

# Self-Growth Paper – An Assessment and Research Tool to Analyze Growth Outcomes

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## Abstract

*Students write a self-growth paper to capture a personal summative reflection of their learning and growth and, in addition, the self-growth paper has become a valuable, versatile tool for faculty to strengthen students' self-growth capacity, improve their practice within Process Education, and advance scholarship in teaching and learning. The self-growth paper incorporates many of the Process Education principles in its design. The authors describe ten cases that illustrate how self-growth papers contributed to outcomes of each case. In analyzing these ten cases, we generalized usage of self-growth papers to six primary stakeholders: 1) students who use it as a summative reflective tool to see their own growth; 2) faculty who use it as a summative assessment tool to determine a course's impact on their students; 3) researchers who use it to qualitatively analyze and investigate a broad range of research questions around learning and growth; 4) designers who use it to plan and improve curriculum; 5) program administrators/institutional researchers who use it to generate evidence of transformational learning in support of assessment at the program, institution and accreditation levels and 6) evaluation experts who use it to validate growth-oriented measurement tools. This paper describes how to implement the self-growth paper in the curriculum, to generate and use evidence of growth, and to expand the impact that the self-growth paper can have on Process Education (PE) practice and scholarship.*

## Introduction

While Process Education has many processes that are instrumental in supporting learning and growth, this paper focuses specifically on measurement, assessment and reflection (Apple, Ellis and Hintze, 2016a). Measurement, especially performance measurement, helps the educator and learner measure learner development (Apple, Ellis and Hintze, 2016b). Assessment, especially self-assessment, is the process of measuring quality to improve quality. Reflection is the process of stepping back and by critical thinking producing more meaning and understanding from a life experience (Desjarlais and Smith, 2011). A course that uses Process Education principles and embeds self-assessment and learner development as a primary purpose can greatly benefit from implementing a self-growth paper.

In a self-growth paper, the students self-determine which performance areas and transferable learning skills had the greatest development and growth. In addition, the self-growth paper has the students objectively analyze and document their perceived growth by having them provide supporting evidence of their growth. From this writing-

to-think exercise, students analyze and discover how this growth was produced. Apple, Ellis, and Hintze (2016c), in *25 years of Process Education* describe the concept of self-growth as a self-developed increase in personal capability reflected in a set of transferable learning skills and increased performance capacity. A critical example is *Learning to Learn (L2L)*, where students become stronger self-mentors in increasing their own learning performance through self-assessment and reflection (Apple and Ellis, 2015). A self-growth paper is not itself a measurement exercise or a self-assessment, but a summative reflection to build metacognition of how to strengthen self-growth capacity.

## Self-Growth Paper's Value to Process Education

Process Educators who have used the self-growth paper during the last 20 years have found it to be a valuable tool. Its value and benefit can be seen more readily by aligning its use to the principles of Process Education (Burke, et. al.,2009). The self-growth paper supports each principle of Process Education as illustrated in Table 1. A Process Educator can adhere more closely to the principles by using this versatile tool.

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**Table 1** Self-Growth Papers and their Support of Each Principle of Process Education

<sup>1</sup> Principles of Process Education <sup>2</sup> Benefits of self-growth paper <sup>3</sup> Excerpts from self-growth papers illustrating the benefits achieved by applying the principle

<b>Principles</b> <sup>1</sup>	1. Faculty must fully accept responsibility for facilitating student success
<b>Benefits</b> <sup>2</sup>	a. Students identify risk factors in the self-growth paper that limited their past learning performance b. Faculty discover that every learning skill or key learner characteristic is malleable
<b>Excerpts</b> <sup>3</sup>	<i>"I had to dig deep and look at where I started lying to myself, and why, I had to find the problem that was related to that lie, I had to plan a course of correction to become honest with myself, and [create] attainable goals to move back into success."</i>
<b>Principles</b>	2. In a quality learning environment, facilitators of learning (teachers) focus on improving specific learning skills through timely, appropriate and constructive interventions
<b>Benefits</b>	a. Students describe situations where faculty intervention stimulated the growth; if not mentioned shows not effective b. Each cycle provides insights of how to make those interventions stronger
<b>Excerpts</b>	<i>"From participating in critical thinking questions, to writing very candid papers about my struggles, weaknesses and strengths, I showed strengths in self-evaluation from the very first paper I wrote [in] experience 1: my life vision the comment I received was, 'Angie - this has the level of details, connections, and analysis that produces interesting foundation for what you want to become - we can talk about areas to change without pulling ourselves down - language can have a very negative impact on self-image in the way we frame self-meaning. Dan' to experience 6: my life vision with [Dan's] comment, 'Angie - love the attitude, Dan'. I learned to use positive meaning and words instead of negative to put me down."</i>
<b>Principles</b>	3. Mentors use specific methodologies that model the steps or activities they expect students to use in achieving their own learning goals.
<b>Benefits</b>	a. Methodologies of self-assessment and reflection are strengthened thus increasing self-growth capacity b. The reflection strengthens current understanding of methodologies cited as well as provide future direction
<b>Excerpts</b>	<i>"I plan on applying these skills and methodologies for the rest of my life. I wouldn't have said this before but I'm grateful to have become a self-grower/learner, I have a long way to go. Learning this many skills will take a long time to form into habits that are natural, ones that will work for me on a day to day basis with really thinking about them."</i>
<b>Principles</b>	4. A Process Educator can continuously improve the concepts, processes, and tools used by doing active observation and research in the classroom.
<b>Benefits</b>	a. Provides opportunity to discover patterns that can be analyzed b. Puts students into the role of action researchers who are exploring their own transformation
<b>Excerpts</b>	<i>"My first goal was being able to ask for help and ask questions when I needed to. This was very difficult for me in the beginning. I knew for me, this was not going to be an easy goal. I didn't like asking for help or asking questions because I had always thought that I should be able to figure them out on my own and felt a little prideful too."</i>

**Principles**

5. Educators should assess students regularly by measuring accomplishments, modeling assessment processes, providing timely feedback, and helping students improve their self-assessment skills

**Benefits**

- a. Helps students to highlight how effective their self-assessment skills have become
- b. Helps the educator to assess students because of the magnitude of observations collected

**Excerpts**

*“The most important part of recognizing and facilitating further growth is assessment. Throughout the course I’ve kept seeing growth and assessment like goals and accountability. Alone the two are intentions which may never come to light. By using assessment, we are measuring our growth, and pin pointing areas we can better improve. By targeting specific learning skills that contribute to growth we can facilitate growth in areas we might not be comfortable or familiar with.”*

**Principles**

6. Every learner can learn to learn better, regardless of current level of achievement; one’s potential is not limited by current ability.

**Benefits**

- a. Gets the students to believe in this principle
- b. Helps faculty collect experiences that develop their confidence in this truth

**Excerpts**

*“While reviewing the readings about identity, we were introduced to the CLS, and I recognized immediate value. Here was a roadmap that I could use to identify my skills that were weak and gave examples of applications and how to improve them, which would help me build my identity as a student that much faster.”*

**Principles**

7. Although everyone requires help with learning at times, the goal is to become a capable, self-sufficient, life-long learner.

