Manuscript title

Adult learners and academic achievement:
The roles of self-efficacy, self-regulation, and motivation

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Adult Learners and Academic Achievement:
The Roles of Self-Efficacy, Self-Regulation, and Motivation

Abstract

Whether be it in traditional or virtual classrooms, non-traditional learners come equipped

with an eclectic blend of characteristics and past experiences, which serve to either

facilitate or hinder their academic pursuit. Adults who possess a strong sense of efficacy,

employ a wide range of self-regulatory strategies, and maintain high motivational levels

during the course of their learning are likely to be successful. In contrast, those who

doubt their abilities, lack metacognitive activities, and exhibit low motivational levels

tend to fail at accomplishing their goals. This paper sheds some light on the importance

of self-efficacy, self-regulation, motivation, and their "synergistic" effect on adults'

academic achievement. Implications for online educators are discussed.

Introduction

Adult education can be conceived of as the acquisition of knowledge or skills that can be achieved through enrolling full-time at an educational institution, participating in adult education activities, or engaging in self-instruction (Johnstone & Rivera, 1999). The number of adults opting for this mode of learning has been rising significantly. For example, in 1991, nearly 58 million adults had taken part in adult education activities, including part-time credential programs. Eight years later, that number had grown to an estimated 90 million adults (Kim & Creighton, 1999). In the same vein, distance education programs are becoming an increasingly ostensible feature of postsecondary education. According to the National Center for Education Statistics, 1,363,670 learners enrolled in college-level, credit-granting distance education courses in the 1997-98 academic year (Lewis, Farris, Snow, & Levin, 1999). Three years later, that number more than doubled (Waits & Lewis, 2003).

As those figures continue to proliferate during the next decades, educators ought to gain a working familiarity with the evolving characteristics of adult learners and be sensitive to their diverse needs in order to better facilitate their academic journey to success and personal growth. For example, adults walk in to class with a wide range of intra-personal attributes, social, and cultural experiences that shape their educational quest and their response to it. For example, there are those who may be extremely confident in their academic prowess, may have successfully completed their undergraduate degrees, started a family and a career, and now decide to enroll in graduate school to fulfill their dreams or climb up the socioeconomic ladder. On the other hand, other adults may have never attended college, or did so poorly in it the first time around

that they may have decided to drop out. Upon their return to higher education, they may

lack confidence, feel nervous, or doubt their abilities and competence to successfully

engage in and cope with various learning tasks. When learners are self-efficacious, they

are likely to engage in monitoring their learning process and progress and be motivated to

exert the necessary efforts to reach their academic goals (Schunk, 2001). The aim of the

present paper is to examine the self-efficacy, self-regulation, and motivation of adult

learners, and their "synergistic" effect on academic performance and achievement.

Self-Efficacy Beliefs

Self-efficacy refers to the beliefs people hold about their abilities to perform

certain tasks and accomplish specific goals (Bandura, 1986). Bandura (1994) has

contended that learners who possess high levels of self-efficacy are not intimidated and

challenged by complex assignments and projects, which they see as an opportunity for

growth and mastery. Even when things go awry, they do not give up easily and interpret

failure as a temporary hurdle that they will eventually overcome. These learners tend to

quickly resurrect their shortcomings by putting up their resilient selves and maintaining

the necessary efforts to perform successfully and achieve their aims, which ultimately

serves to enhance their well-being. On the other hand, individuals with low self-efficacy

levels feel threatened by difficult tasks and tend to avoid them. They do not appear to

have a strong commitment towards reaching their goals and may have a tendency to seek

less cognitively demanding environments. Also, they are apt to relate failure to their lack

of abilities, give up quickly, and do not persist when they encounter adversities. Schunk

(1991) explicated that failure can be detrimental to self-efficacy especially when it is

related to attempting something for the first time. As an example, adult learners with a

fragile sense of efficacy may be more vulnerable to failure when they take on a new field

of study, or when they enroll in certain distance-learning programs where they might

encounter difficulty obtaining the immediate and sufficient amount of support and

feedback vis-à-vis coping with various aspects related to this novel mode of learning.

