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Key Learner Characteristics that Produce Academic Success

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Abstract

Colleges continue to struggle to increase the success of their students. Many factors or learner characteristics that enhance student learning and success emerge from a meta-analysis of student success research. This paper integrates these characteristics with 20 years of empirical research on *learning-to-learn* to develop a 50 characteristic research-based model of a quality collegiate learner: a student who would be successful in any undergraduate program. These learner characteristics are organized into seven performance categories: learning processes, productive academic behaviors, growth mindset, academic mindset, learning strategies, affective learning skills, and social learning skills. Research shows that each of these characteristics has a significant impact on student success and is malleable. Our research illustrates that the Learning-to-learn Camp produces significant improvement in each of these 50 success factors.

Introduction

Ample research exists regarding students' failure to progress in and/or graduate from high school and college (Horton, 2015) and the challenges confronting secondary and post-secondary educational institutions as they strive to increase their completion rates (Kuh, 2006). The volume of research in this area has increased significantly over the last couple of decades as pressures mount through policy changes such as the drive towards performance based funding.

Learning-to-Learn Camps provide hope for successfully addressing these completion rate challenges. Over 20 years, Pacific Crest and the members of the Process Education Academy have improved, refined and contextualized these camps to effectively improve student learning performance and skills and the non-cognitive skills as documented in student growth papers written during the camps (Apple, 2015). Table one, Profile of a Quality Collegiate Learner (PQCL), presents the success factors arranged according the aforementioned performance categories. The PQCL presents characteristics that significantly increase the probability of student academic success as measured by graduation rate and GPA and is validated by the research literature and our empirical studies.

The PQCL contains 50 dimensions of learner performance, with performance criteria describing expectations for the learner. The seven performance areas tables (tables 6 – 12) provide references to specific research studies and students' descriptions of the transformational learning produced by the Learning-to-Learn Camps. This set of tables is a powerful illustration of the transformational learning produced by the Learning-to-learn Camps.

Table 1 Profile of a Quality Collegiate Learner

Learning Processes	
Is a master learner	Uses the Learning Process Methodology to construct transferable knowledge through thinking critically & generalizing
Reads	Processes all forms of informational resources to produce understanding and meaning through thoughtful inquiry
Writes	Consistently uses writing to help think, clarify, and document ideas, plans, thoughts, and reflections
Thinks critically	Asks critical questions, analyzes information, and synthesizes meaning to elevate understanding and clarity
Solves problems	Identifies & defines problems with key issues and assumptions, producing validated and generalized solutions
Processes information	Engages all senses to access information quickly and distinguishes relevant from irrelevant information and its level of quality
Reflects	Takes time to produce higher level of learning, understanding of self, and reasons behind actions and decisions

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Productive Academic Behaviors	
Is engaged	Brings 100 % of energy and involvement to each activity every day
Is focused	Applies all efforts to the task(s) at hand and filters out all distractions
Is prepared	Understands expectations, collects and organizes resources, and has a plan for learning
Is organized	Knows when, where, and what needs to be done in a timely and systematic way

Growth Mindset	
Is a self-grower	Wants to grow from every experience and so sets growth goals, self-challenges, self-assesses, self-mentors, and mentors others
Is committed to success	Will do everything necessary to reach the milestones towards stated goals
Self-assesses	Sets criteria for each performance, makes key observations, reflects on and analyzes observations, behaviors, and actions, consistently making improvements without prompting
Is positive	Is energetic, passionate and invested in life by seeing the value, opportunity, and beauty in each new situation and person
Is a self-starter	Takes the initiative to begin with each new experience quickly with a plan to maximize their opportunity and learning
Is open to feedback	Wants to improve future performance by seeking out feedback from whatever channel they can and turn this feedback into assessment
Is open-minded	Receptive to diverse view, perspectives, and paradigm-shaking ideas
Self-challenges	Pushes themselves outside their comfort zone, increasing failure and growth opportunities

Academic Mindset	
Clarifies expectations	Knows what others want delivered by which dates and can establish standards of quality by writing performance criteria
Is inquisitive	Constantly seeks new knowledge in multiple forms and from many disciplines by asking lots of interesting questions
Is self-efficacious	Has a strong belief in who they are, who they can become, and their ability to be successful in everything they attempt
Is self-motivating	Has passion and desire to explore new information, concepts, and challenges in areas of interest
Is self-confident	Approaches each new task with self-assurance that mastery of a new challenge can be met
Creates a life vision	Evolves a vision for life based upon an analysis of past, present, and future that includes life goals, and a well constructed plan for achieving these accomplishments

Learning Strategies	
Sets goals	Sets clear goals and supporting objectives, maintains a constant focus on producing results aligned with these goals by assessing progress towards goals and making appropriate changes to reach them
Has learner ownership	Takes full responsibility before, during, and after each learning experience for constructing the expected knowledge by their own means

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Learning Strategies (continued)	
Use resources effectively	Explores all aspects of the college and each course to inventory each resource, its: potential use, and how to effectively use that resource given a useful situation
Validates	Affirms their own understanding and growth with certainty
Uses metacognition	Understands the implications of their behaviors and actions on others and adapt appropriately for each changing situation
Plans	Before action, stops and thinks of how to do something effectively and lays out a structure to produce the quality work desired

Affective Learning Skills	
Persists	Uses failure as a frequent and productive road to success
Manages frustration	Puts things into perspective so current context doesn't overwhelm current performance
Manages time	Allocates time for the most important tasks and then effectively uses that time
Prioritizes	Prioritizes tasks to effectively live a balanced life by putting first things first while taking care of self
Is disciplined	Does what is needed to be done even though other things are more enjoyable and exciting
Take risks	Performs publicly, where outcomes are not known and failure is very possible
Leverages failures	Realizes the growth potential coming from each failure through action plans
Asks for help	Perseveres through difficult tasks, making good decisions about when to seek help
Works hard	Diligent, works long hours and uses parallel processing to increase work produced per hour of time
Adapts	Continually changes to respond optimally to new contexts