**Benefits**

- a. Helps the students build greater independence in self-growth development
- b. Increases the metacognition needed for independent learning

**Excerpts**

*“I have learned that in order to facilitate self-growth, I must set goals and organize the steps that I must take in order to achieve those goals and assess my performances. By having a solid plan, I can manage my progress and use time more efficiently. Self-assessment is an ongoing process that I can take advantage of while setting and pursuing the goals I have set. The Personal Development Methodology is a way to take apart each goal by finding the problems that are making achievement difficult. This process assists in developing self-assessment tools that can be used throughout both academic and professional careers. By targeting specific learning skills, I can find ways to learn new things that will help me achieve my goals. “*

**Principles**

8. An empowered learner is one who uses learning processes and self-assessment to improve future performance.

**Benefits**

- a. It has students reflect on themselves as quality collegiate learners
- b. Ultimate outcome is to strengthen their ability to increase their own learning performance

**Excerpts**

*“Throughout this course I have learned that self-growth is not any one thing, but the culmination of many different elements; learning skills for processing information, learning skills for interacting with people, learning skills for controlling our emotions, assessments to improve performance and methodologies that give us structured steps to the processes directly related to our growth.”*

<b>Principles</b>	9. To develop expertise in a discipline, a learner must develop a specific knowledge base in that field, but also acquire generic, life-long learning skills that relate to all disciplines.
<b>Benefits</b>	a. Students focus on these generic CLS or key learner characteristics as their growth goals b. Faculty get to reflect on which of these transferable skills are developed the most
<b>Excerpts</b>	<i>“A strength I have gained is having the ability to be able to apply various learning skills or methodologies to scenarios outside of the class and into my professional life. For instance, the other day while at work I utilized the Preparation Methodology to help me get through an important project with my team. An additional strength is challenging myself to grow professionally and find value within each task or function at work and understanding why as a company we operate in certain ways or do certain things.”</i>
<b>Principles</b>	10. An educational institution can continually improve its effectiveness in producing stronger learning outcomes in several ways: (1) By aligning institutional, course, and program objectives; (2) By investing in faculty development, curricular innovation, and design of performance measures; (3) By embracing an assessment culture.
<b>Benefits</b>	a. Other stakeholders can examine the self-growth papers to provide their own independent interpretation of growth b. Designers can use insights gained to redesign and improve courses
<b>Excerpts</b>	<i>“Almost every student expects to complete OTP [on time progress] in less than 120 hours of effort in a term. Therefore, they procrastinate until they feel the pressure of the end of term. The Psychology of Learning and Success helps students to discover that they want to identify themselves as collegiate learners and, as a result, work toward building a time management plan which sets aside 20-25 hours per week for pursuit of their degree. Students then exit the course with the idea that they will invest 500 hours towards their degree per term, more than four times the initial planned effort.” (Apple et al., 2017)</i>

## Evolution of the Self-Growth Paper

Process educators have consistently advanced the integration of reflection and self-assessment into the learning process (Apple, Ellis and Hintze, 2016d). For example, Apple, Beyerlein and Schlesinger (1992) in *Learning Through Problem Solving* provide a summative reflective exercise to enhance and document growth and increase the metacognition of self-growth (see Appendix A). Early on, a set of reflection tools was compiled to help students increase reflection and self-assessment skills (Carroll, Beyerlein, Ford and Apple, 1997). The Learning Assessment Journal was designed to increase students’ reflection and self-assessment skills to assist in their growth (Apple, 2000). Contemporaneously, process educators expanded the Personal Development Methodology (self-mentoring process) over the next few years, where Krumsieg and Baehr (1999) integrated this idea and process into the *Foundations of Learning 2<sup>nd</sup> Edition*. From this use, the need for a formal summative exercise led to the design of a *Self-Growth Paper* framework (see Appendix B) at the July Advanced Teaching Institute held at University of Indianapolis (1999). This

tool was integrated into Learning to Learn (L2L) Camps and course implementations during that summer and fall. Miller formally integrated the tool into his Information Technology Literacy Course as a final project (Krumsieg and Miller, 2001). By 2009, the format of the tool was updated and included in *Foundations of Learning*, Edition 4 as a formal chapter (Redfield and Hurley-Lawrence, 2009).

## Design of the Self-Growth Paper

Students produce the self-growth paper as a summative reflection during the last 10 percent of a course. It averages three to five pages and may be assigned in class or as an overnight exercise. The students analyze their **before** and **after** statuses around an extensive learning and growth experience using a structured template. The template instructs and encourages students to reflect on multiple dimensions of growth contrasting their current state with their mental picture of where they started in the course. They are asked to document their top growth areas by describing the performance areas, the magnitude of growth achieved in each area, giving evidence to support their claims, analyze how the growth occurred, and finally, at end of this reflection,

focus on the metacognition of how they will extend this idea and practice of self-growth in the future.

### Self-Growth Paper Case Studies

The idea for this paper was generated at the 2018 PE Conference Workshop on self-growth papers. The first step in this research was to inventory different situations that used self-growth papers or the data from self-growth papers. The case studies selected for this researcher were chosen for their impact and how they can help people expand their use of self-growth papers. Apple, Ellis and Hintze (2015) delineate many of these contexts in their article *Learning to Learn Camps: Their History and Development*. The selection process was based on the following criteria: diversity in type of situation, colleges involved, purpose, when implemented, Process Education focus area, and number of individuals involved. The other reason they were selected was the impact on the practice and scholarship of the Process Education philosophy. The following ten case studies, listed in Table 2, provide concrete examples and thoughts on how the self-growth papers have been instrumental in assessment, research and development. Thus, the implementation methods and key users of the self-growth paper are also delineated in Table 2.

For assessment purposes of the self-growth paper there are three key users: students, facilitators and program administrators. The way the self-growth paper was set up with its specific focus varied from context to context to provide different impact on the student themselves. The facilitator controls this focus in the setup by the directions provided, criteria used for evaluation, and the specific dynamics of the timing of the writing exercise. There is a great variation of how the facilitators approach reviewing and analyzing self-growth papers. The self-growth papers are strong enough to accommodate this wide range of needs, interests, and desires of the various facilitators. Program administrators and institutional researchers have many varied interests and needs of their own. These self-growth papers provide many ways to support these two critical roles within institutions.

For academic researchers the self-growth papers are a goldmine of data that can be used to generate so many different explorations and inquiries. At times, the data itself can be used as evidence while at other times create interest in figuring out why something happened. The evaluators can use this growth data and inferences about growth to better design performance measures and corroborating current measures of growth.

For development projects and redesign efforts, it is beneficial to see where the existing curriculum produces strong transformational learning and where gaps in learning out-

comes exist. Even with curriculum that has been in place for over ten years, using the last two years of self-growth papers provides exceptional redesign guidance. In making significant change in a course (e.g. turning the L2L Camp into a recovery course), the self-growth papers produced from the new course provide quick feedback on which learning outcomes have been realized and which remain unfulfilled.

### Analyzing and Interpreting Self-Growth Papers

A first reading of the self-growth papers, as a reflection process, before assessing or evaluating them reduces personal bias when analyzing them. The instructor should read them first without an analytical framework in mind in order to discover growth areas that were not intended before analyzing the growth areas that were intended as learning outcomes. Insights and surprises should also be during the reading. The self-growth paper should be reread as necessary and conclude with synthesizing the results before formal analysis occurs. A set of prompts/questions should be utilized to analyze the self-growth papers, including changes in the framework during the second pass through the self-growth papers for analysis. For each of the 10 selected case studies, the context of the self-growth paper is established and the impact on students, facilitators, researchers and/or designers is described.

