

**Adult Affective/Non-Cognitive Learning Approaches: Support for Student Equity and Development of Professional Competencies**

**Executive Summary**

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## Executive Summary

This document is an executive summary of Diego Navarro's 2015-2016 sabbatical research project as a Visiting Scholar at the Carnegie Foundation for the Advancement of Teaching at Stanford. This summary describes the project's background, key findings, and summary of interviews with experts in the field. Please contact Diego if you would like to see the full report.

### **BACKGROUND:**

In 2002, when we created the Academy for College Excellence program at Cabrillo College, our literature review on adult social-emotional learning produced articles in Academic Self-Efficacy but not much else. Therefore in creation of the ACE program's affective/non-cognitive programming we conducted 125 interviews of experts, students and educators; developed a theory of change; and then over a year and a half starting in the summer of 2002 we performed five 40 hour in-classroom pilots using nine different curriculum culled from a review of 26 curricula. Fortunately since 2009 research has been increasing on adult affective/non-cognitive learning.

This report is the culmination of a sabbatical project seeking to survey the recent literature on affective and non-cognitive learning and the impact of affective and non-cognitive programming for adult learners, particularly community college students. The report is a compilation of interviews with experts in affective and non-cognitive learning, programs that implement non-cognitive practices, and a review of selected articles and books on key ideas in this field. I received two year-long Visiting Scholar appointments (2015-2016), one at the Carnegie Foundation for the Advancement of Teaching at Stanford University, and the other at the University of California, Santa Cruz - Oakes College, the campus' social justice-oriented college to perform this research.

The full sabbatical report begins with a summary of the key findings. We then present a selection of important theories that came from our literature review, the interviews with experts, and the discussions with different programs directors. The theories section is followed by profiles of the experts interviewed for this project, profiles of selected affective and non-cognitive programs, and an annotated bibliography. We interviewed nine experts: Anne Murray Allen (Conversant), Rachel Beattie (Carnegie Foundation for the Advancement of Teaching), Kathy Booth (WestEd), Omid Fotuhi (Stanford University), Jeremy Jamieson (University of Rochester), Jason Okonofua (Stanford University), Todd Rogers (Harvard University's Kennedy School), Mandy Savitz-Romer (Harvard Graduate School of Education), Nikki Schechtman & Louis Yarnall (SRI Education), and David Yeager (University of Texas-Austin). In addition, this research produced a number of curricular exercises adapted from or based on sources and theories reviewed in this report.

## **KEY FINDINGS**

The following are a summary of the five key findings.

One finding is that the experiences many of our underprepared students that come from backgrounds that include poverty or trauma, impact their psychology and the resources and supports they need to succeed. The human stress response system is very sensitive to environmental factors during childhood; children living with scarcity experience more toxic stress than middle class children, and show physical signs in the form of higher blood pressure and levels of certain stress hormones. People who experience chronic scarcity are cognitively overloaded by the volume of information needed to deal with daily tasks. A significant result of growing up in poverty is elevated chronic stress, and increased stress has demonstrable physiological and psychological effects on student performance. The impact of stress on academic performance is a rich area of research. Students may respond to a stressor as a threat (where coping skills and resources are insufficient to meet the need) or as a challenge (where individuals feel capable of responding to the stressor). Encouraging students to reappraise their stressors as challenges rather than threats results in verifiable improvements.

A second finding is that community college students may be especially vulnerable to feeling less prepared, less competent, or less connected to their educational community. The alienating environment of community colleges, the lecture mode of teaching, lack of development of student to student relationships and the non-existent student dormitory life, all contribute to these feelings. The expert interviews and literature discussed in this report argue that the most effective educational and pre-professional training for students must meet several key needs. In order to sustain motivation, students need a sense of social belonging, a degree of autonomy, and to feel competent while still being challenged. Of these needs social belonging is the strongest predictor of student persistence and completion. If instructors can create an environment that meets these needs, students will be better able to complete work that is not inherently fun or satisfying. These needs can have paradoxical effects when underprepared students are met with punitive discipline or distrust on the part of teachers. When students misbehave, the response is typically more control and authority, which diminishes their feeling of autonomy. When students fall behind academically, they lose the feeling of competence that sustains their motivation in the face of challenge. And if their relationships with teachers are damaged or they lack opportunities to connect with peers, they have a diminished sense of relatedness and belonging. Luckily, teachers can create environments conducive to connection and engagement by moving beyond the cognitive and thinking holistically about their students.