Social Learning Skills	
Is a team player	Brings a positive attitude, like supporting and helping others, congratulates others, fills in gaps in a cohesive manner, and is empathetic when others are having difficulties with their performances or personal lives
Is collaborative	Partners with others, performs their roles effectively, asks for help when it is needed, and supplies assistance to others
Is responsible	Can be counted on to produce quality work that exceeds expectations within the allocated time and resources given
Is assertive	Contributes proactively within a community and a team to add value and not be marginalized
Is connected	Has many friends, communities, and activities that influence growth and development of self and others
Is a communicator	Effective in interactive conversation in informal and formal settings that includes articulating new ideas
Seeks diversity	Understands and appreciates the values, differences, and perspectives of others
Speaks publicly	Assesses audience, prepares a clear meaningful message and articulates with impact to change minds
Is well	Maintains balance by taking care of self, sleeping effectively, exercising, eating well and engaging in social activities

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Profile of a Collegiate Graduate

Accreditation agencies, both regional and professional, have been raising public expectation that educational programs should demonstrate outcomes that enhance graduate success in their professional and personal lives. As can be seen in the PQCL, almost every learner characteristic listed is a trait that businesses, government, education, non-profits, and graduate schools demand. It is our contention that an initial emphasis on learning-to-learn would help all institutions of learning achieve the outcomes that these stakeholders desire.

This paper is a cornerstone in the series of learning-to-learn research papers. It describes the transformation of an at-risk learner into the student that every college and faculty member would like to work with and who will be academically successful. This Quality Collegiate Learner has the capability of being successful in any academic challenge, including high school, undergraduate college, professional programs, or pursuing advanced graduate degrees. Success factors are learnable. Thus, the identification of these learner characteristics is the first step in assisting colleges in establishing programming for learner development. It is our experience that even in the face of numerous significant personal issues, such as those faced by many students at open access colleges, every individual can be empowered to overcome these issues and become successful.

Definition of Academic Success

The most common dependent variables representing student success identified in the literature are first year retention, graduation rates, and grade point average (GPA). Farrington et al. (2012) present a strong argument based on the results of seven major studies that past GPA is the strongest predictor of future academic success.

Success Factors

A success factor is a definable learner characteristic that has been shown to significantly contribute to academic success. The PQCL was first developed from our empirical studies that analyzed the student self-growth papers from a variety of Learning-to-Learn Camps. The students identified growth areas that were meaningful to them in relationship to future performance. We then took this model and compared these learner characteristics to those identified in a large meta-analysis of many different studies of student success conducted by Farrington, et al. (2012). In fact, their research alone identified half of the success factors discussed in this paper: study skills, attendance, work habits, time management, help-seeking behaviors, metacognitive strategies, and social and academic problem-solving skills that allow students to successfully manage new environments and meet new academic and social demands. Other studies have added additional critical success factors, including students' attitudes about learning, their beliefs about their own intelligence, their self-control and persistence, and the quality of their relationships with peers and adults. An integration of the results of these studies with our own work led to the PQCL, where each success factor is defensible, most by multiple studies.

A cursory search of the web revealed numerous sites promoting means to increase college students' success. We found more than 35 of the PQCL learner characteristics (Table 2) in just 13 sites (Table 3).

Alternatively, meta-analyses of decades of research surrounding the Big-Five personality model and its relationship to success identified 32 learner characteristics of the 50 characteristics in the PQCL (Barrick & Mount, 1991).

There are additional learner characteristics that both students and Learning-to-Learn Camp facilitators documented as important but were not included in the PQCL because we were not able to justify them with published research. These included: 1) a strong identity as a learner, 2) being empathetic/respectful, 3) having developed a strong support system, 4) personal financial management, 5) being ethical; 6) listening actively, 7) making good decisions, 8) being professional, 9) generalizing, 10) using methodologies, 11) using learning skills, 12) demonstrating integrity, 13) seeking mentors, 14) having passion, and 15) evincing leadership.

Transforming Risk Factors into Success Factors

Pacific Crest has demonstrated the transformational power of the Learning-to-Learn Camps (Apple, 2015). Farrington's work (2012) also supports the contention that quality, short-term interventions that target students' psycho-social beliefs—for example students' beliefs about their intelligence, social belonging, or the relationship between their performance and future goals—have a substantial and sustained positive

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Table 2 Success Factors Identified on Some "College Success" Websites

Source	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Is engaged	×	×	×	×	×			×	×	×	×	×		10
Is connected		×	×			×	×	×		×		×		8
Is organized			×			×	×	×	×		×		×	7
Prioritizes		×			×	×			×		×		×	6
Maintains balance(Is well)					×		×	×		×	×		×	6
Clarifies expectations							×	×		×	×	×		5
Leverages failure	×					×		×			×	×		5
Creates a life vision	×	×								×	×		×	5
Manages time		×	×						×	×			×	5
Plans		×				×			×		×		×	5
Is focused (Concentrates)			×	×	×	×		×						5
Asks for help			×								×	×	×	4
Is inquisitive	×									×	×	×		4
Uses resources effectively		×					×		×				×	4
Writes			×							×		×	×	4
Sets goals	×										×		×	3
Manages frustration						×					×		×	3
Is positive			×			×					×			3
Is disciplined									×		×		×	3
Supports groups (Team player)							×		×		×			3
Is open to feedback					×						×			2
Is assertive											×	×		2
Is collaborative		×								×				2
Thinks critically	×										×			2
Is empathetic	×											×		2
Seeks internships			×										×	2
Persists						×					×			2
Manages personal finances				×					×			×		2
Is prepared				×				×						2
Reads											×	×		2
Is respectful								×				×		2
Self-assesses				×							×			2
Self-challenges						×					×			2
Is a self-starter			×									×		2
Sets high expectations				×		×								2
Is a communicator			×											1
Is a decision maker													×	1
Has learner ownership				×										1
Is open-minded						×								1
Is self-confident			×											1
Is self-efficacious												×		1
Is a self-grower									×					1
Is a servant-leader	×													1
Takes risks	×													1