#### Case Study #1

Development Project: Foundations of Learning, Edition 4 (2009)

**Context:** Self-Growth papers have been a staple in L2L Camps since 1999 and account for 10 percent of the total points needed to accomplish the desired goal of star performer (Apple, Ellis and Hintze, 2015). During course set up, the students are made aware of the opportunities and requirements of writing their 4-page self-growth paper in 45 minutes during the morning of the last day. This challenge is just one of many that overwhelm the students because at the beginning of the process they believe **I can't do that**. By the end of the 5 days they write at least 1,500 words up to 2,500 words in the 45 minutes with powerful analysis and lots of discoveries and meaning.

**Students:** From 2000 to 2009, students' performance in writing self-growth papers improved while the time to write them was reduced to 50 minutes. The improved self-growth papers were accomplished by analyzing self-growth papers to determine how to make changes in the growth process and the writing of the actual papers. Criteria were written to clarify and make explicit the qualities desired in the paper, including

**Table 2** Selected Case Studies

<p><b>1. Designing Foundations of Learning Edition 4 (FOL)</b> <span style="float: right;">Date Range: <b>2000–2009</b></span></p>	
<p>Context: <b>Summer L2L Camps facilitated by Pacific Crest facilitators</b></p>	
<p>Numbers</p> <p><b>15 camps and approximately 500 to 800 total students</b></p>	<p>Key Users of the Self-Growth Paper</p> <p><b>Students:</b> Summative reflection</p> <p><b>Facilitators:</b> Assessment of effectiveness</p> <p><b>Designers:</b> Redesign FOL to enhance more growth</p>
<p>Implementation</p> <p><b>During the last evening unsupervised</b></p>	
<p><b>2. Development of Learning to Learn – Becoming a Self-Grower</b> <span style="float: right;">Date Range: <b>2009–2013</b></span></p>	
<p>Context: <b>Repackaging L2L Camp into a semester course</b></p>	
<p>Numbers</p> <p><b>15 camps and 3 recovery camps and 750 students</b></p>	<p>Key Users of the Self-Growth Paper</p> <p><b>Students:</b> Summative reflection</p> <p><b>Facilitators:</b> Assessment of effectiveness</p> <p><b>Designers:</b> Created a new design document for L2L – Becoming a Self-Grower</p>
<p>Implementation</p> <p><b>Focused on having students describe how growth occurred</b></p>	
<p><b>3. Risk Factors Scholarship</b> <span style="float: right;">Date Range: <b>2010–2014</b></span></p>	
<p>Context: <b>Context – L2L Camps – especially GVSU Honor Students and Stony Brook Engineering</b></p>	
<p>Numbers</p> <p><b>2 recovery courses, 2 Scholars Institutes, 2 L2L Camps; 350 students</b></p>	<p>Key Users of the Self-Growth Paper</p> <p><b>Students:</b> Clarifying their past, current and future risk factors</p> <p><b>Facilitators:</b> Where to put the focus of mentoring to mitigate risk factors</p> <p><b>Researchers:</b> What causes students to fail to clarify the interactions of numerous issues and impediments</p>
<p>Implementation</p> <p><b>Asked students where they started, which led to self-identifying risk factors</b></p>	
<p><b>4. Key Learner Characteristics for Academic Success Scholarship</b> <span style="float: right;">Date Range: <b>2010–2016</b></span></p>	
<p>Context: <b>L2L Camps and recovery courses</b></p>	
<p>Numbers</p> <p><b>4 recovery courses, 2 scholars institutes, 6 L2L Camps; 550 students</b></p>	<p>Key Users of the Self-Growth Paper</p> <p><b>Students:</b> Have them determine where they have become better learners</p> <p><b>Facilitators:</b> Where students are being successful, and which other areas need to be strengthened</p> <p><b>Researchers:</b> Which characteristics are important to academic success</p> <p><b>Evaluators:</b> How we begin to measure growth in these characteristics</p>
<p>Implementation</p> <p><b>Directed students to focus on growth areas related to learning and academics</b></p>	

## 5. Culture's Impact on Student Mindset Scholarship

Date Range: 2011–2018

Context: Campus Projects- Hinds Nursing/Allied Health, GVSU, Madison College

Numbers

13 events across these 3 colleges; 500 students

Implementation

Self-Growth papers open students to share their feelings and mindsets

Key Users of the Self-Growth Paper

**Facilitators:** See how mindsets and practices shifts effect student mindsets

**Researchers:** Look for patterns of how change in practice mitigated risk factors by changing student mindsets

## 6. Scholarship of L2L Camps

Date Range: 1995–2015

Context: L2L Camps

Numbers

50 events; 2,500 students

Implementation

Various but consistently used since 1999 on either the last evening or Friday morning

Key Users of the Self-Growth Paper

**Facilitators:** Keep improving the transformation of students' learning performance

**Researchers:** Analyzing the how of the transformation occurs

**Designers:** Continue to replace the least effective activities with new or different activities

## 7. Learning Performance Scholarship

Date Range: 2013–2015

Context: L2L Camps

Numbers

5 events; 250 students

Implementation

The criteria – analysis, strengthened students' explanation of what produced the growth

Key Users of the Self-Growth Paper

**Facilitators:** Focus on these components when reading self-growth papers, looks for connections and missing connections

**Researchers:** Look at synergy of components to the whole learning processes

**Evaluators:** Start to build scales and rubrics for measuring impact illustrated in papers

## 8. Self-Growth Scholarship

Date Range: 2010–2015

Context: Context L2L Camps and recovery courses

Numbers

3 recovery courses, 2 scholars institutes, 4 L2L Camps; 450 students

Implementation

Kept increasing the metacognition of self-growth capacity development, especially the last paragraph

Key Users of the Self-Growth Paper

**Students:** Build their future self-growth capacity

**Facilitators:** Determine where to keeping shifting focus

**Researchers:** Study the relationship between components and areas of growth

## 9. L2L Facilitation Scholarship

Date Range: 2015–2018

Context: Recovery courses

Numbers

10 recovery courses; 600 students

Implementation

Added criteria on how growth occurred produced student descriptions of the mechanisms instructors used to help produce this growth

Key Users of the Self-Growth Paper

**Facilitators:** Self-improvement in practices

**Program Administrators/Institutional Researchers:** Measuring faculty impact on student cohorts

**Researchers:** How impactful specific practices contribute to growth

**Evaluators:** Measurement of L2L practice and learner development validation

## 10. Student Success in STEM Scholarship

Date Range: 2012–2019

Context: L2L Math Camps

Numbers

7 L2L math Camps; 175 students

Implementation

Asked students to see their own transformation as a STEM collegiate learner

Key Users of the Self-Growth Paper

**Designers:** Keep redesigning the experience to produce greater L2L math impact

**Program Administrators/Institutional Researchers:** documenting impact on student success in STEM

**Researchers:** What are risk factors/key characteristics of STEM learners - Learning to Learn Engineering (Utschig, et. al., 2018)

**Evaluators:** Validating the scales for mathematical learner

sharing the scoresheet (rubric) that were used to evaluate the paper. We standardized the student allocation of time on task by using it as the vehicle for the writing contest on Friday morning. Students experienced an exercise on self-growth Thursday to build greater metacognition. A more detailed template for writing the self-growth paper was provided to organize thinking around their self-growth papers. As the quality of the self-growth papers increased, the impact of this reflective exercise became personally more valuable for the students' themselves.

