Learners with a growth mindset believe that they have the ability to increase their knowledge (learn) as well as their capacity to perform on the basis of that knowledge (grow). Self-Growers are people who consciously and continuously strive to mentor their own self-development, challenging and assessing themselves to increase their capacity for performance.

Learning vs. Growing

The importance of a growth mindset and the potential for self-growth is only apparent if we're able to differentiate between *knowledge* and *growth*. Professor of Psychology Cy Leise draws the difference succinctly: "Knowledge is the result produced from learning. Growth is the result of personal development produced by self-assessment" (2007). He further explains that while a learner can easily **increase** the amount of knowledge they have, the increase does not automatically lead to ***improved*** learning performance. This jibes with the experience shared in the section **Learning to Learn**, in which freshmen and seniors competed in a learning challenge, and although the seniors had much more knowledge, this did not correspond to an increased ability to perform as learners (Apple, Ellis, & Hintze, 2015). In the simplest possible terms, learning is about increasing knowledge, whereas growth is about improving performance.

The term, "growth mindset" is properly attributed to psychologist Carol Dweck, author of *Mindset: The New Psychology of Success* (2006). Dweck defines *growth mindset* in apposition to "fixed mindset":

Fixed Mindset

"In a fixed mindset, people believe their basic qualities, like their intelligence or talent, are simply fixed traits… They also believe that talent alone creates success—without effort."

Growth Mindset

"In a growth mindset, people believe that their most basic abilities can be developed through dedication and hard work—brains and talent are just the starting point."

The goals of the first Teaching Institute were to improve student learning, faculty teaching, and instructional design to increase productivity (Apple, 1991). This focus on improvement has remained and is at the heart of Process Education. While the actual phrase "growth mindset" is absent, its meaning and the emphasis on **improving learner capacity for performance** is ever-present, even in the earliest handbook. Throughout the handbook, one finds phrases such as,

- *Students will need to learn at a continually increasing rate*
- *Empower students to become better problem solvers, critical thinkers, and communicators*
- *Developing students' assessment skills*
- *Educational process needs to focus on learning skills*
- *Students must learn how to learn*

This makes clear that improvement and growth are the objectives of teaching and learning…not simply making students more knowledgeable.

Growth and Learning Skills

In the textbook *Learning Through Problem Solving* (Apple, Beyerlein & Schlesinger, 1992)*,* a major focus was to help students learn how to learn, improve problem solving and critical thinking, and to improve their learning skills by using self-assessment; a fairly potent recipe for growth. This is because learning skills (see the section **Classification of Learning Skills**) are one of the critical ingredients for self-growth…so much so that perhaps they should have been called "growth skills," instead.

Teach for Learning — A Handbook for Process Education (Apple, 1993) was used as the institute handbook during Teaching Institutes in 1993 and 1994. It articulated a growth-oriented educational focus, explaining that the acquisition and improvement of learning skills would improve learning performance by increasing the rate of learning.

Assessment for Self-Growth

Assessment is the trigger for improvement of performance; in 1995, Apple and Duncan-Hewitt, in their book *A Primer for Process Education* set out a definition of Process Education as being comprised of

1. Education focused on the development of learning process skills ("The rate at which you learn is a function of your investment in learning how to learn and your commitment to developing your learning skills.")

2. The use of cooperative learning, problem solving, and discovery-based learning in an environment of continuous assessment and reflection

3. Student-centered instruction in learning processes

The first piece is learning skills and the growth they make possible. But now we also have an educational environment marked by continuous assessment. The third statement, though seemingly trivial, is actually critical and should be discussed in some depth.

Self-Growers

A "student-centered" approach in learning processes is what puts the "self-" in "self-grower;" this is more than mere ownership of learning (itself a strong principle; see the section on **Culture of Success**); when understood in the context of the first statement, this is ownership of the growth process. This formula was strengthened in *Process Education — The New Educational Mission* (Apple, 1997), in which a self-grower was described as "a life-long learner who continues to grow by utilizing strong self-assessment skills to improve future performance." Self-Growers:

1. Create their own challenges
2. Seek to improve their own learning performance with every experience
3. Take control of their own destiny — "there are no bounds"
4. Serve as a leader and mentor to others
5. Self-assess and self-mentor to facilitate their own growth

This formulation offers learning skills, assessment, and ownership of the growth process ("self-mentor"). But what is the relationship between taking control of one's own destiny and growth or self-growth? It is also part of taking ownership of the growth process, but there is another aspect as well: the idea of creating a life vision was first included in *Foundations of Learning,* (1st ed.) (Krumsieg & Baehr, 1996) as a way to help students make

Figure 1

meaning of their current life and set a direction for their future life plan. This provided the motivation needed for students to begin their journey of self-growth to realize the life plan articulated in their life vision. See Figure 1 for a visual summary of how these pieces and dynamics interrelate. (Each subsequent chapter of *Foundations of Learning* provided tools and challenges to support the first few steps of the student's journey of self-growth.)