Similarly, the memory efficacy of older adult learners is likely to decline when they

attribute their meager performances to normative-age graded influences (Welch & West,

1995). In addition, such low efficacy levels may not only restrict these adults' scope of

activities, but they are also likely to weaken those that they take part in

(Bandura, 1994).

How do some individuals develop highly efficacious beliefs, while others seem to

always doubt their abilities? Bandura (1994) believed the answer lies in the following

four factors that stretch over the life-span continuum. One influential source has to do

with people's vicarious capability, which is one of the main tenets underlying Bandura's

social cognitive theory. It refers to individuals' ability to learn new behavior through

observing the behaviors and consequences of social models. Learners form cognitive

templates corresponding to models' reactions and contingencies, which serve to guide

their future behavior. Learning by observation involves four separate processes (Brown,

1999): First is the attentional span referring to one's ability to selectively attend to various

events in the environment. This selective attention is influenced by characteristics of the

observer, such as his or her expectations or level of emotional arousal. The second

process is called retention processes and has to do with the observer's ability to make

symbols and store them for later use. The reproduction processes constitute the third

process; they are related to the conversion of those symbols into overt behavior. Finally,

motivational processes suggest that the probability of an individual to model a certain

behavior is dependent upon the contingencies involved. Schunk (1991) adds that the

perceived similarity in competence between models and observers is another variable that

may influence the outcome of observational learning.

The second way that self-efficacy can be influenced is through mastery

experiences. When people establish a record of successful accomplishments in different

contexts, it serves as a potent "vaccination" against later challenges and adversities they

might encounter. In other words, the strong immunity that they possess as a result of

their past successes helps them persevere in the face of failure. The third way, social

persuasion, refers to the verbal, persuasive messages that people attend to regarding their

abilities or deficiencies to accomplish certain tasks. Learners who have been convinced

that they have the capabilities and potential to succeed are expected to exert much more

effort than those who have been told otherwise. Finally, physiological reactions can play

a critical role in terms of how an individual judge his or her abilities. For instance,

"people who have a high sense of efficacy are likely to view their state of affective

arousal as an energizing facilitator of performance, whereas those who are beset by self-

doubts regard their arousal as a debilitator" (Bandura, 1994, p. 3).

The different levels of efficacy beliefs that students possess may not only

influence the amount of effort they exert in academic tasks but also the type and quality

of learning strategies they exhibit. Learning strategies can be thought of as "any specific

conscious action or behavior a student takes to improve his or her own learning" (Oxford

& Nam, 1998, p.53). It is plausible that adults who are highly confident about their

capabilities demonstrate a unique set of learning strategies that is congruent with their

perceived efficacy beliefs. For instance, such learners are likely to rely on deeper levels of processing current information, reflect upon it, and relate it to past successful experiences; they will probably use similar strategies, which have worked for them in the past and led to success. On the other hand, those holding lower levels of confidence in their abilities may likely employ surface-level processing, not take the sufficient time to ponder upon task demands, and will more likely continue to aimlessly utilize strategies, which might have not previously proven to lead to positive learning outcomes. Therefore, just as clinicians and psychotherapists conduct initial assessments and intake interviews with their first time clients, it might equally be essential that adult educators assess the efficacy beliefs of their learners as well as the various strategies they bring into the classroom, especially that present day classrooms continue to be more and more populated with learners from diverse cultural and ethnic backgrounds.

      Blackmore (1996) proposed that one of the first things educators ought to do to facilitate the learning process is to merely be aware that there are diverse learning styles in the student population; one might add to such a proposition that there are also distinct actual and perceived beliefs that students hold about their capabilities to achieve academically. Self-efficacy beliefs are typically assessed through self-report measures that ask students to rate their general confidence vis-à-vis succeeding in various subjects or tasks. Students, for instance, may be expected to complete questionnaires about their abilities to learn a second language, mathematics, writing composition, or take online courses. However, these generic types of efficacy instruments tend to yield ambiguous judgments about students' abilities because they are not related to specific-tasks or activities (Pajares, 2001). For instance, questions that call for students to assess how

confident they are about their writing may offer a little insight about their competence as compared to those that ask them to rate their abilities to write an argumentative essay or edit their peers' texts for grammatical and pragmatic content.