**Facilitators:** During the same time, the facilitators' performances with L2L camps were 1) improved by the analysis of the self-growth papers and 2) the measurement of the facilitators' effectiveness was partially determined by the strength of the self-growth papers and the magnitude of learner transformation the papers represented. A facilitator uses the self-growth papers as a guide for doing assessments of the camp's coaches (mentors) and to do a self-assessment of their performance in leading the overall camp experience. These self-assessments led to improved facilitation plans and core changes in how the L2L Camps were facilitated and coached, leading to stronger growth implementation.

**Designers:** The Foundations of Learning, 3<sup>rd</sup> Edition was used in fifteen L2L Camps from 2000 to 2009. The students' self-growth papers from these L2L Camps informed many aspects of the 4<sup>th</sup> Edition (Redfield and Hurley Lawrence, 2009). Leaders recognized that college students must perform learning at a significantly higher level than high school students. Facilitators need to emphasize the difference between self-assessment and self-evaluation. They need to refocus writing as writing to think. They need to emphasize reading for learning. Finally, the self-growth paper needed to be elevated in importance with a formal chapter in the book (Apple, Duncan and Ellis, 2016).

### Case Study #2

Development Project: *Learning to Learn – Becoming a Self-Grower* (2013)

**Context:** Based upon the success of the Hinds CC Nursing department's May 2009 L2L Recovery Camp, Hinds Community College President requested that the L2L Camp be transformed into a one-credit course textbook for all entering students. The process of redesigning this experience into a semester long course heavily mined self-growth papers from: Hinds CC Nursing



Recovery Camp, several NSF sponsored STEM UP L2L Math Camps, Grand Valley State University's Honors Scholars Institutes and Academic Success Institutes, and Stony Brook's Smart Grid L2L Institute.

**Students:** The self-growth papers became the vehicle for transitioning from the course's intense developmental work on self-growth to helping the students become life-long self-growers. The last paragraph became more critical in their process of writing the self-growth paper, as we continued to solidify how we guided students to build metacognition of growth process and how they could continue to produce self-growth after the course.

**Facilitators:** The facilitators met collectively at the end of each event to do a summative assessment to prepare and plan for the next year's implementation. Individually, faculty/staff read and analyzed these self-growth papers to determine what worked effectively and why, what the major changes should be made and how they could be made, and what were the lessons learned. Discussions among these people produce the new implementation plans for the next year.

**Designers:** The outcomes of the new design of this course were generated through reflective analysis of the self-growth papers from these multiple events. The special characteristics of the new book include having students examine their failures, how to move on from the past, a stronger focus on setting and measuring self-growth goals, direction on connecting performance and productivity, formalizing the reading for learning, adding more mega-cognition, helping to generalize and use methodologies, leveraging failures, adding a mentoring process, and exploring how developing one's values drives intrinsic motivation (Apple, Morgan and Hintze, 2013). Just about every one of these new experiences came from ideas documented in the self-growth papers. All these new changes enriched the learning experiences students now have in the L2L Camps, recovery courses, and 1<sup>st</sup> year courses.

selves and their learning which are formally described as academic risk factors (Horton, 2015). In Appendix C, the original analyses of these student issues were documented by the key stakeholders of the Scholars Institute in preparation for their next year's planning and revision.

**Students:** The redesign of the specification of the initial paragraph of the self-growth papers requested more detail from students of which risk factors impeded their learning and success and why. This new requirement was accomplished by challenging students to get more specific, honest, transparent and synergistic as they revealed and clarified these risk factors to themselves and the readers. This clarification helped to motivate them even more to be focused on key growth areas that would mitigate these risk factors now and in the future.

**Facilitators:** The self-growth papers were mined to identify common issues students had in their learning performance behaviors that the camp needed to address for the next year event. These observations and conclusions from the analyses of self-growth papers were validated from the daily student council minutes, journaling of the faculty daily assessment sessions, and from shared impressions faculty obtained from mentoring students' daily learning issues. These changes impacted the next year's facilitation plan of when and how facilitation and mentoring were integrated in mitigating these risk factors.

**Researchers:** Once the authors discovered that the honor students had many of these same risk factors that had been seeing in **at-risk** students, they knew that these risk factors needed to be observed, documented, and researched in the literature to see how pervasive these risk factors really are and what are the implications for student success (Horton, 2015). The research is ongoing as new contexts are explored such as the recovery project of online learners at WGU (Apple, 2017).

### Case Study #3

Research Project: Identifying At-Risk Factors that Affect College Students (2015)

**Context:** Qualitatively, for years, facilitators kept experiencing how students struggled before and during the L2L camps. It was when the first L2L Camp with honor students was delivered that understanding became more crystalized. The self-growth papers from the Scholars Institute at Grand Valley State University in 2010 led students to identify issues about them-

### Case Study #4

Research Project: Key Learner Characteristics for Academic Success (2016)

**Context:** The analysis of the self-growth papers of the first Scholars institute at Grand Valley State University in 2010 (see Appendix C) identified characteristics students mentioned as their greatest growth areas that, with supporting evidence, impacted their learning and success. Over the next four years this became a repeated process to collect a super set of these

characteristics. This set of observations initiated the inquiry through a meta-analysis into which of these learner characteristics impact academic success.

**Facilitators:** Facilitators now consistently pursue this line of inquiry in analyzing the self-growth papers looking for evidence of transformational learning that could aid in increasing student success. The observation and documentation of growth in new learner characteristics initiated more deliberate focus on the development of these characteristics (for example, the development of writing to think is now a new key characteristic fully that is strongly reported by students in their self-growth papers). On the other hand, facilitators also identify which targeted key characteristics are not noted in self-growth papers. This led to improving the design and strategy for more effectively impact in these characteristics.

**Researchers:** The inquiry into which of these characteristics impact student academic success became more important as student retention became more of a focus at these participating colleges. The initial analysis recorded learner characteristics mentioned by each student that they documented in their self-growth paper. These analyses expanded with each additional L2L Camp and recovery course. Apple, Duncan and Ellis inventoried 67 Learner Characteristics from the analyses as potential candidates for increasing academic performance (2016). The 67 characteristics were reduced to 50 key learner characteristics that impact academic success with extensive supporting evidence from other research efforts on student success (Farrington, 2012).

**Evaluators:** The *Professional Guide to Self-Growth* (Apple, Ellis and Leasure, 2018) used 52 exemplar self-growth papers from 6 sections of the online recovery courses taught at WGU in 2017 to illustrate specific areas of learner transformation. The Psychology of Learning and Success course produces transformational learning in 52 Learner Characteristics as illustrated in these self-growth papers. For evaluation of impact, the book adds developmental scales for each characteristic to measure the amount of transformation and with this set of measures there can be new designs, facilitation plans and research that will advance L2L and Self-Growth.

ing these sessions were around mindsets, practices and PE Principles. The cultural battle in moving from the traditional to the transformational culture was the basis of these conversations and assessments that were generated.

**Facilitators:** These faculty conversations became one of the critical times where individual faculty members made personal transformations in mindset and associated beliefs. This shared learning helped faculty members discover what practices truly work to transform learners in facilitation, assessment and mentoring. At the end of the process, the faculty validated these new mindsets, beliefs, and practices by reading self-growth papers, especially their team's papers to see the impact of this changed mindset had on student mindset and their growth in key learner characteristics (Apple, Jain, Beyerlein and Ellis, 2018).