A third finding is that students coming from backgrounds of scarcity often have experiences of being powerless in the face of authority, whether in benefits offices, the criminal justice system,

inflexible workplaces or the classroom. Many students were negatively impacted by punitive discipline during their early education and can be better served by empathic approaches that engage with students' experiences, challenges, and motivations. When students have even one faculty who connects with them in a respectful and understanding way, their academic performance, disciplinary records, and self-reported investment in their education all improve. Faculty can support students and be understanding of their needs by avoiding fundamental attribution errors that label students as troublemakers or as disinterested in their education. The quality of teacher-student relationships is fundamentally important to students' motivation and engagement with school. When students feel mutual respect, understanding, and trust in their learning environment they are better behaved and more able to focus on their education.

A fourth finding is that there are two approaches to affective learning for adults with distinctly different goals: one approach focuses on passing classes or increasing grades; and the second approach has a broader goal which is the development of leadership skills required for being an effective professional. Both approaches produce the same results in terms of academic and affective outcomes. In addition, these two approaches are based on different theories (the former based in psychological theory, the other based in sociological theory), and they are applied in courses in distinctly different ways (the former provides short exercises that can be incorporated into existing courses so that the student will successfully complete the course, the other immerses the student in coherent affective experiences which develop their leadership skills).

The final finding is about the degree to which affective and non-cognitive academic programs were based on evidence to support their effectiveness. As a result of investigating a variety of programs and communicating with researchers in the field, we have concluded that many programs using affective methods are based on laboratory- or field-tested theories and the results of controlled experiments in the classroom. The interventions used in many of these programs have been demonstrated to work in controlled settings, but in many cases these programs do not have evidence that their implementation of these laboratory-tested theories are actually effective in practice. There is a general lack of follow-up evaluation of these programs' methodologies, and limited assessment of the impacts of their interventions both at the student-level outcome and the training of faculty to reproduce the student-level outcomes.

## **Documenting Findings and Interviews with Five Experts**

### **Section Introduction**

This report is the culmination of a sabbatical project seeking to survey the recent literature on affective and non-cognitive learning and the impact of affective and non-cognitive programming for adult learners, particularly community college students. The report is a compilation of interviews with experts in affective and non-cognitive learning, programs that implement non-cognitive practices, and a review of selected articles and books on key ideas in this field.

The report begins with a summary of the key findings that emerged from this research project. We then present a selection of important theories that form the backbone of the literature discussed in the report, the experts' research areas, and the programs' methodology. The theory is followed by profiles of the experts interviewed for this project, profiles of selected affective and non-cognitive programs, and an annotated bibliography. We also include a number of curricular exercises adapted from or based on the other sources reviewed in this report.

### **Key Findings**

The following section describes the major themes that emerged from this research project. These findings reflect the challenges that affective and non-cognitive programming can address as well as steps that community college faculty in particular can take to support their students. We also discuss the structures of non-cognitive and affective programs and how structural choices and evaluation impact programs' effectiveness.

#### **1 Poverty and Stress**

The literature on affective and non-cognitive learning emphasizes the importance of considering students' backgrounds when assessing their educational needs; affective and non-cognitive strategies support students holistically and provide tools that help them succeed in all areas of their lives. Many underprepared students come from backgrounds that include poverty or trauma, and these experiences impact their psychology and the resources and supports they need to succeed. People who experience chronic scarcity are cognitively overloaded by the volume of information needed to deal with daily tasks like paying bills, accessing services, and meeting their basic needs. For adult learners, the additional tasks required to manage schoolwork on top of other obligations create a heavy cognitive burden.

A significant result of growing up in poverty is elevated chronic stress, and increased stress has demonstrable physiological and psychological effects on student performance. The human stress response system is very sensitive to environmental factors during childhood; children living with scarcity experience more toxic stress than middle class children, and show physical signs in the form of higher blood pressure and levels of certain stress hormones. In the long term this can

impede brain development, and high levels of stress make it more difficult for children to regulate their emotions and to develop executive functions like working memory, attentional control, and cognitive flexibility, all of which are necessary abilities in an academic context.

