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Insights from Educational Psychology Part 4: Academic Self-Concept and Emotions

Steve Black
seblack@colgate.edu

James D. Allen
The College of Saint Rose, jimallen1700@gmail.com

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Part 4: Academic Self-Concept and Emotions

In Part 2 of this series of columns on insights from educational psychology, we explored the roles goal orientation, mindset, and self-regulation play in students' academic achievement. Students who practice the self-regulation cycle of forethought, performance, and self-reflection build self-efficacy, a sense of being in control of their learning and having confidence in their ability to succeed. The focus of this column is the reciprocal interactions of emotions, self-concepts, motivation, and achievement. Confusion and anxiety receive special attention due to the prevalence and educational importance of those emotions.

Academic Self-Concept

Emotions students feel in education are inextricably woven with self-esteem, self-concept, and feelings of self-efficacy. Self-concept and self-efficacy are primarily cognitive components of how a person views oneself, while self-esteem reflects the affective or emotional components of self-image. Self-esteem involves value judgments of self-worth, whereas self-concept is a more global, holistic perspective. Self-efficacy refers to beliefs about the self in the context of a specific task or domain of activity. Bandura (1977) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Self-efficacy is closely related to self-concept. Self-concept is the knowledge or perception one has about oneself within a frame of reference, such as in a college class (Bong & Skaalvik, 2003).

Educational psychologists have not yet chosen a consistently defined difference between self-efficacy and self-concept. But in general self-concept represents one's general perceptions of the self in a frame of reference, while self-efficacy represents one's expectations and convictions

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of what they can accomplish in the academic setting. Self-efficacy is related to one's beliefs about one's ability to perform a specific task in a specific domain of learning. Self-concept consists of fairly stable perceptions based on past experience, whereas self-efficacy is more future oriented (Bong & Skaalvik, 2003). Educational psychologists have used various instruments to measure self-concept and self-efficacy. The instruments are based on somewhat different operational definitions. Consequently, the research has effectively treated self-concept and self-efficacy as overlapping, intertwined characteristics (Bong & Skaalvik, 2003). But whichever label one chooses, positive self-perceptions facilitate academic engagement, goal setting, persistence, effort, motivation, strategy use, performance, and achievement.

Individuals may have a global self-concept, meaning a self-image that encompasses their whole personality in various social arenas. But researchers have found that perceptions of self-worth are specific to context. For example, Harter (1990) concludes that "college students make clear differentiations among scholastic competence, intellectual ability, and creativity" (p.71). An individual's overall sense of self-worth is strongly tied to the value one places on success at a task such as writing a research paper. Eccles' (2009) expectancy-value theory described how people make choices based both on their expectation for success (related to their self-efficacy) and the value they place on succeeding at the task (related to their self-esteem). Value is developed in the context of individual priorities and influences from family, peers, and society. A student who chooses to put forth effort to write a good paper will need to feel confident they can succeed and place personal value on doing well. Task value is based on four factors: (1) attainment value (or importance of doing well on a task); (2) utility value (usefulness of the task for one's future goals); (3) interest (one's enjoyment of doing the task or intrinsic interest in the content of the task); and (4) relative cost (the perceived negative aspects of engaging in the task,

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e.g., giving up time for doing something of greater value, effort expended, experience of anxiety, fear of failure) (Eccles, 2009).

Unfortunately, a student who lacks confidence in their ability to succeed (low self-efficacy) is prone to withdraw effort. This protects self-esteem, because the student can attribute failure to lack of effort rather than low ability (Thompson, Davidson, & Barber, 1995). The best way to avoid that is for students to develop the academic skills and abilities that lead to success when effort is put forth. Students who view academic success as the result of combining academic skills with effective effort experience increased self-efficacy and confidence to succeed in the future. Albert and Dahling (2016) have shown that having a mastery orientation toward learning and taking personal responsibility for learning boosts academic self-concept.