**Researchers:** The analysis of self-growth papers from the first Scholars institute at Grand Valley State University in 2010 (Appendix C) helped to identify key shifts in the culture that was produced during the event. This modeled key characteristics that we wanted to produce in the cultural environment for the 2011 Scholar's Institute. In reflecting on the 2010 event, we realized that our collective mindsets and practices could change student mindsets. This meant that in our training of faculty members we would become more deliberate in shifting faculty member mindsets and their associated practices during the Student Success Institute (Apple, Beyerlein and Holmes, 2010). This faculty mindset shift appeared to begin to mitigate student risk factors. The research team advanced their cultural analysis by using the 14 aspects of the Transformation of Education (ToE) (Hintze-Yates, Beyerlein, Apple, and Holmes, 2011). With this framework, we saw how traditional faculty mindset and practices contributed to reinforcing current student mindset which causes critical risk factors (Horton, 2015). As faculty shift their mindset and practices towards a transformational culture, the students' mindset changed which increased their success. By adding new discoveries from analyzing additional self-growth papers seen through different cultural frameworks, Apple, Jain, Beyerlein, and Ellis (2018) developed the IJPE article - *Impact of Higher Education Culture on Student Mindset and Success*.

### Case Study #5

Research Project: Impact of HE Culture on Student Mindset and Success (2018)

**Context:** From early on, we used faculty assessment sessions after each day of a L2L Camp to analyze what went on during that day. Most of the discussion dur-

### Case Study #6

Assessment and Research Projects: Learning to Learn Camps: Their History and Development (2015)

**Context:** During the analysis of the STEM UP self-growth

papers in the fall of 2014, one of the authors challenged another author with an inquiry question – *What is the difference between Process Education and Learning to Learn?* The research opportunity for this line of inquiry occurred when we replaced the *Foundations of Learning Edition 4* with the new book *Learning to Learn – Becoming a Self-Grower* (Apple, Morgan and Hintze, 2013) in the L2L Camps.

**Facilitators:** With this stronger focus on L2L, the team of facilitators analyzed the new impact this curriculum had on the change in learner development and how much additional growth was reflected in their self-growth papers. Ongoing changes were made in the implementation and the facilitator’s manual based upon the discoveries made from the self-growth papers.

**Researchers:** This analysis was extended to the entire twenty-year development period of the L2L Camps (1995 – 2014) to study the role and relationship of Process Education with Learning to Learn. Many years of analysis of self-growth papers were synthesized to see why and how the camps improved each year and the results were documented in Apple, Ellis and Hintze (2016c).

**Designers:** The design of the L2L Camp was compared with the course design used to construct *Learning to Learn - Becoming a Self-Grower* to see how both could be strengthened (Apple, Morgan and Hintze, 2013). After each iteration of either the L2L Camp or a L2L Course, we used the assessment of one implementation mode to improve the performance and impact on learner development in the other implementation mode.

### Case Study #7

Research Project: Learning How to Learn – Improving the Performance of Learning (2015)

**Context:** The practices, activities, and the resulting self-growth papers provided evidence of effectiveness of these L2L Camps but did not provide a framework for understanding L2L. We modified the inquiry question of Case Study #6 to “*What are the components of L2L, in other words, which aspects of learning when viewed as a performance could be isolated and developed?*”

**Facilitators:** As the research evolve around learning as a performance, the more the Learning to Learn Camps focused on learning as a performance. The analysis of the self-growth papers was aligned to the 13 components of learning performance to determine which components were the strongest in learners and which components needed additional development for

future L2L Camps.

**Researchers:** The Theory of Performance (Elger, 2007) and a learning performance framework developed by Farrington’s team (2012) and modified by Apple, Duncan and Ellis (2016) created the lenses that were used to design a new structure for analyzing and understanding learning as a performance. With this new framework, the implementation of L2L became more systematic as described in *Learning How to Learn: Improving Performance of Learning* (Apple and Ellis, 2015).

### Case Study #8

Research Project: What is Self-Growth? (2015)

**Context:** As the curriculum from Apple, Morgan and Hintze’s (2013) *Learning to Learn – Becoming a Self-Grower* was implemented, the reviewing of new sets of self-growth papers generated another inquiry question, “*What are the components that significantly impact the capacity for self-growth?*” In writing the self-growth paper, students were asked to provide reasons and causes for their growth and then to synthesize new strategies to produce additional future self-growth.

**Students:** The students became more reflective and metacognitive about self-growth as we provided them with this new structure and additional tools for building their capacity for self-growth. The self-growth paper had a preliminary activity on creating concept maps for self-growth that informed their writing. With the greater metacognitive thinking, students last paragraph continued to drive stronger control of future implementation of self-growth process.

**Facilitators:** The redesign of the L2L Camp as a semester long course identified new student growth areas and led to more explicit strategies for facilitators to increase their own self-growth in the context of teaching this course.

**Researchers:** Some of the new components of self-growth capacity that were clearly identified or reinforced from these self-growth papers included a stronger use of reflection, finding and solidifying passion, clarifying life vision, using an improved planning process and skills, and incorporating performance measures in their self-growth efforts. Additionally, new lines of inquiry on self-growth are focusing on the Classification of Learning Skills and on how Jain, Apple and Ellis’ (2015) 10 components of self-growth can themselves be strengthened which will enhance self-growth development in any performance area.

### Case Study #9

Research Project: 100 Best Practices for Teaching Learning to Learn and Self-Growth (2018)

**Context:** Since the advance of the Academic Recovery Course, new L2L curriculum, and the greater emphasis on student success, there is a stronger need for improved facilitators of L2L. The Academy of Process Educators has expanded its programming in Professional Development to help faculty to become stronger facilitators, so they can effectively model the L2L experience. Thus, it has become more critical to investigate the L2L experience and what makes it work and why.

**Facilitators:** In the analysis of the self-growth papers, students identify practices that they experienced during the course that helped them and contributed to their growth. They also described the new learning practices that they embraced for their current and future success. Thus, during the next implementation, their focus is to continue to advance their use of these effective practices.

**Program Administrators/Institutional Researchers:** In developing a L2L program at a college it is important to be able to link outcomes of a L2L experience to the performance of the L2L Facilitator. The self-growth papers can be scored and measured to ascertain the level of learner transformation and the contribution of the facilitator impact from the student identified practices that they documented in their self-growth papers.

**Researchers:** The core team from the Academy of Process Educators collected, analyzed, refined, justified, and prioritized the top 100 best practices for implementing L2L (Sweeney, Ulbrich and Apple, 2018). This list has become part of the Training the Trainer model and is used during the L2L Institute, L2L Camps, and the Academic Recovery Courses. This research was expanded to explain the impact and implications that these new practices had on educational culture and how this culture impacted student mindsets and their success (Apple, Jain, Beyerlein and Ellis, 2018).

**Evaluators:** The data out of the self-growth papers can be used to measure and document a facilitator's performance (new measure is under development) and as a peer coaching tool to provide assessment feedback to facilitators of which practices are being used when for which purposes.

### Case Study #10

Evaluation of a Grant Project: L2L Math STEM UP Program

**Context:** An NSF funded grant at the Utica campus of Hinds CC produced a one-week L2L math camp that was held for 5 years and when refunded, it expanded into a two-week L2L math camp. Each summer these camps are held as part of the STEM UP program. Like other camps, students produce self-growth papers. The self-growth paper analysis shows that the L2L Math Camp transforms learners into potentially successful STEM students who shift their mindset to embrace failure as a learning opportunity in math. These previously unchallenged HS students now experience the high expectations required for STEM learning, learned to use failures with extensive support and new L2L teaching and learning practices to turn these failures into successes.