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Table 3 Cited Websites Dedicated to Preparing College Students for Success in Table 2

Source	Name of Site *(Sponsoring Agency)* URL
1	**Secrets of the Most Successful College Students** *(Time Magazine)* ideas.time.com/2013/03/13/secrets-of-the-most-successful-college-students/
2	**Six Habits of Successful College Students** *(Fox Business)* www.foxbusiness.com/personal-finance/2013/01/07/six-habits-successful-college-students/
3	**How to Be a Successful College Student** *(Wikihow.com)* www.wikihow.com/Be-a-Successful-College-Student
4	**Top 10 Secrets of College Success** *(USNews)* www.usnews.com/education/blogs/professors-guide
5	**Making the Grade: Tips on Being a Successful Student** *(ScholarshipExperts.com)* saltmoney.scholarshipexperts.com/resources/campus-life/how-to-be-a-successful-student-in-college
6	**The 15 Habits of Top College Students** *(USNews)* www.washcoll.edu/live/files/3704-the-15-habits-of-top-college-students.pdf
7	**The Perfect 10: 10 Easy and Essential Tips for Students Entering College** *(Emory College)* www.college.emory.edu/home/assets/documents/learning/EssentialTipsFreshmen.pdf
8	**Study Skill Workshop #1: Habits of Successful College Students** *(Long Beach CC)* www.lbcc.edu/LAR/documents/SS%20video%201%20Habits%20Suc%20Students.pdf
9	**10 Ways to Be a Successful 1st Year College Student** *(Niagara University)* www.niagara.edu/assets/listpage/10-Ways-to-Be-a-Successful-1st-Year-Student.pdf
10	**Student Guide to Creating a Successful College Experience** *(Gallup-Purdue Index; GPI)* www.purdue.edu/checklist/BGR/
11	**The 14 habits of top college students** *(University Parent)* www.universityparent.com/topics/academics/the-14-habits-of-top-college-students/
12	**A Professor's Pointers for Success in College: 21 Easy-to-Follow Tips** *(Huffington Post)* www.huffingtonpost.com/ann-marie-gardinier-halstead/a-professors-pointers-for_b_5654706.html
13	**Success in College Guide** *(Mapping Your Future)* mappingyourfuture.org/successincollege/

influence on school performance. Two widely cited psychologists, Duckworth and Seligman (2005), suggest that academic performance depends in large part on students' self-control or "conscientiousness", concluding that "a major reason for students falling short of their intellectual potential [is] their failure to exercise self-discipline". They claim that measures of self-discipline are far more predictive of positive academic outcomes than are measures of IQ. In her seminal work on academic mindsets, Carol Dweck and her colleagues (2011) cite "academic tenacity" and educational interventions that target it, as having a transformative effect on students' experience and achievement in school, improving core academic outcomes such as GPA and test scores months and even years later.

Classification of Learner Success Factors

There are several different and useful ways that the success factors can be classified. For example, using the Big Five personality model (Table 4), the most commonly used system in personality studies, the factors can be organized as follows.

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Table 4 Big Five Model

Conscientiousness	Extraversion	Openness to Experience	Neuroticism (Lack of)	Agreeableness
Organized	Being positive	Seeks diversity	Self-efficacy (doubt)	Professional
Plans	Speaks publicly	Reflection	Confident (anxious)	Collaborative
Responsible	Self-starter	Inquisitive	Focused (scatterbrained)	
Works hard	Assertive	Life vision	Managing frustration (helpless)	
Validates	Communicator	Metacognition	Taking risks	
Prepared	Connected	Focused	Leveraging failures (gives up)	
Self-disciplined		Engaged		
Committed to success		Information processor		
		Critical thinker		

Personality is generally thought to be a fairly stable trait; it is our belief that success factors can be changed, effectively improving academic performance. As a result, we have chosen to organize the success factors according to a framework modified from that proposed by Farrington et al (2012) and with a pedagogical orientation (Table 5). Thus their label *Social Skills* becomes *Social Learning Skills* and *Perseverance* becomes *Affective Learning Skills*. We retained the remaining categories: *Academic Mindset*, *Learning Strategies*, and *Academic Behaviors* and added two additional categories: *Learning Processes* and *Growth Mindset*.

