. These results elucidate the age-differentiated role of affect not just as an outcome, but more important, as a result of the mediation of intrinsic motivation to learn. In other words, it appears that nontraditional students maintain a higher threshold of intrinsic motivation to learn with an accompanying increase in positive affect. Younger students do not report the same degree of need to enjoy the educational process to persist within the system as do older students.

In addition to replicating past findings that nontraditional undergraduates report higher levels of intrinsic motivation to learn, and showing that levels of trait interest predict intrinsic motivation to learn in classroom settings, this study is unique in describing how age and intrinsic motivation to learn interact to produce positive affect. A closer examination of the relationship between these variables will provide direction for improved pedagogical success with the older adult student population.

Age Differences in Motivation to Learn

In this study, older undergraduates did not differ between levels of intrinsic and extrinsic motivation to learn, indicating that the two goal orientations are

equally present for them in the undergraduate academic setting, creating an oppositional pull to potential flow experiences. Contingency conditions, such as those prevalent in the competitive university environment, can change any activity from having an intrinsic to an extrinsic orientation (Higgins & Trope, 1990). An individual may be highly intrinsically motivated to learn, but the process of engaging in a learning task itself is not necessarily accompanied by positive affect. Vansteenkiste et al. (2004) found that although a combination of intrinsic and extrinsic goals promoted better learning outcomes than extrinsic goals alone, adding an extrinsic goal to an already existing intrinsic goal interferes with participants' performance and persistence. However, extrinsic learning goals may have a role in encouraging the completion of assigned tasks within the context of meeting course requirements on time. As positive affect dissipates in the face of deadlines, assignments, and evaluations, either self-regulation or high levels of intrinsic motivation have to take over as predictors of persistence. Extrinsic motivation does not correlate with interest, age, or positive affect, yet overall, students report equal amounts of both intrinsic and extrinsic motivation levels. Whether extrinsic motivation levels are undermining potentially higher levels of intrinsic motivation and positive affect, or whether extrinsic motivation with its accompanying tensions, anxieties, and pressures actually augments the effort to succeed in the college environment, remains undetermined. What is clear from this study, however, is that the relationship between intrinsic motivation and positive affect differs for traditional as opposed to nontraditional students.

Age Differences in Positive Affect

Even though age and positive affect have a significant zero-order positive correlation, once the effects of interest and intrinsic motivation are partialled out, age does not make a unique contribution to the explanation of positive affect. This points to the inextricability of affect from cognition in the learning process for older students. The benefit of examining the combined effects of variables in addition to their respective individual predictive values is shown by the example of the multiple regression predicting positive affect by levels of intrinsic motivation as a function of student group. It revealed that positive affect is not necessarily a direct outcome of the learning experience for older adult students but rather appears to be embedded in the motivational process, whereas positive affect for younger undergraduates is more independent of intrinsic motivation to learn.

Meyer and Turner (2002) report that they have come to view emotions as mediators in the process of learning, as synergistically related motivational components entwined with real-life activities. This study shows that this is especially true for the nontraditional undergraduate population. Hidi (2000) also writes of the affective-cognitive synthesis and describes how both interest and intrinsic motivation can be maintained even in the presence of negative feelings. In a model of curiosity proposed by Kashdan et al. (2004), cognitive rewards are more salient than affective ones, and these researchers report that curiosity loads onto

an independent factor apart from hope, optimism, positive affect, well-being, and life satisfaction. The implication is that the teaching of older adults requires a dual motivational approach, including both cognitive and affective elements. Young adults as a group do not report as great a need to be intrinsically motivated to learn in order to experience positive affect as do older adult students.

The role of positive affect in this study may be further elucidated through a deeper consideration of the nature of interest. According to Izard's (1977) differential emotions theory, interest, like each of the other basic emotions, contains motivational properties that uniquely combine specific proportions of "positive" and "negative" affect. In the academic context, for example, interest's high correlation with achievement (Dougherty et al., 1996) could be as much related to an extrinsic competitive need as it is to an intrinsic interest in the relevant subject. Consedine et al. (2004) describe systematic differences between interest and joy and provide empirical evidence that the two do not usually co-vary. Interest transcends its taxonomy in positive psychology to have critical adaptive value in stressful negative situations as well as in chosen tasks of a positive nature. Even in its listing under the character strength of curiosity in Peterson and Seligman's (2004) classification, interest is described as inseparable from anxiety and approach-avoidance conflicts. Thus, interest may correlate strongly with positive affect but is far from synonymous with it.