**Researchers:** The analysis comprised a two-person research team, one internal and one external. To calibrate the process, each person independently analyzed one self-growth paper and then assessed the other's analysis. The improved process was used for the rest of the self-growth papers; 26 of the 31 students enrolled in the camp completed a paper. The central analysis was to identify which learner characteristics, general or a math focus, contributed to student success in transferring to 4-year STEM programs within two years. The preponderant risk factors mentioned by the learners were: *Unchallenged*, *Lack of Prerequisite Knowledge*, *Negative Self-Judgement*, *Procrastination*, and *Insecure Presenter*. The most common characteristics that mitigated these behaviors were *Persistence*, *Self-Assesses*, *Productive Struggle*, *Manages Frustration*, and *Leverages Failures*. The L2L process increased two critical learner characteristics that are essential to ameliorate these risk factors: *persisting* and *self-assessing*.

**Designers:** The plan for subsequent camps will include a greater focus on the math learning characteristics included in the Profile of a Quality Collegiate Math Learner. The activities are sequenced to produce greater mathematical learner development with one additional upfront new activity on the profile a mathematical learner.

**Program Administrators/Institutional Researchers:** Researchers, analyzing learner transformation, have linked a set of L2L teaching and learning practices that impacted student mathematical learning performance and a change in their mindsets. The program can help share personal breakthroughs by mentors with addi-

tional professional development that enhances their understanding of these practices and incorporates this metacognition into a facilitator's manual. The institutional researcher documents the continuous quality improvement that this program is portraying.

**Evaluators:** According to the students, the significant teaching practices that produce these behaviors include *Collaborative Learning, Mentoring, Intensive Reading and Writing, Critical Thinking, and Assessment*. The predominant faculty-identified risk factors are *underestimating the challenge* in the STEM camp and *lacking in prerequisite knowledge* expected from a high school graduate. Quantitative analysis of the pre and post diagnostics shows that all, but the two lowest scoring students at least doubled their knowledge, and more than half of the students tripled their knowledge.

### Insights on Implementing the Self-Growth Paper

The way in which the self-growth paper usage has changed over the years has led to stronger self-growth papers being produced as illustrated in the *Professional's Guide to Self-Growth* (Apple, Ellis and Leasure, 2018). In the beginning, the self-growth paper was an add-on exercise at the end of the process to determine the impact of the learning/growth experience had on the learner (Apple, Ellis and Hintze, 2015). The first major addition to the L2L Camp experience was the redesign of the *Learning Assessment Journal* Edition 4 (Apple, 2000) that strengthens self-growth through structuring numerous reflections and

self-assessments. Next was the addition of the *Life Vision Portfolio* (Mettauer, 2002) which helps students create more meaning within their life. We redesigned the setup process to challenge their fixed mindset by letting them know that learning performance could be doubled, and they could become a star performer on the self-growth rubric (Redfield and Hurley Lawrence, 2009). By 2010, we had students focus on planning and adjusting during the week by analyzing the syllabus and figuring out what they needed to do to reach Star Performance status. Over the past five years, self-growth papers were used in producing scholarship in many dimensions of self-growth: risk factors (Horton, 2015), learning performance (Apple and Ellis, 2015), Learning Process (Watts, 2018), self-growth (Jain, Apple and Ellis, 2015), quality collegiate learner characteristics (Apple, Duncan and Ellis, 2016), facilitating L2L (Sweeney, Apple and Ulbrich, 2018), cultural analysis (Apple, Beyerlein, Jain and Ellis, 2018). This research has informed the guidelines presented in Table 3 for implementing the self-growth process and the self-growth paper.

### Insights on Uses of the Self-Growth Paper

The analyses of the 10 case studies led to clarifying six fundamental usages for the self-growth papers. The stakeholders that would have a strong interest in their use would be students themselves, facilitators of L2L experiences, researchers advancing scholarship in Process Education, program administrators/institutional researchers documenting quality learning outcomes, designers working to improve the course effectiveness, and evaluators working

**Table 3** Tips for Implementing Self-Growth and the Self-Growth Paper

Tips	Descriptions of the Tips	Contributions to Self-Growth
Course Setup	Provide a positive future image of what students can become with concrete examples	Once students believe they can grow, they work harder on their growth
Performance Analysis	Provide the Profile of a Quality Collegiate Learner and have students analyze their performance as a collegiate learner	This personal gap analysis motivates students to become better versions of themselves
Set Self-Growth Goals	Have students produce 3 self-growth goals for the course based on <i>their</i> needs and desires	This becomes the personal themes and focus for each learner
Assessment/Reflection Journal	Identify 15 to 25 specific reflections and self-assessments aligned with course content	Contributes to self-growth capacity for continued use after the course
Use of Performance Criteria	Sets expectations for performances in the course and required for self-assessment	Students use these criteria to better plan, prepare, perform and assess their performance
Integrating Life Vision	Pick important components of a life vision aligned with course content	Strengthens their vision of future self and clarifies who they want to become
Targeting Performance Areas	In the L2L experience, some examples are reading for learning, writing to think, preparing for performance, and elevating critical thinking	By strengthening these components of learning, students are strengthening their learning performance

*continued on the following page*

**Table 3** Tips for Implementing Self-Growth and the Self-Growth Paper (*continued*)

Tips	Descriptions of the Tips	Contributions to Self-Growth
Session on Self-Growth	Before the students write the paper, prepare them meta-cognitively for this experience by developing a collective concept map on self-growth	Students spend the next 24 to 72 hours subconsciously analyzing their experience before sitting down to write their paper
Writing the Paper	We give students 50 minutes in a computer lab to write 1,500 to 2,500 words (4 pages) with the structured described in Appendix B	Students metacognition about who they are, where they are headed, what has been in their way, what happen to them, and how they can continue this process
Assess the Self-Growth Paper	Besides an evaluation of the self-growth paper, provide feedback to improve self-growth by assessing those who want assessment and growth	Transitions the learner from an assisted process to a self-directed process

to improve measures of growth. In Table 4, the purpose of the self-growth paper, its benefits and which case studies reflected its use in this manner are delineated. The use of these self-growth papers are further elaborated in detail for each stakeholder's purpose.

#### Use 1: By Students for a Summative Reflection

The self-growth paper is valuable when placed in the last week of class, the last day of an intense bridge program, a weeklong L2L Experience, an intensified orientation or an on-boarding process. Students will most likely miss a major portion of their transformation if not asked to step back and focus on the growth they experienced. As they do this assignment, the students make explicit connections between past behaviors, newly developed behaviors, use of new processes and skills, and the change in their mindsets and attitudes about what the future holds for them. By analyzing their experience to determine how this change occurs, the students strengthen their own metacognition of self-growth developmental process (Reed and Koliba, 2003).

Of the five competencies, discussed by Apple and Leasure (2018) for the Psychology of Learning and Success at WGU, the self-growth paper played important and varying roles in all five competencies. Students used the self-growth paper as an integrative force in the Success Plan competency using evidence from the Learning Assessment Journal competency. Students also discovered that their writings for their Life Vision competency played a critical role in discovering who they are and how they want to facilitate future self-growth. The other two competencies, the Learning Journal (responses to the critical thinking questions) and the Scorecard (which includes team activities), became experiences students often cited in the self-growth papers both for producing their behavioral changes and as well as reasons for growth.