<div align="center">Self-Regulation Strategies</div>

Zimmerman (1989) defined self-regulation as the process by which learners set and maintain cognitions, affects, and behaviors in motion, which are thoroughly geared towards achieving their goals. In order to acquire competent self-regulatory strategies, Boekaerts (1996) explained that learners must first be skillful at forming a cognitive template of their learning goal and redefining it as needed. Next, they ought to be able to devise a flexible action plan delineating learning objectives and respective cognitive strategies they intend to use in various tasks. Finally, it is critical that learners monitor their behaviors, which might either facilitate or inhibit their goal achievement; they have to perceive learning not as a product but as a process during which the action plan is regularly re-evaluated in light of its virtues and shortcomings. These metacognitive strategies appear to play an indispensable role in guiding one's learning quest during school and thereafter. However, many learners may not use these tools very often and may be unaware of or underestimate their values (Oxford, 1990). This is likely to be the case for those adults who have been separated from school for a long period of time and, therefore, might not have had the opportunity to explore or evaluate their metacognitve skills in formal academic settings.

Moreover, not only can being unaware of one's self-regulation strategies be related to the inability to detect incompetence but also to overestimate one's ability. Kruger and Dunning (1999) revealed that adults who lacked metacognitive skills held

faulty self-appraisals, had difficulty telling apart correct from incorrect answers, and were

unable to discern their peers' superior performances from the inferior ones. The authors

reason that this may partly be due to the rarity of receiving negative feedback from others

about one's talent and abilities, and the locus of control that is related to the negative

input. In other words, sometimes, even when people receive negative feedback about

their performance, they tend to find a way to attribute the failure or deficiency to some

other factors. Likewise, Wolters (2003) discovered that learners who reported to use less

metacognitive strategies seemed to procrastinate more often than their more skilful

counterparts. Therefore, helping students enhance their ability to regulate and monitor

their study behaviors across various tasks will likely result in more realistic self-

appraisals, ability to recognize weaknesses and strengths, and less procrastination. In a

study that investigated the relation between monitoring accuracy, regulation of study, and

test performance, Thiede, Anderson, and Therriault (2003) required participants to first

read six texts, write a list of five keywords for each one, rate their comprehension, and

take a comprehension test for each of the reading passages. Findings revealed that more

accurate monitoring resulted in more efficient regulation, thereby leading to higher test

performance levels.

<center>Motivational Factors</center>

The fact that motivation has historically been conceptualized in a number of ways

illustrates the intricate aspect of its nature. Over the past several decades, there have been

a number of motivation theories, some of which have attempted to empirically and

operationally define this multifaceted construct and explicate its underlying mechanisms.

For example, social learning theorists (e.g., Bandura, 1986) have viewed motivation as a

byproduct of an individual's internal workings and what happens in the external environment. According to this approach, individuals are motivated by intrinsic and extrinsic factors. Intrinsic motivation refers to motivation to take part in an activity for its own sake; individuals who are intrinsically motivated work on tasks because they find them enjoyable; task participation is its own reward and is not contingent on explicit rewards or other external constraints; an example might be a working adult who decides to enroll in an evening gardening course because it is a subject that he or she very much enjoys.

Extrinsic motivation, on the other hand, is motivation to engage in an activity as a means to an end. Extrinsically motivated people work on tasks because they believe that participation will result in desirable outcomes, such as receiving material rewards by attending certain workshops or seminars (Pintrich & Schunk, 1996). Dollisso and Martin (1999) have reported that the main reason that adult farmers were motivated to participate in educational programs was to increase profitability as a result of the new, learned technology. It might be tempting to think of intrinsic and extrinsic motivation as two ends of a continuum in a sense that the higher the intrinsic motivation, the lower the extrinsic motivation, but, in fact, one cannot assume an automatic relation between intrinsic and extrinsic motivation. For any given activity, an individual may be high on both, low on both, medium on both, high on one and medium on the other, low on one and high on the other, and so on. The relationship between these two types of motivation has been the topic of much debate among psychologists (Deci, Koestner, & Ryan, 1999).