Can praise and pep talks boost academic self-concept in ways that translate to genuine academic achievement? Not really. Valentine, DuBois and Cooper (2004) performed a meta-analysis of studies on the relation between self-beliefs and academic achievement, and found only a modest correlation between the two. Furthermore, they note that students may have positive beliefs about themselves that lack a basis in actual skills and accomplishments. Self-beliefs have some influence on achievement, but intervention programs focused solely on boosting self-concept will likely have little effect absent improvements in skills. Students' academic learning strategies and self-regulation skills have more impact because they are internal to the student. Praise and pep talks from external sources have little chance of significantly influencing the student behaviors that lead to academic success.

Academic self-concept is developed in specific social contexts, such as within particular school, course, or group projects. James (1893) explained that all people want to be viewed

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favorably by peers, and that a person “has as many social selves as there are individuals who recognize him” (p. 179). With acknowledgement to William James, Eccles (2009) refers to the “me self” and the “we self.” The “we self” is the personally valued parts of the self that are rooted in family, gender, race, social class, etc. that constitute a collective, social identity. The “we self” powerfully influences personal life choices. The “we self” also plays a very important role in how individuals perceive whether they fit in and whether others believe they fit. Steele (1997) described that groups viewed as less capable face barriers to achievement. His main examples were women in math, engineering, and physical sciences, and African Americans in schools everywhere. Steele (1997) used the term stereotype threat to describe the barrier to achievement created by an individual's concern that others' judgments or their own personal actions will negatively stereotype them. Fear of being reduced to a stereotype can lead to disidentification, “a reconceptualization of the self and one's values so as to remove the domain as a basis of self-identity, as a basis of self-evaluation” (Steele, 1997, p.614). Importantly, one does not have to personally believe the stereotype to feel threatened by it. Ways to avoid stereotype threat include optimistic mentoring that stresses potential and ability to grow, challenging work (versus remediation), affirming that the person indeed belongs, valuing multiple perspectives, and being nonjudgmental when providing help (Steele, 1997).

Emotions in Academic Settings

Setting goals, developing attitudes, sustaining motivation and producing work are rooted in personal and social contexts and thus naturally coincide with a range of emotions. Hope for success, fear of failure, dread of being unprepared, or uncertainty regarding expectations trigger strong emotional responses. Reinhard Pekrun of the University of Munich argues that the role of emotions has received too little attention within educational psychology (Pekrun & Stephens,

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2012). Positive emotions can aid goal setting, promote creative problem solving, and support self-regulation. Negative emotions impede performance, lead to withdrawal of effort, and can harm health (Pekrun & Stephens, 2012). Positive and negative emotions can be activating or deactivating. An emotion can activate the student to be motivated and put forth effort or it can lead to withdrawal of interest and effort. Here is a summary of the primary academic emotions:

- Positive, activating
 - enjoyment of learning
 - hope for success
 - pride
- Positive, deactivating
 - relief
 - relaxation
 - contentment
- Negative, activating
 - anger
 - anxiety
 - shame
- Negative, deactivating
 - boredom
 - hopelessness (Pekrun, Goetz, Titz, & Perry, 2002)

Working with many others, Pekrun has extensively studied the rich diversity of emotions students experience in academic settings. He and his colleagues have found that students experience every major human emotion, with the notable exception that none of the participants

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in their studies reported disgust (Pekrun, Goetz, Titz, & Perry, 2002). Despite the importance of a broad range of emotions to learning, many emotions have received very little attention by educational psychologists. Especially lacking are studies of positive emotions such as hope, gratitude, and admiration.

An alternative framework for viewing the role of emotions in learning is the Attribution Theory of Motivation (Weiner, 1985). The theory is based on the idea that how a person attributes their success or failure influences their emotions and achievements. One's reaction to a failure attributed to bad luck or unfair treatment will be different from one's reaction to a failure attributed to poor preparation or lack of effort. Put very simply, attributions tell us what to feel, and feelings tell us what to do.