Support from adults can help mitigate the effects of stress on young children, but for students not lucky enough to have consistent support during early childhood the transition to school becomes much more difficult. Children may experience delays in literacy and numeracy, falling further behind as material becomes more complex. Struggling to keep up with their peers contributes to negative self-image and feelings about school, and this added stress may lead to behavioral problems. Responses to misbehavior result in continued elevated stress, trapping children in a vicious cycle. Many adult learners experienced these delays and subsequent struggles and are entering higher education underprepared as a result.

The impact of stress on academic performance is a rich area of research (Crum et al. 2013; Jamieson et al. 2012; Jamieson et al. 2013a; Jamieson et al. 2013b; Yeager et al. in press). The life cycle of an experience of stress begins with an environmental or contextual catalyst, which is followed by physiological response and subsequent interpretation of the stressor and psychological response to it. Changing or reducing environmental stressors is challenging and has a limited impact, so much of the recent research on stress is engaged with altering psychological responses to stress. People may respond to a stressor as a threat (where coping skills and resources are insufficient to meet the need) or as a challenge (where individuals feel capable of responding to the stressor). Encouraging students to reappraise their stressors as challenges rather than threats results in improved cardiac function and improved performance, and stress reappraisal interventions have been shown to positively impact students' ability to persevere in the face of day-to-day stressors like public speaking, interviews, and tests.

## 2 Belonging, Autonomy, and Growth

Community college students may experience stigma that comes with the 'community college' label, and may be especially vulnerable to feeling less prepared, less competent, or less connected to their educational community. The expert interviews and literature discussed in this report argue that the most effective educational and pre-professional training for students must meet several key needs (Allen et al. 2011; Deci & Ryan 2008, 2012; Ryan & Deci 2000; Tough 2016). In order to sustain motivation, students need a sense of social belonging, a degree of autonomy, and to feel competent while still being challenged. Social belonging is the strongest predictor of student persistence and completion (Productive Persistence interviews). If instructors can create an environment that meets these needs, students will be better able to complete work that is not inherently fun or satisfying.

These needs can have paradoxical effects when underprepared students are met with punitive discipline or distrust on the part of teachers. When students misbehave, the response is typically

more control and authority, which diminishes their feeling of autonomy. When students fall behind academically, they lose the feeling of competence that sustains their motivation in the face of challenge. And if their relationships with teachers are damaged or they lack opportunities to connect with peers, they have a diminished sense of relatedness and belonging.

Luckily, teachers can create environments conducive to connection and engagement by moving beyond the cognitive and thinking holistically about their students. One way to do this is by using project-based learning, which encourages students to connect with and support their peers and empowers them to address complicated interpersonal dynamics in addition to applying course content in a relevant context. Project-based learning can also engage students by providing opportunities to connect their learning to their lived experiences, communities, interests, and career plans.

### 3 Faculty and Student Success

Faculty have a tremendous ability to positively impact their students' education in ways that go beyond teaching content. Teachers' mindsets and the classroom environments they create can impact many students in a given year and many more in a longer span of time than one-time interventions do. The quality of teacher-student relationships is fundamentally important to students' motivation and engagement with school. When students feel mutual respect, understanding, and trust in their learning environment they are better behaved and more able to focus on their education (Allen et al. 2011; Okonofua et al. 2016).

Students coming from backgrounds of scarcity often have experiences of being powerless in the face of authority, whether in benefits offices, the criminal justice system, or inflexible workplaces. If they feel the same sense of powerlessness in the classroom they may lose hope, become disengaged, or have diminished self-esteem. Many students were negatively impacted by punitive discipline during their early education and can be better served by empathic approaches that engage with students' experiences, challenges, and motivations. When students have even one teacher who connects with them in a respectful and understanding way, their academic performance, disciplinary records, and self-reported investment in their education all improve (Okonofua interview; Okonofua et al. 2016).