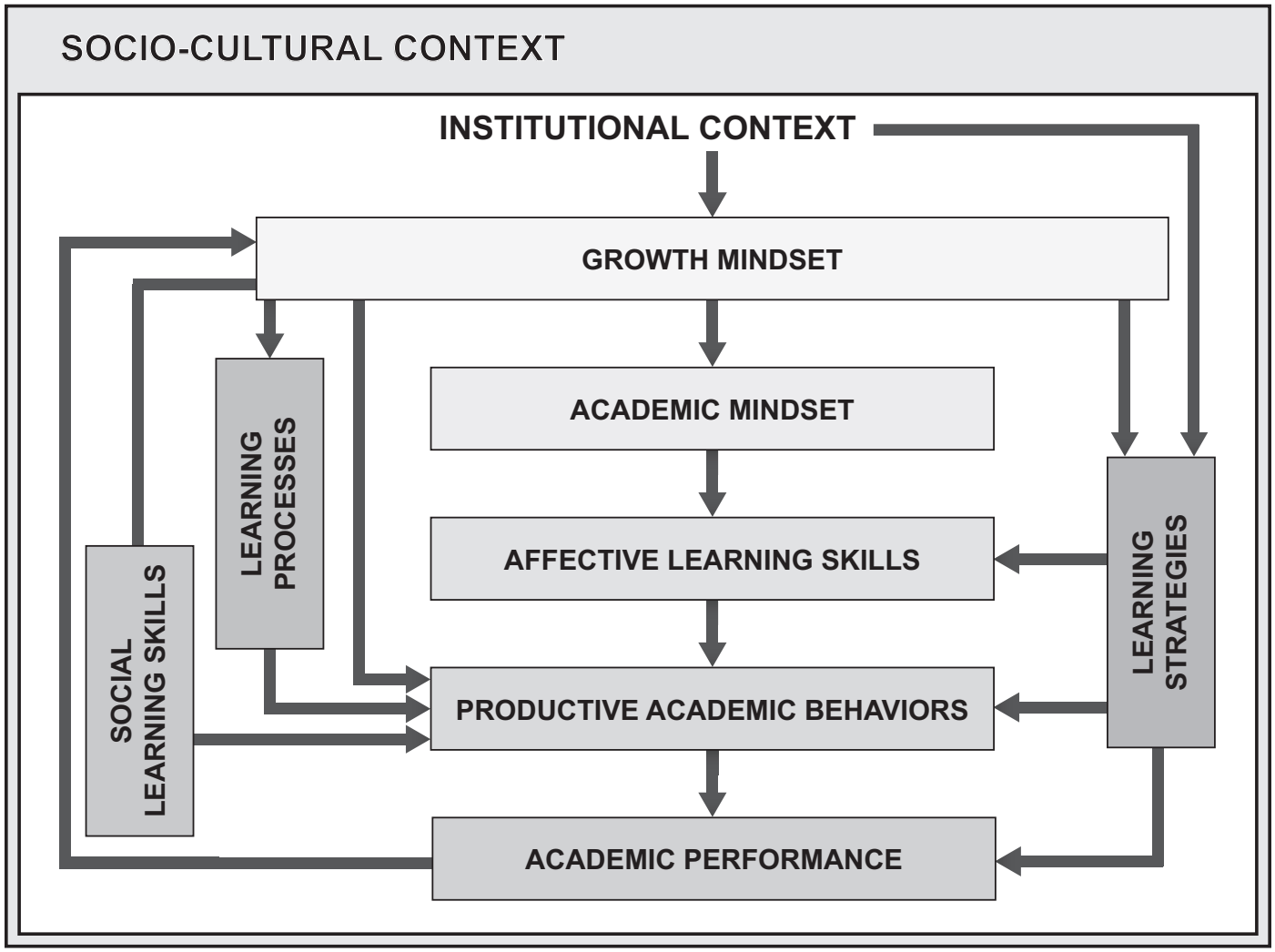
Table 5 Learner Performance Areas

Learner Performance Area	Description of Performance Area
Learning Processes	A set of very valuable, explicit, step-wise learning processes that every quality learner should continually improve.
Productive Academic Behaviors	Expected behaviors that faculty/teachers have of students and when not exercised lead to failure in an academic setting.
Growth Mindset	Belief that learning performance is not fixed but can be improved significantly.
Academic Mindset	Successful learners with academic mindsets know they belong, enjoy their learning challenges and academic work, find value from their efforts and know they will succeed.
Learning Strategies	These strategies are very valuable learner practices (practices, tools, strategies, and approaches) when used effectively lead to greater academic success.
Affective Learning Skills (Grit)	The affective domain of the classification of learning skills has many very valuable skills leading to having "Grit" and greater academic success.
Social Learning Skills	The social domain of a classification of learning skills has many very valuable skills leading to greater academic success.

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Figure 1 The Relationship Among These Learning Performance Areas Illustrated



Learning Processes

Academic Success has long been associated with key learning processes which are essential for success in an academic setting (Table 6). At the heart of being a successful collegiate learner is **being a master learner:** understanding how knowledge is constructed, identifying why and what needs to be learned, collecting and processing relevant vocabulary and information, using examples and expert models, and through thinking critically, producing meaning and understanding, which is then contextualized and generalized so that it becomes working expertise.

The learning process is supported and enhanced by other processes. It begins with **information processing**, which requires the learner to identify the informational base most likely needed to produce the desired learning. Students are expected to spend between 20% - 35% of their time learning through **reading** and this performance is critical for academic success and life-long learning. The **writing** process and **writing to learn** help the learner construct knowledge and then demonstrate their learning through the writing they do on tests and in academic papers. At the heart of learning, reading, and writing is **critical thinking**. The stronger the learner's thinking capabilities, the stronger the other processes become. The ability to apply knowledge in **problem-solving** situations, in both academic and personal contexts has a significant impact on success. An important, but often overlooked learning process is **reflection**—metacognitively stepping back from any activity to learn more about what, why, and how one is learning—thus providing an opportunity to improve. Students make frequent learning decisions based upon these learning processes and the better the decisions, the more successful the students become.

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Table 6 Learning Processes: Supporting Research Along with Student Reflections