Reviewing the distinction between individual interest and situational interest is also helpful in understanding the role of positive affect in the learning process. Bergin (1999) writes "emotions toward content do not have to be positive to foster interest in learning" (p. 90). He suggests that although positive affect is characteristic of *individual* interest, *situational* interest can, and often does, operate independently from subjective liking. Similarly, Hidi (2000) refers to the positive nature of individual interest and suggests that situational interest may be more vulnerable to the detrimental effects of extrinsic pressures. Although similar levels of extrinsic motivation were reported by all students in this study, *types* of extrinsic motivation may vary between younger and older students in reaction to age-differentiated extracurricular social and/or financial stressors, making extrinsic factors potentially more salient for the nontraditional group.

Pedagogical Implications

The unique relationship between motivation and positive affect levels for nontraditional students revealed by this study implies that an emphasis on the reinforcement of intrinsic motivation in the intergenerational classroom will lead to higher levels of positive affect, which in turn will lead to better coping, psychological resilience, and persistence in academic goals (Fredrickson & Joiner, 2002; Vallerand & Bissonnette, 1992). For the older student in particular, special attention could be given by professors to the encouragement of perceived competence in academic endeavors, to the promotion of autonomous behaviors, and to

the validation of the student as an active partner in a shared learning experience designed to increase both intrinsic motivation and positive affect, making learning more enjoyable (Csikszentmihalyi, 1997; Renninger, 2000). Unnecessary criticisms or directives are best avoided for their counterproductive effects on motivation and affect (Deci & Ryan, 2000) in older students who are juggling competing demands for resources and who are already subject to higher comparison levels of alternatives. By minimizing extrinsic pressure where possible, and maximizing curiosity, interest, and flow in the classroom, the teacher can create conditions leading to an upward spiral of positive growth for the older adult student (Fredrickson & Losada, 2005; Kashdan & Fincham, 2004). Humor, respect, and social support within the classroom nurture the nontraditional student's academic experience (Bergin, 1999), creating an opportunity to turn a domain-specific interest into an individual interest in learning (Alexander et al., 1997). In summary, this study's results, showing that intrinsic motivation to learn correlates more highly with positive affect for older students than it does for younger students, implies a greater need among nontraditional students to simply enjoy the process of mastering new skills in the classroom. The challenge for both students and educators lies in maintaining an optimal balance between intrinsic and extrinsic forms of motivation for learning.

CONCLUSION

A possible limitation to this study's predictive validity might be the use of both global and specific measures. Although levels of situational motivation for learning were evaluated with the MSLQ by asking questions about "the most recent class you attended," the DES and the PANAS are global measures that asked questions relating to "how you feel in your daily life" and "to what extent you experienced . . . during the past year," respectively. Some participants' answers to the Interest and Positive Affect subscale questions might have had reference to personal events and feelings unrelated to the learning environment per se, confounding the results and weakening correlations.

Interest emerged as the strongest predictor of both intrinsic motivation for learning and positive affect in this study. Individuals with greater levels of trait interest are predisposed toward seeking knowledge, which in turn leads to life-long learning (Consedine et al., 2004). The broaden-and-build theory of positive emotions includes interest as one of the emotions that can broaden people's momentary thought-action repertoires and build their enduring personal resources, ranging from physical and intellectual resources to social and psychological ones (Fredrickson, 2001). Both of these ideas are consistent with research exploring the benefits of the engaged lifestyle for older adults (Arbuckle, Maag, Pushkar, & Chaikelson, 1998; Gold et al., 1995), which suggests that active engagement in life enhances both psychological and physical health functioning. According to Vaillant (2004), perseverance with education throughout the life span

is one of the factors allowing us to predict positive health 30 years into the future. This would suggest that understanding how motivational constructs vary with age may have implications beyond the domain of education.

All current students, whether traditional or nontraditional or somewhere in between, will eventually face the challenges of middle and later life development. The exercise of building a stronger positive correlation between age, motivation, and positive affect within the university undergraduate environment will promote resilience in students. This study's results showing that nontraditional students report higher levels of intrinsic motivation to learn than do traditional students, further supported by the analyses of (a) how age and interest jointly determine intrinsic motivation, (b) the degrees to which interest and intrinsic motivation predict positive affect, and (c) the mediating role of intrinsic motivation in the prediction of positive affect for nontraditional students, suggest that further research on the cognition-motivation-affect triangle in adult development would be beneficial not just for undergraduates but for all lifelong learners.

NOTE

1. Descriptive data on total university population were obtained from Concordia's Record Management and Stats Group, with help from Enrollment Services.

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