Unlike social learning theorists, humanists (e.g., Rogers, 1963) believed that motivation is derived from and influenced by everything that affects a person, including

environmental, cognitive, and affective forces. Rogers referred to the actualizing

tendency as an individual's inner source of motivation:

> We are, in short, dealing with an organism which is always motivated, is always
>
> "up to something," always seeking. So I would reaffirm … my belief that there is
>
> one central source of energy in the human organism; that it is a function of the
>
> whole organism rather than some portion of it; and that it is perhaps best
>
> conceptualized as a tendency toward fulfillment, toward actualization, toward the
>
> maintenance and enhancement of the organism. (Rogers, 1963, p. 6)

Humanistic theory is focused on self-directed learning, which is central to adult leaning

theory (Merriam & Caffarella, 1999). Learners are viewed as naturally motivated, given

that they are afforded meaningful educational experiences. These latter are likely to

thrive in a safe and non-threatening environment facilitated and nurtured by warm and

empathetic teachers who afford students the freedom to openly talk about their academic

needs, concerns, and how they might solve them (Rogers, 1969). This approach presumes

that most people are able to help themselves if they can conquer certain emotional

hurdles, such as fear of failure and fear of "not fitting in" with rest of the students; such

fears may be characteristic of adult learners who might have been separated from the

academic realm for an extended period of time.

 Adults' motivation might also be prone to attitudinal influences vis-à-vis learning.

For example, individuals who are compelled by their employer to enroll in certain

educational programs, which they feel will not be of any benefit to them, might display

negative attitudes towards that particular learning situation. Such attitudes might, in turn,

affect their motivational levels to actively take part in various classroom activities, such

as collaborative group work, discussions, role-playing, and presentations. Learners' attitudes may be related to a host of cognitive, affective, and psychosocial factors, which serve to convince them that they would rather be somewhere else but the classroom. Certain learners, for instance, may not see the relevance of enrolling in certain classes; others, who might lack self-confidence or feel inadequate, might find the content complicated and beyond their grasp, and as a consequence, they may start to wish that they were on the job instead of going through a painful learning, experience. Conversely, there are those who may view the material as too simple or unchallenging, which can make them resent coming to class (Broadwell, 1996). In the same vein, adults' attitudes towards learning a second or foreign language may influence their motivation to successfully acquire it. To illustrate this, Gardner and his team conducted a series of studies in Canada and the United States investigating various measures of students' aptitude, motivation, and attitudes related to achievement in the French language. They found that students who stressed that learning French would open many opportunities for them to socialize with French speakers appeared to hold positive views towards this linguistic group. Moreover, they were more motivated and strived hard to acquire the second language, which they were more successful at. These students were believed to possess an integrative motive towards the acquisition of another language. On the other hand, students having an instrumental orientation tended to hold adverse views towards the French speaking community and were interested in learning the language for pragmatic and practical reasons, such as getting a high-paying job or traveling abroad (Gardner & Lambert, 1972).

In order to help adult learners adopt favorable attitudes towards learning, DeBord

(1996) expressed that it is important to find out towards whom negatives attitudes are directed: The instructor, the subject matter or learning situation, themselves as learners, or their expectancy for success in the learning activity? For example, to conquer negative attitudes towards the subject matter, DeBord (1996, pp.2-3) suggested the following:

1. Eliminating or minimizing any negative conditions surrounding the subject; things

   that frighten or stress learners could cause avoidant behavior—fear, humiliation, boredom.

2. Ensuring successful learning through varying teaching strategies, setting clear standards for learning, avoiding competition among learners, breaking down the course into small, manageable units, and using formative evaluation.

3. Making the first experience as positive as possible: safe, successful, interesting.

4. Positively confronting mistaken beliefs.

5. Pairing negative learners with other enthusiastic learners to work towards a goal cooperatively and to use peer models when possible.

DeBord has also emphasized the importance of designing a motivational plan for adult learners to help them become more engaged in their learning process. Similarly, Wlodkowski and Ginsberg (1995) maintained that attending to the motivational aspects of learning can be a very potent means of enabling full participation in class; a couple of ways in which this can be achieved is developing attitude and enhancing meaning. The former speaks to the importance of learners' need for personal relevance and self-determination. Strategies that attend to attitude include engaging students in goal setting,

allowing choices in learning, and encouraging experiential learning. The latter emphasizes the need for engagement and challenge through fostering higher-order thinking in real-world applications. Meaning can be promoted through the use of critical questioning, decision-making exercises, and creative activity (Wlodkowski & Ginsberg, 1995).