#### Use 2: By Facilitators as a Summative Assessment to Measure Course Effectiveness

Students' summative reflections also serve as an assessment tool that can be used by faculty members or lead program facilitators to measure the collective impact on the transformation of all the learners. The growth areas students report can be compared to efforts of faculty and students on each area's impact. The self-growth papers provide one source to determine how much of the planned learning outcomes were realized by the students. Comparing the actual impact to the planned impact (learning outcomes) determines how much of the course intent produced the observed amount of growth. Also, areas of learning outcomes that the learners valued but were not part of the course intent can be incorporated into the future intent (redesign). For example, in the WGU online re-entry course, many students referred to self-honesty (described by students as "brutal self-analysis" or "disclosure with honesty") becoming a valuable skill leading to new life visions, increased valuing of self-assessment, and new tangible goals (Apple and Leasure, 2018). The time taken by facilitators for reading and doing a quick analysis of these self-growth papers immediately after a course can lead to new course ideas, different implementation strategies, and ways to mentor students' growth.

#### Use 3: By Designers to Improve Course Design or Redesign

Western Governors University (WGU) and Pacific Crest developed a course titled Psychology of Learning and Success. In the pilot phase of the project, the course was improved by iterating it 6 times by relying on the data from the self-growth papers. Six separate cohorts of students took the course during the pilot phase. After each cohort, the self-growth papers were analyzed to determine where the course was working

and where it could be improved (Apple, 2017b). In this course's iterations, students used the Profile of a Quality Collegiate Learner to set self-growth goals, do milestone checks on their progress and were required to document growth achieved with intended goals and report other areas of unintended growth.

This WGU online course is an illustration of where the self-growth paper analyses can be used in several ways to measure the impact of the course on students. The areas that students most frequently cited were highlighted and strengthened while activities and experiences in the course not cited were modified or removed. Through the six iterations of the course, 30% of the content was removed, the students' average time expended in

the course dropped from 100 hours to 70 hours while the impact of the course was almost doubled. This is illustrated in the WGU Report (Apple, 2017c), where before and after quotes were chosen from the last cohort and most of the evidence used for pages 18 through 86 came from the last two cohorts. All these changes were also used to change the face to face Recovery Course held in 2018 at the University of Indianapolis and are integrated into the design changes for *Learning to Learn: Becoming a Self-Grower* Edition 2.

For any course, a faculty member can require students to choose three to five growth goals aligned with the course's learning/growth outcomes and then have students write self-growth papers to see the impact that

**Table 4** Uses of the Self-Growth Paper

<b>Stakeholder User</b>	<b>Purpose</b> • <b>Top Benefits</b>	<b>Cases Studies</b>
Student	Summative Reflection Tool <ul style="list-style-type: none"> <li>• Learns about self-growth process</li> <li>• Increases self-efficacy</li> <li>• Motivates forward growth movement</li> </ul>	1, 2, 3, 4, 8
Facilitator	Summative Assessment Tool <ul style="list-style-type: none"> <li>• Helps determine level of impact on learner transformation</li> <li>• Motivates the facilitator with evidence that a major impact occurred</li> <li>• Link learning experiences to level of growth identified (cause/effect)</li> <li>• Identifies changes to be made for the next implementation</li> </ul>	1, 2, 3, 4, 5, 6, 7, 8, 9
Curriculum Designer	To help determine where changes can be impactful <ul style="list-style-type: none"> <li>• Documents what is working and why</li> <li>• Documents where there is low learner productivity and changes should be made</li> <li>• Helps determine which outcomes need to be strengthened and how</li> </ul>	1, 2, 6, 10
Program Administrators / Institutional Researchers	Provide supporting evidence of program and course learning outcomes for self, institution and accreditors <ul style="list-style-type: none"> <li>• Documents student growth in soft skill areas</li> <li>• Shows how these outcomes were produced</li> <li>• Shows assessment practices used to produces results</li> </ul>	9, 10
Researcher	To collect qualitative data on student growth and develop inquiry questions <ul style="list-style-type: none"> <li>• Shows possible patterns between activities/experiences and growth realized</li> <li>• Helps to develop new lines of inquiry about transformational learning and Process Education</li> <li>• Helps produce new discoveries and insights about Process Education</li> </ul>	3, 4, 5, 6, 7, 8, 9, 10
Evaluator	To help identify consistency between self-growth papers and measurements <ul style="list-style-type: none"> <li>• In design of measures, helps to identify dimensions in a performance area</li> <li>• Helps identify new areas of outcomes to start measuring</li> <li>• Helps determine if measures of pre/post are consistent with the qualitative data</li> </ul>	4, 7, 9, 10

the course has on transforming the students in these areas. Recently the Profile of a Quality Collegiate Learner (PQCL) has been introduced at the beginning of the course as a framework for students to use in choosing their growth goals and in writing their self-growth papers such as WGU online recovery course. Although students are prompted to determine which areas of the PQCL they had the greatest growth, they often identify additional areas outside these 50 characteristics which becomes part of our success characteristics research.

#### Use 4: By Program Directors and Institutional Researchers to Document Learning Outcomes

In *The Professional's Guide to Self-Growth*, Apple, Ellis, and Leasure (2018) obtained permission from the WGU students to use their self-growth papers not only to demonstrate the magnitude of growth a student could produce from Psychology of Learning and Success course but also to measure the degree to which these "soft skills" were increased as it relates to course, program, and institutional learning outcomes. The narratives, quotes, and documented evidence that students cited are the evidence that growth in critical thinking, problem solving, teamwork, communication, meta-cognition, self-development, and reflective practice, occurred.

#### Use 5: By Researchers to Collect Qualitative Data and Enhance Inquiry

The breakthrough uses of the self-growth papers to produce various lines of inquiry happened after the first L2L Camp especially designed for Honor Students at Grand Valley State University in the summer of 2010. The planning team for the subsequent 2011 Scholars' Institute assessed the first Scholar's Institute using the self-growth papers. A main line of inquiry involved the surprise that Honor Students had more **issues around learning and success** (Horton, 2015) than any of the involved stakeholders had forecasted. The culture produced during the Scholars' Institute was **more challenging** (Apple, Jain, Beyerlein and Ellis, 2018) than students previously experienced and faculty believed was constructive. In their self-growth papers, students consistently cited the level of challenge as a major contributor to their improvement in performance as collegiate learners. The students started to highlight their growth in areas they thought were **important as a collegiate learner** (Apple, Duncan and Ellis, 2016). The resulting lines of inquiry became the basis of Case Study 3 (Risk Factors), Case Study 4 (Key Learner Characteristics for Academic Success) and Case Study 5 (Cultural Analysis). Qualitative analysis was used to identify 65 potential key characteristics for the academic success (Apple,

Duncan, and Ellis, 2016) and key issues that students articulated that limited their learning performance (Horton, 2015). The faculty practices that contributed the most to learning performance improvement helped determine which key L2L facilitation techniques were included in the Top 100 Best Practices for Teaching Learning to Learn (Sweeney, Apple and Ulbrich, 2018).

#### Use 6: By Evaluators to Improve Measurement in Evaluation

WGU charged Pacific Crest with doing Risk analysis research with the question – Does every student re-entering need to take this course? To answer this question, it was important to know the degree of risks the students had when entering this course. In the WGU report, Apple (2017) illustrates the magnitude of the risk factors identified. The report also presents the discoveries and lessons learned from the overall project including some background knowledge of how to mitigate these risk factors. Early in the course the students took a risk analysis survey where they revealed and reported their own risk factors and we used the self-growth papers to validate the original documented risks. We saw a shift in how they reported their risk factors at the end of the course in ranking and intensity which impacted their top three risk factors going forward. For example, at the beginning of the course, financial hardship was frequently perceived as a top three risk factor; but then, by the end of the course, it was never reported as a risk factor. While most risk factors identified early in the course continue to be recognized as an issue in their self-growth papers, it was no longer a barrier because they took ownership and had a plan for addressing it.