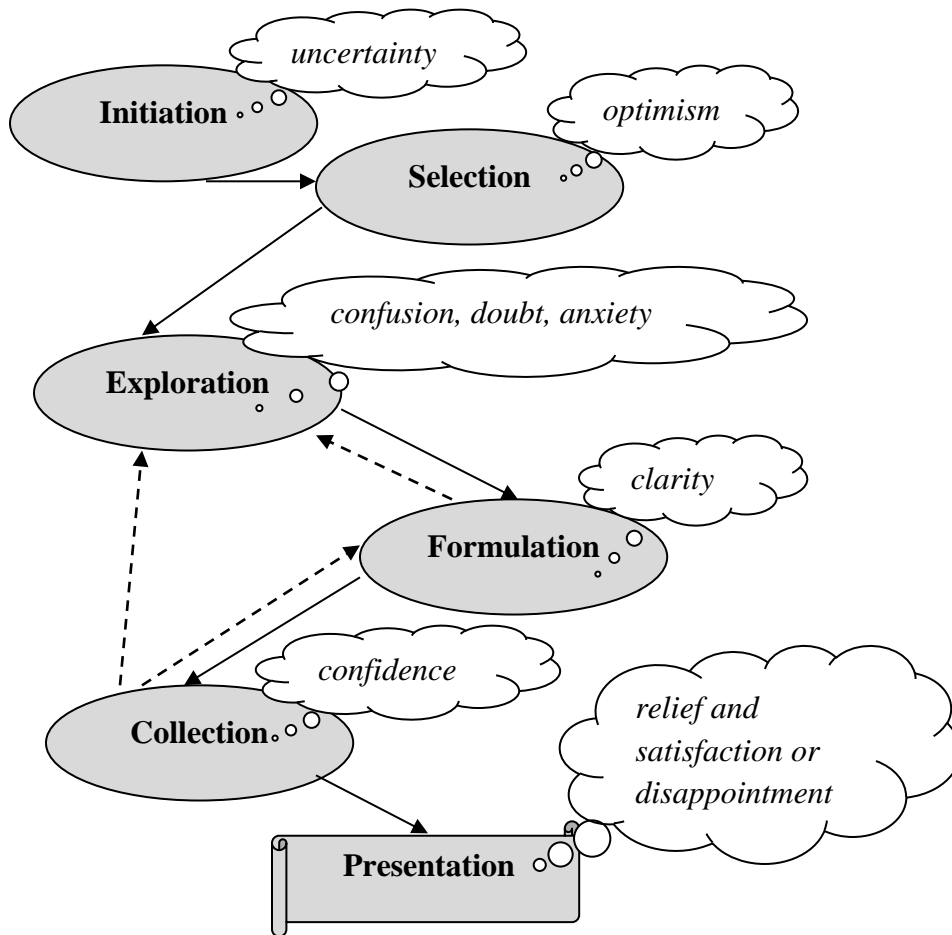
Recall that in Part 3 of this series of columns we described the role of epistemic beliefs in the cognitive development of college students. Many freshmen enter college with a dualist (right/wrong, us/them) view of knowledge. Others arrive as multiplists, who view knowledge as subjective and tend to believe all opinions are equally valid. With guidance, students grow to recognize knowledge as dependent on facts and context, and as mature thinkers they become fully aware of their personal role in the creation of knowledge. Because growth through stages of epistemic belief requires transformations in consciousness, the process typically includes powerful emotions. Epistemic emotions are defined as the affective aspects of knowledge-generating cognitive tasks and activities (Pekrun, Vogl, Muis, & Sinatra, 2017). Conducting research using library resources is a knowledge-generating cognitive task and can therefore be expected to elicit epistemic emotions.

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To help address the need to study academically related emotions, Pekrun and colleagues have developed a brief, easily administered instrument, the Epistemically-Related Emotion Scales (Pekrun, Vogl, Muis, & Sinatra, 2017). The scales measure seven factors: surprise, curiosity, enjoyment, confusion, anxiety, frustration, and boredom. As is standard procedure with validated instruments, each factor is measured with multiple items. For example, students respond to the degree they feel confused by also indicating the degree to which they feel muddled and puzzled (Pekrun et al., 2017). The repetition of concepts allows the researchers to test the reliability of the factors being measured. The creators of the Epistemically-Related Emotion Scales carefully tested internal validity and confirmed the measurement of emotional factors. The validation of the instrument allows researchers to confidently use the short version of the scales. The seven-item short version asks subjects to respond to their personal intensity of feeling surprised, curious, excited (the term they chose to represent enjoyment), confused, anxious, frustrated, and bored. The validated Epistemically-Related Emotion Scales (Pekrun et al., 2017) are well designed to measure emotions students experience in various stages of library research. We recommend that librarians use the instrument to study the role of students' emotions during reference encounters, library instruction sessions, and while using library resources. It is a good replacement for the now rather dated Library Anxiety Scale (Bostick, 1993).