Faculty can support students and be understanding of their needs by avoiding fundamental attribution errors that label students as troublemakers or as disinterested in their education. For example, if a student fails to complete an assignment, faculty can engage with that student to ask about the cause (which could be a family emergency, a sudden change in work schedule, or some other crisis) rather than laziness or lack of commitment. Empathic approaches like this one create open communicative pathways between instructors and students and help build trusting and open relationships (Daminger et al. 2015).



#### 4 Activities Focused on Leadership vs Interventions Aimed at Retention

The programs and initiatives investigated as part of this research project fall into two general categories. Some are interventions designed to target a particular mindset, challenge, or skill set; these interventions tend to be focused on improving particular metrics like grades, completing courses or disciplinary record. Their focus is to help students improve in their coursework and complete their classes. Another subset of programs takes a holistic, intensive approach and focuses on developing a suite of mindsets and behaviors that will serve students in all aspects of their lives over the long term as leaders. These programs often focus in particular on the skills needed to excel in professional environments and help students become promotion-ready. There is growing awareness that a focus on social, emotional, and affective dimensions of development promotes student success, and this has driven the creation of new programs and practices that aim to instill a range of skills and behaviors in students.

A key finding of this project is that students are best equipped to succeed in the workplace if they receive training related to professional and personal skills as part of their education. These skills tend to be divided into two dimensions - knowledge and mindsets (which can be taught or encouraged) and behaviors (which require students to put their new knowledge into practice). Project-based learning emerges as an important method by which students can develop self-awareness and self-regulation as well as enhanced social skills and leadership ability. Project-based learning can also help students develop approaches to learning and work that will serve them well in the future.

While holistic programs that focus on the development of personal and professional skills are particularly relevant to career preparedness, they also support students' performance in a higher education setting. Many professional skills, such as time management, communication, leadership, and attention to detail, are transferable to academic contexts, and they can help adult learners manage their many obligations in addition to work and school. Programming that assesses skill development, addresses students' career ambitions and interests, and develops skills in context also motivates students to participate and excel in order to meet their goals.

#### 5 Evaluation and Evidence

An important goal of this research project was to assess the degree to which affective and non-cognitive academic programs were based on evidence to support their effectiveness. As a result of investigating a variety of programs and communicating with researchers in the field, we have concluded that many programs using affective methods are based on laboratory- or field-tested theories and the results of controlled experiments in the classroom. The interventions used in many of these programs have been demonstrated to work in controlled settings, but in many cases these programs do not have evidence that their implementation of these laboratory-tested theories are actually effective in practice. There is a general lack of follow-up evaluation of these programs' methodologies, and limited assessment of the impacts of their interventions. We



believe that rigorous longitudinal evaluation of affective non-cognitive programming must take place in order to show that these programs' interpretation of the theories is having an effect. Two programs that have studied their own effectiveness in this way are the Productive Persistence work at the Carnegie Foundation for the Advancement of Teaching and the Academy for College Excellence model, founded at Cabrillo College.

### **Expert Profiles (p.10-19)**

This section of the report documents the experts relevant to this project. First, we list the names and affiliations of 12 experts who were candidates for in-depth profiles. Five detailed profiles follow; these profiles are of Anne Murray Allen (Conversant), Omid Fotuhi (Stanford University), Jeremy Jamieson (University of Rochester), Jason Okonofua (Stanford University), Mandy Savitz-Romer (Harvard Graduate School of Education), and David Yeager (University of Texas-Austin). Each detailed profile includes a short bio of the expert and a summary of their interview, highlighting key theories, experts, and programs mentioned.

#### Candidate Experts

The following experts were candidates for profiles; they are listed along with their institutional affiliation to facilitate further investigation if desired. The candidates in bold were also interviewed. While there is not a detailed profile for these candidates, the content of their interviews is incorporated into the report.

- **Rachel Beattie, Carnegie Foundation for the Advancement of Teaching**
- **Kathy Booth, WestEd**
- Edith Chen, Northwestern University
- Alia Crum, Stanford University
- Angela Duckworth, University of Pennsylvania
- Carol Dweck, Stanford University
- Jennifer Eberhardt, Stanford University
- James Gross, Stanford University
- Bruce McEwen, the Rockefeller University
- Dave Paunesku, Stanford University
- **Todd Rogers, Harvard University's Kennedy School**
- **Nikki Schechtman & Louis Yarnall, SRI Education**