<div align="center">Adult Education and Academic Achievement</div>

How might perceived, self-efficacy beliefs, regulation strategies, and motivational factors contribute to the academic success of adult learners? Pajares (2001) explicated that self-efficacy beliefs have an impact on self-regulatory and motivational processes. This suggests that people's beliefs about their abilities to take part in certain education programs will influence the type and quality of the self-regulatory strategies they employ as well as their motivational intensity, which will, in turn, affect their overall performance. West, Welch, and Thorn (2001) were interested in how younger and older adults would compare on goal setting, efficacy beliefs, motivation, and performance. Participants were first required to complete four trials of a task asking them to recall items from a shopping list. After having established a baseline trial, the investigators randomly assigned the younger and older cohorts into one of the following conditions: In the first condition (goal) they were instructed to put a percentage performance goal for every trial; the second condition (goal plus feedback) required participants to set goals, and researchers provided them with explicit feedback on each trial; the third condition was the control (no goal-setting, no feedback) during which participants did not set any goals nor received feedback. After completing the final trial, all participants were assessed on measures of self-efficacy and related memory beliefs. West and her

colleagues determined that goal-setting had a positive influence on performance for both the younger and older groups, and that motivation and self-efficacy were superior after setting goals. However, the older adults reacted in a weak manner to the testing and goal setting conditions. They were observed to set lower goals than their younger counterparts, lost their sense of control over memory during testing, and judged their performance as less significant on the final trial than the baseline trial. The authors reasoned that since the feedback, which older participants received, reflected that their efforts were unsuccessful, they lowered their subsequent goals, resulting in lower memory efficacy beliefs and commitment towards reaching their goals.

In another study, Pintrich and De Groot (1990) used the expectancy theory of motivation to examine the interactive effects of intrinsic motivation, self-efficacy, and self-regulated learning on academic achievement. According to the expectancy model, the following three components ought to be present for an individual to be motivated: Expectancy, referring to a person's perception of his or her likelihood of succeeding at a certain task; instrumentality, having to do with whether or not an individual is able to see the relationship between achievement and incentive; and value, pertaining to the value of attaining a goal (Huitt, 2001). Pintrich and De Groot found that intrinsic motivation plays a mediational role in academic performance and that a strong correlation exists between students' intrinsic value and their cognitive strategies and self-regulation uses. In other words, students who were interested in learning the material for its own sake and thought it was meaningful and important (in addition to believing that they could succeed) ended up using various cognitive and self-regulating strategies, which had a positive influence on their academic performance. Most noteworthy was the fact that self-regulation was the

most significant predictor of academic performance, which "suggests that the use of self-regulating strategies, such as comprehension monitoring, goal setting, planning, and effort management and persistence, is essential for academic performance on different types of actual classroom tasks" (Pintrich & De Groot, 1990, p. 37).

In the same vein, even after controlling for actual ability, past level of academic achievement, scholastic aptitude, and vocational interests, Lent, Brown, and Larkin (1987) demonstrated that when people possess higher self-efficacy to complete their educational and occupational requirements, they have more opportunities to select from a wide range of career options, develop greater interest in the ones they select, studiously prepare themselves for various occupational roles, and become more resilient in the face of challenging job quests. In a more recent study, Ford et al. (1998) used path analysis to examine the links between goal orientation, metacognitve activity, practice strategies, learning outcomes, and transfer. Participants were trained to complete a naval radar-tracking task simulated by a dynamic decision-making software. The latter presented them with several targets, which they had to hook on the radar screen, and then gather data to categorize their type, class, and purpose. During the training program, participants were allowed to choose which scenarios to practice in order to get ready for the transfer task, which they had prepared for through several trials. Afterwards, all participants completed measures of self-efficacy, metacognitive activity, and knowledge test. Finally, they were required to take a complex, transfer task, which was more challenging than the training scenarios they were previously exposed to. Results showed strong relationships between metacognitive activity, knowledge and skill acquisition, and self-efficacy, which were all major factors predicting participants performance in the transfer task. The

researchers noted that the use of higher metacognitive activity led to higher self-confidence in participants' ability to successfully complete the task, and that such self-regulatory strategies are likely to result in "effective learning early in the knowledge and skill acquisition process if trainees are provided with a learning environment that places greater emphasis on acquiring and mastering skills than on performing well on outcome measures during training" (p. 229).