Far and away the most frequently studied epistemic emotion is anxiety (Pekrun, Goetz, Titz, & Perry, 2002). In a seminal article on the role of emotions in students' processes of conducting research and finding information in libraries, Kuhlthau (1991) discovered that students' emotions tend to follow a broad pattern as depicted in Figure 1.

Figure 1: Stages of the Information Search Process



Kuhlthau's model originally implied that the search process goes through a rather linear set of stages. In subsequent years librarians have come to realize that students' search processes are often more iterative than linear. So in Figure 1 we denote with dotted lines common points where students backtrack to reiterate a stage of the search process. The process of exploring resources, formulating a thesis and topic sentences, and collecting information to create a coherent whole is usually iterative, not linear. Therefore students also often pass through multiple phases of confusion, doubt, and anxiety before (hopefully) reaching final clarity and

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confidence. Kuhlthau (1991) concludes with an apropos quote from a student who participated in her studies, “Uncertainty is in the head but anxiety is in the pit of the stomach” (p. 370).

Anxiety

In the words of Moshe Zeidner (2014), “College students are often bombarded with a myriad of stressors, including exposure to novel and challenging experiences in a low control academic environment, high competition, social pressure to excel, and the need to make critical career and social choices” (p. 265). The bulk of educational psychology research on anxiety has been focused on test anxiety, which is more accurately termed evaluation anxiety because “test” can have various meanings. Some 25% to 40% of the population experience evaluation anxiety, and the prevalence is higher for females and ethnic minorities (Zeidner, 2014). Known causes of evaluation anxiety in academic settings include:

- lack of control over outcome
- skill deficit(s)
- doubts about self-efficacy
- low ability relative to peers
- preoccupation with past failures
- fear of harsh evaluation
- desire for perfect score
- genetic proneness
- family environment (Zeidner, 2014).

Anxiety has been of such great interest to educational psychologists because of its many negative impacts on students. Studies have repeatedly shown that anxious students suffer from a

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range of information processing deficits in addition to emotional and sometimes physical distress. The deficits include troubles with encoding, storing, processing, retrieving and producing information (Zeidner, 2014). The negative effects of anxiety on academic achievement include:

- impeded information encoding, processing, and retrieval
- excessive worry
- task-irrelevant thoughts
- susceptibility to distraction
- difficulty paying attention
- failure to organize information effectively
- inability to apply strategies to complex tasks
- impeded decision-making
- deficiencies in metacognition (Zeidner, 2014).

The literatures of educational psychology and library science have to date enjoyed remarkably little cross-fertilization on the effects of anxiety on academic achievement. Mellon's (1986) groundbreaking work on library anxiety did not draw upon the extant literature on evaluation anxiety. Neither did Kuhlthau (1991) cite any of the existing educational psychology research on evaluation anxiety. Conversely, Ziedner's (2014) review of literature on anxiety in education fails to refer to either Mellon or Kuhlthau, despite noting that "it remains somewhat mysterious how the influence of anxiety on cognition plays out over extended time periods, such as ... completing a critical research project in college" (p. 284).

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The term “library anxiety” emerged from Constance Mellon’s (1986) qualitative study of college students’ journal entries on their search processes and associated emotions. Mellon (1986) reported that 75 to 85 percent of students described their initial response to having to use the library with terms like scary, overpowering, lost, helpless, confused, or fearful. She noted that anxiety caused students to become unable to approach research logically or effectively, and that they feared appearing incompetent to peers and potential helpers (like reference librarians). On the bright side, anxiety was mitigated by librarian visits to classrooms (Mellon, 1986).