Success Factor	Reference	*Student Written Descriptions from Self-Growth Papers and Letters to Friends*
Is a master learner	2, 3, 5, 21, 24, 40, 41, 45	*"At the beginning of the camp, I didn't know how to learn. I seemed to think I knew how to learn, however, based on my success in high school. I didn't understand there was a complex methodology to the process of learning, which can help immensely. From identifying necessary skills and background knowledge, taking this process step by step helped me understand not only what I'm learning but why I want to learn. ... I wanted to learn at a faster rate so I could be a more efficient student in college."*
Processes information	2, 3, 22, 27, 40, 42	*"Before coming to this program, my research paper experience was limited at best. At any mention of a research paper, I would feel sick to my stomach. I hated completing the papers because of a fear of citing improperly. ... I have been given a wealth of knowledge on how to write a research topic, how to find the best sources, and how to cite the information. The seminars on the library database, article validation, and the research methodology helped me gain confidence within my sources and citations. I felt good about the information I was applying to my paper topic. ... I think this growth was caused by my personal interest in finding useful sources, and the wealth of knowledge that was provided on the subject."*
Reads	5, 15	*"Once the Reading Methodology was introduced to me I had an epiphany. I couldn't believe all of the information I was missing by just reading and highlighting my textbook one time. The six steps that make up this Reading Methodology range from establishing a purpose for your read down to synthesizing information. It helps the reader implement active reading, thinking and to become more critically engaged in what you are reading. Looking back at my reading skills I have realized that I wasn't doing any thinking, I was just simply scanning over the words, I wasn't truly comprehending what I was reading. Knowing and understanding the steps the reading methodology has given me, I have the tools to overcome my weaknesses and to become a strong more active reader. Along with this a Reading Log was introduced, which I feel is the best tool I was given this entire week. It really allows a reader to map out exactly what they are looking for while they read."*
Writes	5, 12, 24, 25, 45	*"For one, I usually spent too much time writing and not about thinking about the material itself. Once I started writing down and brainstorming before an assignment, it became much easier. .... Even on this paper, I have used the writing methodology, exploring and assessing my performance on the essay. It is truly a valuable thing."*
Thinks critically	2, 3, 5, 12, 24, 40, 43, 45	*"The reason why I was missing the questions is because I was not critically thinking. I should have analyzed the question, took out key terms, understood what it was asking and then answered the question. Since learning how to critically think, seeing a question I now understand it and understand exactly what the question is asking."*
Solves problems	2, 5, 12, 21, 24, 25, 39, 41	*"For me, the most impactful and insightful one dealt with problem solving. ... By laying out an effective and proven plan step by step I was able to see on paper the process that I was attempting to formulate in my head. Seeing the process that worked on paper allowed me to compare it to my process which I thought worked efficiently and see where it could be improved. For me this was a huge step because it meant being able to finally fully analyze my thoughts. ... My issue has always been that I essentially skip the last half of the steps to effectively problem solve. ... I now know what to do in order to help myself in solving personal problems after analyzing them."*
Reflects	2, 4, 5, 14, 21, 22, 41, 45	*"I learned a lot about myself and I figured out who I am really am as well as what I want to achieve in my life. For example, I have a deep passion to follow my dreams and one day become a surgical nurse. Before I barely understood who I was and what I really wanted to do. I was able to write down everything I am, what I want to do, what the positive and negative aspects are in my life as well as who I love and hate, what I don't like and my entire life was being written down for my own knowledge. I grew to understand who I am and who I can become if I achieve my dreams and goals. I have one focus and only one main focus, which is to reach success and intrinsic happiness."*

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Productive Academic Behaviors

Research consistently highlights four academic behaviors shown to be strongly connected to student success (Table 7). Their absence clearly reveals risk (Horton 2015). The first academic behavior is **engaging** in their learning experiences (at the minimal level this means attending class) by putting 100% of their energy into the current learning task. The second is **focusing** (at the minimal level this means paying attention) so that time on task produces more learning. The third critical academic behavior is **being prepared** by reading, completing assignments, and otherwise being ready to respond to a class activity (at the minimal level this means bringing required materials to class). The fourth success factor is **being organized**, knowing what one needs to do, by what time, and at what quality (at the minimal level, doing homework). Students taking notes and following instructions is a good indicator that these academic behaviors are in play. Notice that these are expectations that almost all teachers have. If missing, the educator often believes that the student doesn't care about his or her learning and success.

Growth Mindset

Some of the newest research on student success focuses on a growth mindset (Table 8). There is significant evidence that academic success increases when students know that they can improve their learning performance to tackle ever more difficult learning challenges. This is called a "growth mindset" (as opposed to a "fixed mindset"). The first success factor in a growth mindset is commitment to **self-growth**, the increasing ability to improve future performance based upon past performance—increasing capacity. An open mind is being open to new techniques, skills, and strategies that support self-growth. Having both a growth mindset and **an open mind** are essential for growing learner performance. The cornerstone of a growth mindset is **self-assessment**, the ability to generate ideas to sustain one's strengths and improve one's limitations so the next performance can be improved. This is enhanced by the ability to **be open to feedback** from others and use this feedback. The next success factor is that one **self-challenges** by raising personal performance expectations and taking on difficult tasks. This kind of student learns from failures to enhance future performance. A growth mindset tends to result in the student having the **positive** perspective that anything is possible: a "can do" attitude that results in consistent growth. This kind of student is wholly **committed to success**. Growth is unsustainable without it because life challenges are sometimes difficult to surmount. The degree to which all of these learner characteristics are present and used can be increased, something that should be prompted by the learner (rather than waiting for someone else to prompt them) as is done when one is a **self-starter**.

Academic Mindset

A student's academic mindset has a significant impact on learning success in every academic setting (Table 9). First and foremost, love of learning is extremely

Table 7 Productive Academic Behaviors: Supporting Research Along with Student Reflections

Success Factor	Reference	*Student Written Descriptions from Self-Growth Papers and Letters to Friends*
Is engaged	1, 5, 6, 9, 24, 26, 34, 35, 45	*"This program is about you making the personal decision to extend yourself as high as you can possibly can go. ... Once you have that motivation, all the skills and knowledge will follow"*
Is focused	3, 18, 26, 34	*"staying focused on your work at all times, which can be achieved through having some type of self-discipline, take risk because you just might be performing the tasking or answering the question correctly."*
Is prepared	2, 5, 7, 15, 34, 39, 45	*"...completing all readings assigned in for homework because it will allow you to be better prepared the next day in class so that you can contribute to your group activities..."*
Is organized	5, 14, 15, 18, 22, 34, 41	*"This camp has helped me improve my organization skills. I had to get organized to keep up with certain reading logs and other information"*

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Table 8 Growth Mindset: Supporting Research Along with Student Reflections