Scholarship on Growth and Self-Growers

The description of a self-grower was expanded in the *Faculty Guidebook* module *Performance Levels for Learners and Self-Growers* (Myrvaagnes, 2007) with a rubric for determining performance level as a self-grower (see Figure 2). According to Myrvaagnes,

> Self-Growers have defining characteristics which include an enduring interest in assessment and self-assessment in order to maximize performance in every aspect of life. High-level self-growers... are both motivated and able to use their life vision, self-assessment skills, self-control in the face of challenging situations, positive orientation toward growth, and aptitude for servant leadership to move to the next level.

In *Becoming a Self-Grower*, Leise offers the means for developing into a self-grower. He focuses on the aspects of life vision, self-assessment, control, and servant leadership, adding that, "Individuals who focus on growth find it to be the most compelling motive in their lives" (2007). While the bulk of the focus is on helping learners become self-growers, Hurd speaks directly to the importance of faculty making the same commitment in *Self-Growth Plans for Faculty Members* (2007):

> If faculty members hope to model the behaviors that they are expecting from their students, and to mentor students to become self-growers, they must themselves aspire to become better at their own self-growth, and must consciously work at such development in a disciplined fashion.

The most recent scholarship on self-growth, What Is Self-Growth? (Jain, Apple, & Ellis, 2015) offers 10 key components that enhance self-growth (see Figure 3).

Self-Growth in Curricula

While both *Foundations of Learning* (Redfield & Hurley Lawrence, 2009) and *Learning to Learn: Becoming a Self-Grower* (Apple, Morgan, & Hintze 2013) predate *What Is Self-Growth?*, all 10 of the components of self-growth are targeted by both books. This should not be surprising; the very definition of Process Education calls for "the continuous development of learning skills through the use
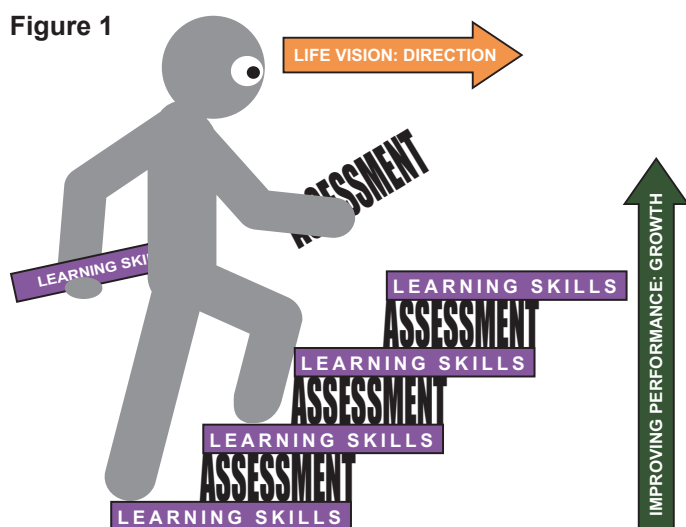
Figure 2 Performance Levels for Self-Growers

	Cognitive	Social	Affective	Psychomotor
Level 5 Star Performers	Understand the reasons for deficiencies in the current paradigm, and readily construct more appropriate paradigms.	Create movements and organizations that often become self-perpetuating.	Control their emotions in challenging situations while managing the affect of others.	Outperform others because of reserves in strength and endurance.
Level 4 Self-Starters	Respond to the needs of research communities, adding incrementally to knowledge in their discipline.	Initiate and manage social structures to accomplish more out of every hour of their time.	Feel frustrated when they are not being challenged to perform at higher levels.	Engage in a rigorous physical routine which provides them with resources for dealing with stress.
Level 3 Responsive Individuals	Use their problem-solving, learning, and thinking skills to improve their performance and get higher-quality results.	Are positive people whom others enjoy and want to have on their teams.	React to challenges with improved performance rather than complaints, feeling good about their accomplishments.	Exercise regularly and pay attention to nutrition because they want to exceed expectations.
Level 2 Content Individuals	Are satisfied with their modest levels of effort in learning, thinking, and problem-solving.	Interact freely with family and friends, but do not seek more diverse contacts and more challenging relationships.	Feel like a cog in the machinery, doing little more than what is asked, feeling their contributions are not very significant.	Want to maintain their current health and fitness levels but are unable to realize much visible progress.
Level 1 Static Individuals	Try to minimize or avoid the effort needed to think, learn, or solve problems.	Limit their social interactions to like-minded individuals who complain about what they are not getting out of life.	Feel that whatever they do will have little impact, that most things are not worth the effort.	Must conserve energy to deal with frequent health issues