Mellon’s (1986) work paired with Bostick’s Library Anxiety Scale (1993) spurred a flurry of research on library anxiety. That body of research was summarized nicely by Carlile (2007), who concluded that recognition of patron anxiety and the need to make the library a comfortable, inviting place are prerequisites to improving reference service. The most effective ways to reduce library anxiety are through instruction sessions, increasing the frequency of interactions with librarians, openly acknowledging the existence and legitimacy of anxiety, and behaving in an approachable, non-judgmental manner (Carlile, 2007).

Zone of Optimal Confusion

As librarians we understandably and appropriately do our best to minimize students' confusion. Students are confused enough in the normal course of figuring out assignments and navigating complex library resources. So it's natural to have an implicit or explicit goal of eliminating sources of confusion whenever possible. However, some degree of confusion is actually beneficial for learning complex tasks such as writing a research paper or preparing a research-based presentation. According to D'Mello, Lehman, Pekrun, & Graesser (2014), "Confusion is expected to be more the norm than the exception during complex learning tasks.

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Moreover, on these tasks, confusion is likely to promote learning at deeper levels of comprehension under appropriate conditions" (p. 153). The appropriate conditions are that the confusion is appropriately induced in context and that the learners either have the ability to resolve the confusion themselves or are given sufficient support to resolve the confusion (D'Mello et al., 2014). A primary duty of reference librarians is to offer that sufficient support to resolve students' confusion. We know confusion is very common in reference encounters, and it has been found to be very common in other types of academic help settings, too. Lehman, Matthews, D'Mello & Person (2008) analyzed 50 hours of student interactions with tutors and found that confusion was the most frequent emotion, followed by happiness and then anxiety (no other emotion was commonly experienced by the students in their study).

Is confusion really an emotion? D'Mello et al. (2014) maintain that it is an emotion because people have to reconcile discrepancies between existing knowledge and incoming information, a state described variously as cognitive disequilibrium, incongruity, dissonance or conflict. Confusion is detectable via facial expressions, pitch of voice, and body movements (D'Mello & Graesser, 2014). Based on our own experience we believe effective teachers and reference librarians can readily detect when a person is confused. (The lack of visual clues to pick up on a student's confusion is one of the many challenges of interacting online). The ability to detect and respond to confusion is important to good teaching and reference librarianship because confusion is the only emotion that significantly predicts learning (D'Mello et al., 2014). Based on their experimental findings, D'Mello et al. (2014) theorized a zone of optimal confusion which we interpret graphically in Figure 2.