Success Factor	Reference	*Student Written Descriptions from Self-Growth Papers and Letters to Friends*
Is a self-grower	14, 21, 33	*"I learned that self growth can be a conscious activity, as opposed to a subconscious one.. I had believed that conscious self growth was an ability only possessed by enlightened monks and the like, but this week taught me that anyone can learn it. I learn that the process of self growth can happen much faster than I thought possible, given the proper conditions. This week was the proverbial perfect storm of those conditions, causing explosive self growth in most people, myself included. Finally, I learned that self growth, even if taught, is still an organic, self-driven process. .. the growth in the end was still in the areas that I wished to improve."*
Is open-minded	2, 5, 21, 22, 33	*"The "Learning-to-learn Camp" exposes you to want to do and be better in what you lack in. I can honestly say it has made me think out the box and expose me to new materials to use throughout my life as I pursue to become a well renowned engineer in my future."*
Self-assesses	2, 5, 14, 15, 21, 30, 37, 39	*"We learned that we cannot grow from what we produced unless we analyze the final product. Without truly understanding our strengths, areas of improvement, and the insights we gained from the process, there was no way for us to grow from said process. The strengths show where we have improved from where we were before; the areas for improvement help show where we could work to improve the quality of work next time; and finally the insights are what help us understand how to apply what we have taken from the whole process and how we might apply it to a new situation. Through doing this we began to no longer need the approval of another; we could assess ourselves and grow from ourselves, not from the endorsement of another person."*
Is open to feedback	19, 21, 25, 37, 42, 44	*"When I actually take the time to process my failures it is usually rather simple to find where the problem was. For example, if I performed badly on an exam in the past I would just stuff it into the back of my folder and never look at it again. The failure ate away at me, but I tried to find ways to just not think about it. Doing this caused me to continue to fail tests. Now, I understand that ignoring a failure doesn't fix it and doesn't make it go away. From this camp I have learned that the only way to be successful is to learn from your mistakes. Analyzing my failures is the only way to find out how I can fix it. Now, if I get a test back with a bad grade, I will be able to identify the circumstances that led to that bad grade and set up an action plan in order to take the steps necessary to performing at a higher level next time. "*
Self-challenges	2, 3, 21, 23	*"...it is easy to stay in your comfort zone but nothing different or exciting happens in your comfort zone. It should be called the uncomfortable zone because you are stuck at a standstill..."*
Is positive	2, 15, 19, 22, 33, 45	*"...I was always beating myself over mistakes that I made. The program aided me in stopping these destructive tendencies and changing my mentality to "what should I do better next time..."*
Is committed to success	9, 18, 22, 26, 33, 45	*"...This program is about you making the personal decision to extend yourself as high as you can possibly can go. ... Once you have that motivation, all the skills and knowledge will follow..."*
Is a self-starter	5,12, 43	*"...I grew so much in the past week. I stopped procrastinating as much. I tried to become more motivated, and finally, I become the leader I always knew I could be..."*

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helpful in producing a successful performance in a learning environment. Since education is focused on learning and the development of the learner, the more **inquisitive** the learner, the more connected he or she is to the academic environment. Because academic success is most often measured with GPA, a critical success factor is **clarifying expectations**: knowing what needs to be done and at what quality in order to achieve the desired grade. A learner's **self-efficacy,** the belief in his or her capacity to perform (or learn to perform) at a given level is what allows him or her to **be self-motivating**—if you believe you can do it, you can find a way to *want* to do it. Every successful performance in an academic setting, especially during evaluation processes, makes the student more **self-confident**. The academic mindset also includes creating a well-developed **Life Vision** including a personal history, a self-analysis, an exploration of life passions, a vision of one's personal future, an educational plan, and an integrated career and life plan.

Learning Strategies

Successful students continue to develop, evolve, and refine their toolset for learning more effectively. While this toolset varies from student to student, the most successful students consistently use most of the strategies in Table 10. Foremost is **setting goals** for life, for the program of study, for each term, and for every course. When students take **ownership of learning** they free themselves from being subject to the vagaries of instructors and the learning contexts in which they find themselves, accepting that they are in charge of

Table 9 Academic Mindset: Supporting Research Along with Student Reflections

Success Factor	Reference	*Student Written Descriptions from Self-Growth Papers and Letters to Friends*
Is inquisitive	5, 12, 22, 24, 45	*"I now can say that I am an engage in learning ... teaching another person and while in the process I still will be learning. ... This area I know will lead to success in my life because no matter how much you know you can never know enough."*
Clarifies expectations	19, 21, 37, 44	*"I understand that it is essential for a self-grower to know what is expected of me, know my areas of improvement, and know how to improve those areas. The fact that one of my goals is to learn how to assess myself and accept assessments from others proves that I am willing to find my areas of improvement and work on them."*
Is self-efficacious	1, 3, 5, 6, 15, 21, 24, 26, 31, 33, 37, 38, 39, 45	*"Being in this camp has helped me grow tremendously and it has opened my eyes that there is always room for improvement It amazes me that I did in four days what I couldn't do in seventeen years. Not only did I grow but I watched others grow right with me"*
Is self-motivating	3, 5, 6, 9, 12, 15, 21, 37, 38, 39, 45	*"...A self-grower is someone who has achieved a higher level of motivation, intrinsic motivation to be exact. It means that they no longer need someone to push them to go forward, instead they are the ones in control, and they make the critical choices for themselves..."*
Is self-confident	6, 24, 37, 38	*"...If you have confidence and believe in yourself you will pass the program with flying colors..."*
Creates a life vision	21, 24, 27, 36, 38	*"I have never thought about nor asked myself "who am i" the way I have in the past 3 days. I always had a vision or an idea about who I want to be, and I always had a slight idea of who I was but I never truly understood what it meant. I struggled with finding myself for a very long time, I thought I was one person, the married housewife, and when that didn't go as planned I really needed to get back to the drawing board and start over. Even when I knew what I wanted I was never satisfied. I didn't have the dream job I always wanted, I didn't have the education I knew I deserved and I certainly didn't have the husband I wanted. I was floating around wasting everyone's time and money and really not doing anything productive. This camp has taught me the importance of a Life Vision and a Life Vision Portfolio. ... This LVP will hold all of my past and future accomplishments and dreams and I cannot wait to start building it. "*

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their own learning, regardless of the context. **Planning** enables the learner to make the most productive use of limited time. By identifying and **using resources effectively**, learners enhance both the quality of the performance and the products of that performance. Knowing that errors are always possible, even for experts and even in the best curricula, strong learners **validate** their understanding, ensuring that they know that they know. An important learning strategy and success factor that encompasses these other learner characteristics is **using metacognition** or **being metacognitively aware.** This means that the learner thinks about his or her thinking, being aware of what they're doing, and knowing why they decide to do what they're doing. Ultimately, the quality and quantity of success is highly correlated with the effort expended: how **hard one works**.