Figure 3 The Key Components of Self-Growth

Key Components		Explanation
1	Having a growth mindset	Start with an unconditional and unwavering belief in self
2	Planning	Think before doing
3	Developing a life vision	Initiate or update a life vision of what one wants to achieve or become in life
4	Set performance criteria	Measure the performance
5	Self-assessment	Assess each significant performance with to improve the *next* performance
6	Reflection	Increase self-awareness and metacognition
7	Self-challenge	Take significant risks and continually push oneself outside of the comfort zone
8	Mentoring	Improve self and others
9	Grit	Persevere and commit in spite of personal factors
10	Passion	Self-motivation to walk the walk of one's own values

of assessment principles in order to produce learner self-development." Indeed, the creation of self-growers is the ultimate goal of Process Education (Pacific Crest, 2011, http://www.pcrest.com/resources/pedef.html). Figure 4 lists the 10 components of self-growth along with a suggestion for how to target each component. For each component, the content, activities, or strategies in *Foundations of Learning* and *Learning to Learn: Becoming a Self-Grower* that most strongly supports that component are shared.

In addition to helping learners improve every component of self-growth, both *Foundations of Learning* and *Learning to Learn: Becoming a Self-Grower* include an activity that challenges students to write a self-growth paper, documenting their development in self-growth and capacity. This task is considered the capstone assignment in the Learning to Learn Camps and has proven to be one of the key research tools for analyzing growth outcomes as discussed in Learning to Learn Camps: Their History and Development (Apple, Ellis, & Hintze, 2015). The measurement of growth is now being integrated into Learning to Learn Camps and the academic recovery courses with the analytical rubric based upon the Profile of a Quality Collegiate Learner (Pacific Crest, 2015).

Figure 4 The 10 Components of Self-Growth and How They Are Targeted in *Foundations of Learning* and *Learning to Learn: Becoming a Self-Grower*

Key Components	Steps, Actions, and Activities
1 **Having a growth mindset**	All aspects of the **Theory of Performance** can be improved: identity, learning skills, knowledge, context, and personal factors, and the rate of this growth are in their own hands.
Students are introduced to the concept of growth and given not only performance levels for learners and self-growers, but models and examples for each level of performance. Students are also given the Theory of Performance and tasked with using it as a way to assert their own ability to improve and grow.	
2 **Planning**	Detailing an overall strategy with reasonable timelines for each of the desired aspirations. A concept map can help organize links between identity, skills, knowledge, context, personal factors, and fixed factors.
There is a chapter or experience on "Time, Planning, and Productivity" and students practice prioritizing and writing action plans. Students also practice making both short and long-term goals when introduced to the Life Vision Portfolio.	
3 **Developing a life vision**	Knowing and analyzing who you are, where you come from, what you want to become, and what you would like to accomplish; or determining what one wishes to be or achieve in life.
Students create a Life Vision Portfolio in an early activity or experience and are then tasked with adding to it repeatedly through the course.	
4 **Setting performance criteria**	Determining one's current level of performance with respect to self-growth. The key is to continually increase the level of performance from the current level with clear understanding of the elevated levels and the corresponding pre-established measurement criteria.
The activity/experience that introduces the Theory of Performance also offers the Performance Level for Self-Growers rubric (see Figure 2). Additionally, in the chapter/experience focused on assessment, students are taught to write performance criteria for performances.	
5 **Self-Assessment**	Continually assessing and envisioning outcomes for strengths, improvements, and insights.
Students are prompted to assess their performance in each chapter or learning experience. Further, they are challenged with elevating their assessment skills in the chapter/experience on assessment.	
6 **Reflection**	Taking time to step back from doing to understanding why you are doing what you are doing. This updating of your intrinsically driven inner compass helps you to align your actions and decisions with your values to keep you moving towards your life vision.
Foundations of Learning contains chapter sections titled, "Reflection" where students are prompted to engage in reflective thinking and writing. *Learning to Learn: Becoming a Self-Grower* contains an experience focused on increasing self-awareness and metacognition. It also offers an extended excerpt from "A Comparative Analysis of Reflection and Self-Assessment," by Desjarlais and Smith (2011).	