Figure 2: Zone of Optimal Confusion

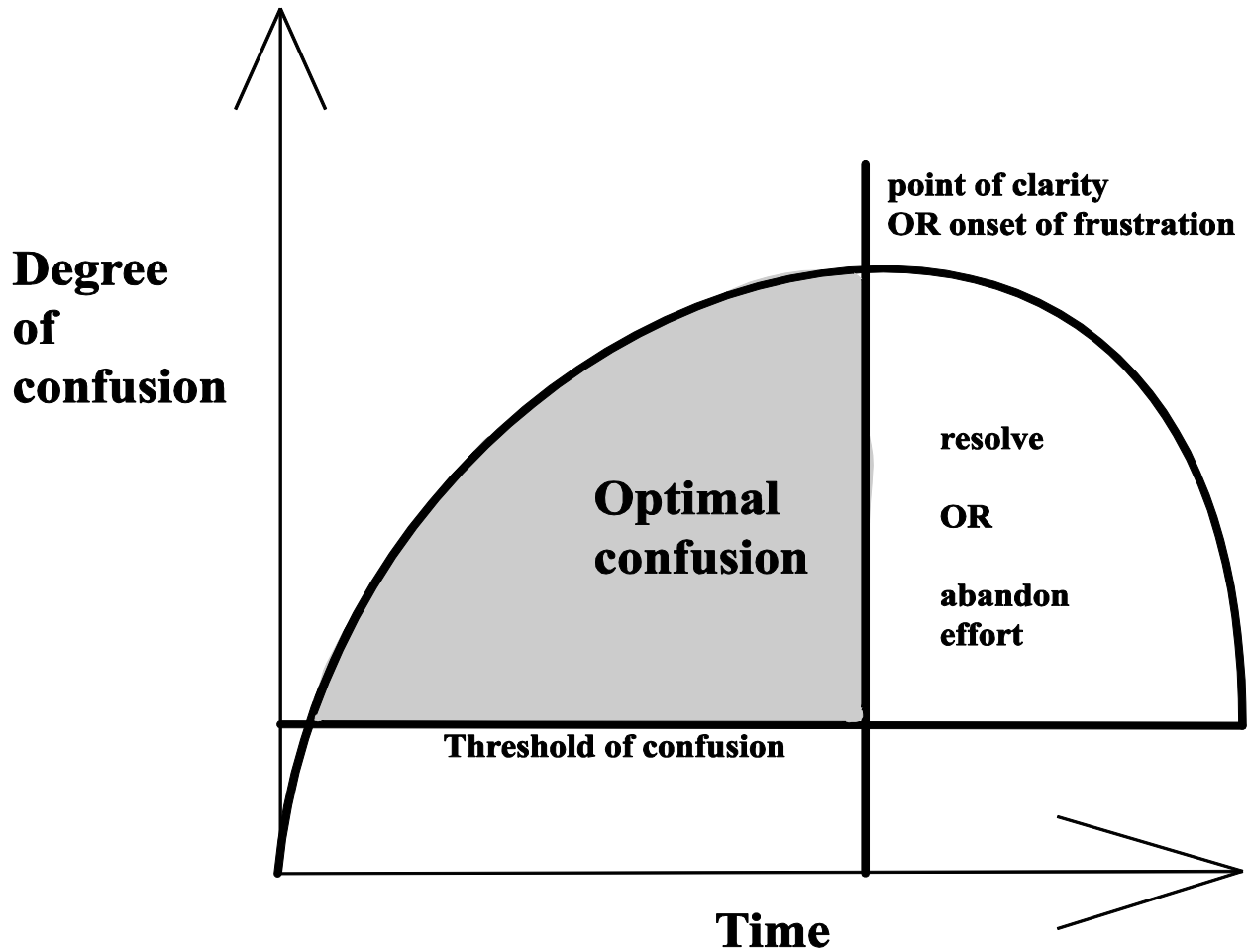


Figure 2 is a simplified interpretation of D’Mello and Graesser’s (2014) own graphical representation of four possible arcs of confusion over time. A threshold of incongruity or discrepancy must be reached to induce confusion, depicted in Figure 2 as a horizontal line. The apex of the curve denotes the point at which confusion causes one to become flustered or bewildered. This process occurs over time. A person who resolves a discrepancy very quickly does not reach the threshold of confusion. Confusion that persists too long becomes frustration, depicted in Figure 2 as a vertical line. If frustration continues, the confusion will fade, not because it is resolved, but rather because the individual will disengage and abandon effort. The

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zone of optimal confusion is thus the period of time during which an individual grapples with confusion by deliberating, problem solving, and revising their existing mental models (D'Mello et al., 2014). This leads to optimal learning if the confusion is appropriately resolved in a reasonable amount of time (what is reasonable varies by context). Deliberating, problem solving, and modifying mental models contribute to deep learning, so it may actually be a good teaching strategy to intentionally perplex students. But D'Mello et al. (2014) caution that information that will induce no confusion for one student may utterly frustrate another, so "the one-size-fits-all strategy that one is forced to adopt in the classroom makes it extremely difficult to develop an intervention that is likely to induce meaningful conflict in a majority of learners" (p. 167). A distinct advantage of one-on-one teaching in a reference encounter is the librarian can sense a patron's level of confusion and tailor the information conveyed accordingly.