Affective Learning Skills

Grit—the perseverance and passion for achieving long-term goals—is often associated with the success of famous historical leaders, and modern researchers

Table 10 Learning Strategies: Supporting Research Along with Student Reflections

Success Factor	Reference	*Student Written Descriptions from Self-Growth Papers and Letters to Friends*
Sets goals	2, 3, 6, 21, 25, 27, 38, 39, 41	*"You must set goals and be driven to reach them on your own because others can't make that decision for you. We are at a point in our life where we must be self-motivated because this is our life and no one has to live with those decisions but us."*
Has learner ownership	2, 5, 6, 24, 37, 38, 41	*"...it taught me how to grow and learn to learn from myself..."*
Plans	2, 3, 5, 12,14, 21, 41	*"Currently, the outcomes of my efforts are very different. After applying a planned strategy my efforts have been more effective. I have developed problem-solution systems that helps me better analyze what actions to take when faced with a problem. .... Just a simple change in planning and this process has helped me to excel academically. "*
Uses resources effectively	19	*"Another area that I have improved in is knowing the importance of using the resources on campus and the help of others in order to succeed. During my first year, I rarely asked anyone for help. I did not use the campus resources has much as I should. I did not even step foot into the library until the middle of my second semester. I felt very uncomfortable asking people for help because I did not want anyone's help. ... With the vigorous work that I had to accomplish during the course of this camp, I have learn that I need help! I could not have completed my Learning-to-learn book without the help of my coach, mentor, and group members. I have learn that everyone needs help and cannot do it on their own at times."*
Validates	2, 3, 5, 6, 8, 14, 29, 37	*"If we got the answer then we were asked why we chose that particular answer. Validation is a word I will hear for the rest of my life. Validation is the key word for being successful in college and in life, for if you know why you have the answer then you have a better understanding of what you have learned"*
Uses metacognition	3, 5, 6, 16, 21, 24, 36, 37, 40, 45	*" Another area where I increased in skill was my meta-cognition. To clarify, this was my ability to switch between an immediate frame of reference and an assessing from a of reference. It includes the ability to know which strategy to use for problem solving, and can be loosely defined as "knowing about knowing". It is also closely related to self knowledge and self assessment."*
Works hard (productive)	5, 22, 28, 33, 43, 45	*"You have to learn how to manage your time, be productive in the classroom and in life - I was able to accomplish things I never thought I would in this short amount of time."*

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are overwhelmingly confirming that correlation. The affective learning skills correlated with grit can be found in Table 11. **Persistence**, seeing the way to the finish line no matter what obstacles are encountered, is perhaps the skill most frequently cited. The willingness to **take risks** and accept and tackle challenges is another important component. When results are short of expectations, as inevitably happens, successful learners **leverage their failures** and **ask for help** in improving their performances for future growth, leading to success. They handle this failure by increasing their coping skills and **managing frustrations**. In part, frustration is reduced by **prioritizing** (putting first things first), dividing a larger goal into sub-goals and mastering each one in turn, and by planning and **managing time** wisely. The actual and effective use of time planned requires **self-discipline**—doing what needs to be done no matter what current and more pleasurable distractions may exist. As new challenges and situations arise, learners must **adapt** to the new demands and expectations that life, college, and culture imposes on learners. The healthier the learner is—physically fit, well nourished, rested, and emotionally balanced, the greater the learner's overall **wellness** and academic success tends to be.

Social Learning Skills

Colleges are communities that value knowledge, including its learning, creation, application, management, storage, integration, and dissemination. All of these activities are undertaken in dynamic social settings including learning communities, professional organizations, research teams, and so on. Therefore, success in this environment requires a set of universal social skills (Table 12). Communal belonging requires that the learner is **connected** to the community by helping others, contributing to the success of members and the community as a whole, and benefitting in turn from this membership through the reciprocal action of others. **Seeking diversity** opens the door to a host of new perspectives, values, and ideas that can enhance thinking, problem-solving, and outcomes. All this requires skill in **communication**, **teamwork,** and **collaboration**. **Assertiveness** in bringing forth one's own ideas is enhanced by the ability and willingness to **speak publicly** and with ease about ideas and beliefs. The final social success factor is **responsibility**, which is willingness to follow through on commitments made to self and others. Without these social skills, most learners will struggle to meet the requirements that colleges impose.

Summary

Process Education looks at learner growth from three perspectives: 1) The Classification of Learning Skills, 2) Self-Growth, and 3) Learning-to-Learn. The Classification of Learning Skills, developed more than twenty years ago, sets forward the idea of generic skills that when improved, led to improved learning, a critical aspect of the PQCL model. In "What is Self-Growth," (Jain, 2015), eight of the ten components identified as key to self-growth appear as success factors in the PQCL.

As we have shown through correlates in the literature (References) as well as the words of students themselves, the 50 learner characteristics described in the Profile of Quality Collegiate Learner have substantial impact on collegiate and life success.

That there are 50 factors that contribute to success can be daunting to learner and instructor alike, leading to questions about "Where to start?" and "How do I teach/ learn them all?" We find that a strong Process Education environment, as is found in a Learning-to-Learn Camp (Apple 2015), provides a reproducible context in which the factors can each be practiced, assessed, and grown.

Our experience with the camps has shown us just how malleable these learner characteristics are, a position that is deeply at odds with the historical belief in a fixed "intelligence quotient" (IQ) defining a student's permanent *capacity* to learn. But we are confident, as research in human cognition over the last 30 years has continually demonstrated the limitations of the fixed IQ concept. As a result, we must redefine what constitutes so-called intelligence (capacity to learn): It is an interplay between personal cognitive and non-cognitive factors, the environment and sociocultural processes, and it can be changed. This gives us a superior target for a collegiate education (PQCL) and the means to attain it through a pedagogy underpinned by the concepts of learning-to-learn and self-growth. Our challenge now is to convince every institution of higher education that implementing a program based on learning-to-learn will ensure that they are able to produce the collegiate learners and college graduates they desire with greater success.