Key Components	Steps, Actions, and Activities
7 Self-Challenge	Learning to eliminate self-doubt and boosting self-image through preparation, commitment, and timely completion of established as well as impromptu actions, activities, and challenges.

In both texts, students are challenged to set and achieve short-term goals. The content on "Time, Planning, and Productivity" ups the ante with respect to "preparation, commitment and timely completion" as students are tasked with completing a semester calendar, gathering all due dates and assignments for all courses. In *Learning to Learn: Becoming a Self-Grower*, the experience, "Performing when Being Evaluated" contains the Preparation Methodology and gives students the opportunity to work through an upcoming challenge by doing everything they can to prepare.

8 Mentoring	Establishing a clearly-bounded, trusting, and confidential relationship based on mutual respect to achieve clearly-defined goals using the SII principles.

Foundations of Learning offers information about "Selecting a Mentor" as part of the discussion about the Personal Development Methodology. *Learning to Learn: Becoming a Self-Grower* contains an entire chapter (experience) focused on mentoring: "Choosing and Using Mentors Effectively" which tasks students with identifying potential mentors and then entering into a mentoring relationship.

9 Grit	Having self-control, accepting failure as a necessary condition to self-growth, being open-minded, optimistic, courageous, patient, persistent, and hardworking, and having willpower, mental toughness, tenacity, perseverance and resilience.

Both books offer student examples of grit, where challenges were not necessarily met upon first effort but after persistence and perseverance. *Learning to Learn: Becoming a Self-Grower* offers an experience, "Using Failure as a Stepping Stone for Success" that is all about recovering from and learning from failure.

10 Passion	Taking the first step and continuing the commitment with the same conviction, energy, and enthusiasm throughout.

While passion is difficult to teach, it can be modeled and is, in both books. Student examples at Level III or higher on the Performance Levels for Self-Growers demonstrate conviction, energy, and enthusiasm. Additionally, the final experience in *Learning to Learn: Becoming a Self-Grower* is titled, "Shifting from Extrinsic to Intrinsic Motivation." In this experience, students explore how to build a life vision and life based on their values and passions.

References

Apple, D. K. (1991). *Notes for the 1991 Teaching Institute*. Corvallis, OR: Pacific Crest.

Apple, D. K. (1993). *Teach for learning: A handbook for Process Education*. Corvallis, OR: Pacific Crest.

Apple, D. K. (1997). *Process Education: The new educational mission*. Corvallis, OR: Pacific Crest.

Apple, D. K., Beyerlein, S. W, & Schlesinger, M. (1992). *Learning through problem solving*. Corvallis, OR: Pacific Crest.

Apple, D. K., & Duncan-Hewitt, W. (1995). *A primer for Process Education* Corvallis, OR: Pacific Crest.

Apple, D. K., Ellis, W., & Hintze, D. (2015). Learning to learn camps: Their history and development. *International Journal of Process Education*, *7*(1).

Apple, D. K., Morgan, J., & Hintze, D. (2013). *Learning to learn: Becoming a self-grower*. Hampton, NH: Pacific Crest.

Desjarlais, M., & Smith, P. (2011). A comparative analysis of reflection and self-assessment. *International Journal of Process Education, 3*(1).

Dweck, C. S. (2006). *Mindset: The new psychology of success: How we can learn to fulfill our success*. New York: Ballantine.

Hurd, B. (2007). Self-growth plans for faculty members. In S. W. Beyerlein, C. Holmes, & D. K. Apple (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed.). Lisle, IL: Pacific Crest.

Jain, C., Apple, D. K., & Ellis, W. (2015). What is self-growth? *International Journal of Process Education, 7*(1).

Krumsieg, K., & Baehr, M. (1996). *Foundations of learning* (1st ed.). Corvallis, OR: Pacific Crest.

Leise, C. (2007). Becoming a self-grower. In S. W. Beyerlein, C. Holmes, & D. K. Apple (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed.). Lisle, IL: Pacific Crest.

Myrvaagnes, E. (2007). Performance levels for learners and self-growers. In S. W. Beyerlein, C. Holmes, & D. K. Apple (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed.). Lisle, IL: Pacific Crest.

Pacific Crest. (2011). *Process Education definition: A learning object*. Lisle, IL: Pacific Crest. Available at: http://www.pcrest.com/resources/pedef.html

Pacific Crest (2015). *Analytical rubric for measuring a quality collegiate learner*. Retrieved from http://www.pcrest3.com/llc/secure/scoring/analytic_rubric_CL_form1_distributed_0002.pdf.

Redfield, K., & Hurley Lawrence, B. (2009). *Foundations of learning* (4th ed.). Lisle, IL: Pacific Crest.