The emotional dimension of learning is directly relevant to our efforts to teach students in instruction sessions and at the reference desk. Historically librarians have focused on the role of anxiety, but it behooves us to be aware of the potential impacts of surprise, curiosity, enjoyment, confusion, frustration, and boredom. If we can be sensitive to the role of these epistemic emotions and craft our teaching to promote curiosity and enjoyment, and minimize frustration and boredom, students will not only achieve more academically, but can also be expected to enjoy healthy self-esteem, self-efficacy, and self-concept.

Takeaways for Librarians

- Do not give false praise, as it will either be recognized by the student as not being genuine, or it will contribute to an inaccurate academic self-concept that hurts them in the long run.

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- Acknowledge and accept that students experience a broad range of positive and negative emotions. These may manifest themselves in ways detrimental to providing good reference service. So be patient and understanding.
- The best way to build a positive academic self-concept is to master necessary skills, do hard work, and achieve genuine successes. According to the attribution theory of motivation, academic success is the result of appropriate academic skills and abilities combined with effective effort.
- The Epistemically-Related Emotion Scales (Pekrun, Vogl, Muis, & Sinatra, 2017) are appropriate for measuring student emotions in reference encounters, instruction sessions, database searches, and other library experiences.
- Explain to students that research is an iterative process that naturally involves some frustrations, but that success will come with perseverance.
- Be very careful about giving special treatment to individuals or groups, as singling them out may trigger fear of being negatively stereotyped.
- Tell students that some anxiety is normal and expected, and emphasize that librarians understand that and can help them learn the skills to master the task that is triggering the anxiety.
- Reassure students that their initial feelings of confusion and doubt will resolve into clarity once they have done a good job doing their research.
- Confusion can be beneficial to learning if the student is given sufficient support to resolve the discrepancy or incongruity that caused the confusion.

Recommended Reading

D’Mello, S., Lehman, B., Pekrun, R., & Graesser, A. (2014). Confusion can be beneficial for learning. *Learning & Instruction, 29*, 153-170. doi:10.1016/j.learninstruc.2012.05.003

The authors performed two experiments to test the hypothesis that confusion can positively impact learning if it is appropriately induced in context and the students either have an opportunity to resolve the confusion on their own or are given the needed support. Subjects worked through online learning exercises that contained contradictory information. Students who reported feeling confused performed better on posttests, including a test of knowledge transfer. The authors concluded that there may be benefits to intentionally perplexing students, but only if confusion is induced in appropriate contexts and in ways that align with individual interests.

Eccles, J. (2009). Who am I and what am I going to do with my life? Personal and collective identities as motivators of action. *Educational Psychologist, 44*(2), 78-89.
doi:10.1080/00461520902832368

Jacquelyne Eccles describes the expectancy value perspective on identity formation. Important life choices are guided by individuals’ expectations for success and the importance or value attached to available options. Expectancy-value theory applies to both the personal, individual “me self” and to the collective or social identity of the “we self.” Expectations of success are closely tied to self-concept and self-efficacy. The value one places on a task or activity is based on four components: 1) intrinsic interest or enjoyment, 2) utility in obtaining long-range goals, 3) consistency with self-image and 4) personal and emotional cost.

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Harter, S. (1990). Causes, correlates, and the functional role of global self-worth: A life-span perspective. In R. J. Sternberg and J. J. Kolligian (Eds.), *Competence considered* (pp. 67-97). New Haven, CT: Yale University Press.

Susan Harter summarizes decades of research on the development of self-worth across the lifespan, from childhood to adolescence to college age and then adulthood. College students' self-worth is based on twelve domains: scholastic competence, intellectual ability, creativity, job competence, athletic competence, physical appearance, romantic relationships, peer social acceptance, close friendship, parent relationships, sense of humor, and morality. College students make clear differentiations among scholastic competence, intellectual ability, and creativity. The domains most highly related to self-worth are physical appearance and peer social acceptance. Global self-worth is not an average of the twelve domains; it is very dependent on the value an individual places on achieving success in particular areas.

Kuhlthau, C. C. (1991). Inside the search process: Information seeking from the user's perspective. *Journal of the American Society for Information Science*, 42(5), 361.