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Table 11 Affective Learning Skills (Overall Grit): Supporting Research along with Student Reflections

Success Factor	Reference	*Student Written Descriptions from Self-Growth Papers and Letters to Friends*
Persists	1, 6, 17, 29, 34, 39	*"Just putting myself to the challenge shows that I finally have enough faith I need to try even if I fail. ... If I had a chance to do it all over again I surely would because I would work even harder in the camp. I am proud to say I gave my all, didn't quit and worked to the best of my ability."*
Take risks	21, 33, 37	*"I also took a risk this week by signing up for the talent show. I have joked and been the center of comedic attention in my small groups of friends, but never have I done what I am about to do tomorrow. I plan on performing stand-up comedy on stage in front of dozens of people. This is stepping very far outside my comfort zone and if I can do this, I can learn to take more risks in the future. I grew in this area because I decided to finally try something that I wasn't use to and started initiating risk taking."*
Leverages failures	21, 25, 37	*"Self-growth is a person looking at his or her life and figuring out what mistakes he or she made and try to improve on them to become successful. "*
Asks for help	1, 5	*"When I got to a problem that I didn't understand, my pride would not let me ask any of my teammates nor mentors for help. I eventually got out of that and started asking for help. When I started asking for help I understood more."*
Manages frustration	2, 5, 11, 15, 22, 26, 37	*"Once I stopped and released myself to simply learn and not be so driven for to meet expectations and reach success did I actually begin to get something out of this week. My growth was facilitated primarily by my emotions and exhaustion. I learn that it is also important to take care of myself. Some nights I had to go to bed leaving things undone and being unsure when they would get done, which was a new experience for me. I had to decide when was the right time to let myself recover so that I could be productive the next day, too. I also learned that I have more physical, emotional and mental endurance by actually testing them this week."*
Prioritizes	18, 22	*"I am now much better at planning out my day, making choices on what needs to be done and what is a priority, and that we simply are not capable of doing everything."*
Manages time	5, 14, 19, 43	*"Time management is a critical factor for determining success in college. I would have to manage my time by making a schedule of how I am going to balance out my social life with my academic life. My academic life is more important so that is where I would spend the most time, .. Even though, my social life is important the academic life is going to be more important for the career I want to pursue, which becoming a physical therapist."*
Is disciplined	2, 3, 5, 10, 11, 15, 22, 28	*"The "Camp" preps others and including me to take charge of my life and not let any second go by to be waste on foolish things. Work-ethics plays a big asset to my growth also, without that I would not have the initiative to pursue new skills and would not be a reliable source to my team."*
Adapts	4, 5, 37, 45	*" I had to learn to be more self-sufficient. I've always been a very independent person, but I've never stayed the night by myself before this week. By moving into Niemeyer I had no choice, I had to start doing everything for myself. I had to wake up and get ready without my mom telling me to hurry up, and I also had to figure out for myself when I felt I had to go to bed. Because I was thrown into the situation and didn't have any choice but to adapt, I, again, grew up a lot and quickly."*
Is well	3, 36, 37	*"Furthermore, I must set fitness goals to keep my body prepared for taking exams and critically thinking. I believe that when you have a healthy body the mind runs faster and accurately. Mentally when I have a sense of understanding in can produce my best work to show correct correlations between knowing and my thought process. To be positive of success, I will have a planner to organize my day correctly. Ultimately, I will be obligated to follow the daily goals I put time into creating for myself. ... Truly I will be capable to pull metacognition off if I am no longer exhausted from Destiny Raids on my gaming system. To eliminate that horrible feeling I will have fitness goals of the days I live on earth. It is clear as day that when I pull these skills together, generally a successful student emerges from the ashes of failure."*

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Table 12 Social Learning Skills: Supporting Research Along with Student Reflections

Success Factor	Reference	*Student Written Descriptions from Self-Growth Papers and Letters to Friends*
Is connected	19, 26, 35, 36, 45	*"Working with others was another major aspect of my self-growth into becoming a successor. I never was able to work with others because I grew up not trusting people around me. .. I was angry and terrified because I did not who I was going to be grouped with and wondered if they were going to judge me. So, as we got into group the concept was to interact with one another and being to communicate with people from different background, opinions, and aspects of life. Being in the groups of the course of the week made me realized what I was missing when I was being anti-social with people. If it wasn't for the groups, I would not have learned how efficient and exciting teams that work together get things done. Communication was the key in teamwork that helped me break out of my comfort zone and take the risk of getting to know someone and for them to get to know me as well and not be afraid of them judging me."*
Seeks diversity	24, 45	*"The first and arguably foremost skill I improved was my ability to relate to and respect others. More precisely, I learned how to work as a team and trust that my team members would do their part. ... I was forced to let my team members do their parts simply because I couldn't do it for them. When they succeeded as often as I did, I realized that I could trust and respect them, instead of being condescending and arrogant."*
Is a team player	2, 5, 25, 45	*"...I have come from being unsure of myself in group work and sharing my ideas to being a real team asset, participant, and even leader..."*
Is collaborative	2, 5, 13, 15, 22, 26, 28, 35, 39	*"Example of teamwork that I have displayed is, when my partners/team didn't understand I brought us together to evaluate and do the process of elimination when you can't define exactly what something is. This strength is a well deserve ability and whoever possesses it can one day be a team leader and a team player."*
Is a communicator	12, 25, 38, 45	*"Communication and coming out of my comfort zone was a little hard for me. I became more involved into working with them but also communicating with them. By me making a decision to talk to people without knowing them has really made me come all the way out of my shell."*
Speaks publicly	12, 24, 25	*"At the beginning of this camp I was one girl who was not confident in herself and afraid to speak around others. By the end of this camp I have improved my learning skills by 70% in my opinion and I am now ready to take on any challenge that school or life throws at me."*
Is assertive	32, 37	*"At one point our team felt like giving up but I pushed them through it. They called me the motor of the team because of my strength I have to lead. I always thought I was a natural born leader but this camp brought it out of me in the best way possible."*
Is responsible	2, 5, 10, 18, 22, 25, 38, 45	*"learn how to take full responsibility over life and your destiny."*

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