Findings from the Ford et al. study mirror those from Ng's 2002 study, which looked at the relationships between distance learners' motivational goals, self-efficacy beliefs, cognitive strategies, and learning outcomes. Ng found that mastery development goals were related to an increased use of adaptive self-regulatory strategies, which were associated with higher self-efficacy beliefs. These latter served as strong predictors of achievement levels both throughout the academic term and at the final examination time. Ames (1992) demonstrated that students who adopt mastery goals believe that success is contingent upon effort, for it is only through committed effort that students are actively engaged in using various learning strategies that help them persist when confronted with arduous tasks and overcome failure. In fact, "students endorsing mastery goals have reported valuing and using those learning strategies that are related to attending, processing, self-monitoring, and deep processing of verbal information" (Ames, 1992, p.3).

A common denominator that all of these studies (and a number of others in the literature) point to is the critical role that self-efficacy, self-regulated learning, and motivational factors play in academic achievement. However, there seems to be a circular argument surrounding the directionality in which these cognitive and affective constructs

interact with each other. For example, studies which assert that high self-efficacy beliefs lead to higher use of self-regulation strategies and an increase in motivation, which ultimately result in improved performances, need to empirically investigate the causal pathways underlying such claims: Is it because they are highly efficacious that adults learners employ sophisticated self-regulated strategies and are motivated towards achieving their aims? Is it because of their high use of metacognitive activity and interest in accomplishing certain tasks that they begin to feel highly confident in their abilities? Or could it be that their elevated motivational levels to reach specific goals serve to instigate and internalize high, perceived self-efficacies, resulting in frequent use of self-regulated learning and improved performances? Moreover, the learning context needs to be addressed in light of how these three constructs interact with each other because the same individuals might show distinct interactive patterns depending on the learning situation at hand, such as traditional versus distance mode of learning and teaching strategies.

Conclusion

Regardless of which direction they influence each other, self-efficacy beliefs, self-regulated strategies, and motivation appear to play an essential role on the academic achievement of adult learners. Individuals seem to be at a greater advantage vis-à-vis accomplishing their tasks when they feel confident in their abilities, self-regulate their learning, and sustain high motivational levels. Thus, adults whose professional and personal experiences have prepared a supportive environment for them where those attributes are valued and nurtured will most likely be successful participants in the academic realm. Such characteristics might also help those learners to withstand in the

face of failure and to effectively cope with potential adversities. On the other hand, adults are unlikely to achieve their academic goals when they are uninterested or unmotivated to take part in the learning process, doubt their competence, and do not know how to cognitively monitor their learning or choose not to do so. In addition, they may experience difficulties coping with various challenges that they might encounter and might easily give up when they repeatedly confront failure. Therefore, it may be of paramount importance that adult educators assess the self-efficacy beliefs, use of self-regulatory strategies, and motivational levels of adult learners, not only at the start of the educational program, but also at various intervals throughout the academic term during which they can provide them with the necessary feedback to revitalize the interaction among these cognitive and affective factors so that learners are able to reach their best academic potential.

<div align="center">Implications for Online Educators</div>

Adult represent a sizeable portion of enrollment at distance learning institutions and will likely continue to be the majority in the upcoming decades. Initially, many of these learners feel motivated to participate in their respective programs. However, as the course of their academic journey unfolds, their motivation might diminish and some of them might start having second thoughts about whether or not they possess the necessary skills or abilities to successfully complete their degrees. As a result, they may eventually drop out. Adult educators who are involved in the instructional design of web-based courses ought to consider how to integrate the development or enhancement of self-efficacy beliefs, motivational factors, and self-regulated learning into training seminars or course modules in order to help this populace surmount their temporary challenges. In

addition, it is equally central that online instructors, who concomitantly serve as mentors,

provide valuable and constructive feedback to their adult mentees and regularly assess

their efficacy beliefs, motivational levels, and use of metacognitve activity in order to

help them stay enrolled and achieve their academic goals.

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