Carol Kuhlthau carried out a series of studies to investigate the thoughts, feelings, and actions of students through the information search process. She found it common for students to feel uncertain and apprehensive at initiation, experience optimism once a topic has been chosen, and feel confusion, uncertainty and doubt during exploration (an inherently messy part of the process). Formulation is the stage where a thesis emerges and a sense of clarity replaces uncertainty. Actually composing the paper or presentation engenders confidence and producing the final product results in relief and (hopefully) satisfaction. Good reference interviews can effectively help alleviate anxiety in the topic formation phase, but some anxiety is to be expected in any information seeking process.

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Mellon, C. A. (1986). Library anxiety: A grounded theory and its development. *College & Research Libraries, 47*(2), 160-165.

Constance Mellon's seminal study of students' fear when faced with library research prompted many librarians to study library anxiety. Students in undergraduate writing classes were required to keep a journal of their search processes and their feelings. Seventy-five to eighty-five percent of the students described feelings of fear or anxiety. Such anxiety made students unable to approach research logically or effectively, and they were reluctant to seek help because asking would reveal their incompetence. The best antidote is for librarians to visit classes in a timely manner, and be warm and inviting as well as informative.

Pekrun, R., & Stephens, E. J. (2012). Academic emotions. In K. R. Harris, S. Graham, T. Urdan, S. Graham, J. M. Royer, & M. Zeidner (Eds.), *APA educational psychology handbook, Vol 2: Individual differences and cultural and contextual factors* (pp. 3-31). Washington, DC: American Psychological Association. doi:10.1037/13274-001

Emotions are ubiquitous in students and affect attention, motivation, and strategies. Research on the role of emotions in learning have been dominated by studies of test anxiety, while other emotions have been largely neglected, in part because emotions are complex and difficult to measure. Pleasant emotions that spur students to effort include enjoyment, joy, hope, pride, and gratitude. Relaxation, contentment, and relief lead to reduced effort. Unpleasant emotions like anger, anxiety, and shame can serve to increase effort, while boredom, sadness, hopelessness, and disappointment tend to cause a decrease in effort. Positive academic emotions can be supported through high quality teaching, supporting student autonomy, and matching evaluations to expected outcomes.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52(6), 613-629. doi:10.1037/0003-066X.52.6.613

Claude M. Steele was not the first to recognize the negative impacts of stigma and stereotype, but this seminal, oft-cited article gave clear definition to the problem. Stereotype threat is the concern that others' judgments or one's own actions will reinforce negative perceptions of one's group identity, even when the affected individual does not believe the stereotype. Stereotype threat directly impacts standardized test performance of women and Blacks, and it can cause individuals to become disidentified from school. Remedial programs can backfire if they reinforce negative stereotypes by singling out a group for special treatment.

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and academic achievement: A meta-analytic review. *Educational Psychologist*, 39(2), 111-133. doi:10.1207/s15326985ep3902_3

The authors reviewed fifty-five studies on the effect of self-beliefs on academic achievement. "Self-belief" in the studies was variously defined, and included measures of self-concept, self-image, self-esteem, and self-efficacy. The overall relation of self-belief to achievement was found to be a relatively modest correlation of $\beta = .08$. Self-beliefs within particular domains such as math ability have a slightly higher correlation of $\beta = .12$. General self-concept and global self-esteem have little relationship to success in particular courses. Results of this meta-analysis do not justify interventions that are designed solely to boost students' views of themselves.

Interventions should include a focus on academic skills and engagement.

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Zeidner, M. (2014). Anxiety in education. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp. 265-288). New York, NY: Routledge/Taylor & Francis Group.

Moshe Zeidner describes current research on anxiety in educational contexts, with emphasis on student anxiety in response to being evaluated. Some individuals are prone to being anxious, and trait anxiety is about half genetic. The state of being anxious when being tested can be caused by high motivation to succeed, poor study or test-taking skills, low intellectual ability, dissatisfaction with anything less than a perfect score, or failure to meet social or parental expectations. Anxiety impedes academic performance in many ways including causing students to have difficulty concentrating and organizing information, and being hindered in the ability to apply strategies to complex tasks. Interventions to alleviate academic anxiety should include study skills training.

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