### Concluding Thoughts

These ten case studies demonstrate the variety and power of the six different uses of the self-growth paper. The self-growth paper has evolved to be a key process educators' tool for practice and research to: 1) memorialize learner accomplishments, 2) assess learners, courses or programs to innovate and improve student learning or 3) document, analyze, research and evaluate learning outcomes.

Session attendees at the 2018 Process Education Conference showed that the versatility of the self-growth paper does not end with the uses illustrated by these ten case studies. Selected follow-up ideas include:

- Formalize an easy-to-start introduction to classroom research using self-growth papers
- Reflect and research what supports a switch to *growth mindset* or other significant key characteristics



- Research evidence of longitudinal impact by students generalizing the use of key characteristics, learning tools and learning skills beyond the original context (course)
- Develop valid and reliable measurements of growth to optimize learning-to-learn
- Discern the greatest contributions to learner growth capacity
- Explore longitudinal self-growth papers as an extension of the process
- Investigate whether and how mentoring, age, and prior experience affect learning to learn and self-growth capacity.

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## **APPENDIX A**

### **Summative Reflection Exercise in a Learning to Learn Course**

Source: Apple, Beyerlein, and Schlesinger, 1992, p. 78

#### **Reflections**

1. Describe the most important concept you learned in this chapter.
2. Identify a learning skill you used effectively in this chapter.
3. Identify a problem solving skill that you used effectively in this chapter.
4. Describe something you learned from another person in your group.
5. Write an original critical thinking question for a lesson in this chapter.
6. What personal growth occurred from this lesson? Identify an activity you will pursue to support this development.
7. What should you do to become a better team member?
8. What changes would you like to make for future lessons?

## **APPENDIX B**

### **First Formal Articulation of Structured Self-Reflection – Self-Growth Paper**

A self-growth paper is an analysis and synthesis of repeated self-assessments across a variety of activities focused on specific areas chosen to improve in. At the beginning of the process, careful thought is given to what specific areas would be the most useful to focus on and an assessment system is designed for each person. When a student is not very sure of what they are doing, the mentor can assist in helping the design by giving the broad parameters of an assessment system. During the process, new areas may be uncovered and replace initial thoughts. There should be at least 25 separate capturing of assessment data during the process with very specific evidence with context for your current performance. Especially important is repeated measurement of specific area of performance so that growth can be measured.

#### **Initial Design**

The recommendation for a course is to focus on 15 specific learning skills in the course and let the student choose five of these skills to focus on during the course. The choice should be based upon the least effective skills, because they have the most opportunity for growth. These skills should be measured at least six times during the term – an initial measurement within the first two weeks and then spaced out fairly uniformly throughout the term. During the last two weeks, a final measurement allows for closure and the basis to measure the overall development that has occurred.

#### **Ongoing Analysis**

It is important that action plans be made from one assessment to the next. Most importantly, follow through on the previous action plan must be done in order to see growth. The personal development methodology should be introduced so that individuals can see what it really takes to produce growth. The ownership here must really be shifted from the mentor to the mentee. (A draft of a mentoring methodology was completed to help clarify the process and role of the mentor, which also helps the student understand their role better.)

#### **Assessment of the Individual Assessment**

The quality of the final report will be based upon the strength of the ongoing assessments and their analysis. The best way in which to make sure that these assessments improve is to have a schedule for assessing these assessments. It is important to provide quality criteria for assessments and have the mentor assess these assessments three times during the process to improve their assessment quality. Also it is important that these assessments are stressed as very valuable to the overall process, thus it is important that their Learning Assessment Journal be part of the evaluation system. Peer assessments can be used, but the student must be able to choose who they get to peer assess and the documents that they have peer assessed. This is for the confidentiality issue of disclosure of specific aspects that they really don't want anyone to see.

## APPENDIX C

### Analysis of the Scholars' Institute at Grand Valley State University Honors College

#### Specifications of the Self-Growth Paper

A self-growth paper outline is fairly structured:

1. Introduction – the reason for the specific skills chosen, the perspective the mentee going into the process
2. Assessment design
3. Skill 1- Initial level of performance & final level of performance
4. Skill 2- At least 4 intermediate measurements
5. Skill 3- At least a discussion of the typical effort to improve (action plans)
6. Skill 4- Justification of what made the breakthrough for personal growth
7. Skill 5- 5 specifics in each section illustrating cause and effect
8. Final summary – Discussion about the ability to self-assess, use the personal development methodology, relate these skills with each other, and how you feel about the growth in these skills and the ability to improve other areas in the future.

#### Evaluation of the Self-Growth Paper

The self-growth paper criteria should center on these types of criteria:

- Level of cited primary documentation from the Learning Assessment Journal
- Completeness
- Level of thought
- Ability to assess performance
- Diligence in self-assessment
- Level of effort throughout the process
- Commitment to self-growth
- Quality of writing – only for the self-growth paper (not the Learning Assessment Journal)

Analyzed and documented February 2011 – Prep for 2011 event

Honor Students at GVSU are [should be – outcomes of 2011 event]:

- |                                 |   |
|---------------------------------|---|
| 1. Scholars - advanced learners | 7. Problem Solvers  |
| 2. Researchers                  | 8. Communicators  |
| 3. Leaders                      | 9. Information Processors - ? [still in doubt as a key focus] |
| 4. Assessors                    | 10. Professionals   |
| 5. Self-Growers                 |   |
| 6. Writers                      |   |

Scholar's Institute provides the broad foundation in each of these performance areas as well as preparing you for the upcoming academic challenge by increasing teamwork skills, self-confidence, self-assessing, thinking skills, self-awareness, persisting, risk-taking, self-directing, prioritizing, and time management.

The experience will get you ready to excel in the Honors College by having you understand your learning processes and where they can be improved, develop supporting learning skills, strengthen your meta-cognition, create a Life Vision, have you take responsibility and ownership of your own learning and success, help you to clarify your values, build relationships with other students and faculty, learn a broad set of methodologies and tools so you can become a strong contributing member of Honors College community.

Take statements from the self-growth paper to illustrate [the above growth areas which was the purpose of the self-growth paper analysis]

Activities should include:

1. Theory of Performance
2. Meta-cognition - Documenting your processes: How do you read, write, learn,
3. Assessment vs. Evaluation (self-assess vs. self-evaluate)
4. Build a Learning Community
5. Becoming a self-grower
6. Analyzing the learning process
7. Time management
8. Role of Inquiry in Research
9. Issue Analysis
10. Literature search
11. Research Proposal
12. Developing financial plan

Work products:

1. Team research proposal
2. Team presentation
3. Poster Board
4. Assessment Journal
5. Learning Journal
6. Self-Growth Paper
7. Life Vision Portfolio
8. Writing - Idea for Proposal (Discipline perspective.
9. Team Problem Solving Contest
10. Math Contest

**Table C1** First Analysis of Success Factors Self-Disclosed in the Self-Growth Papers

	Teamwork	Confidence	Self-assess	Thinking	Self-awareness	Persisting	Risk-taking	Math	Writing	Ownership	Relating	Prioritizing	Time Management	Problem Solving	Observing	Being Nonjudgemental	Leadership	Speaking	Self-starting	Coping	Relaxing	Being Open	Learning	Researching	Self-Challenging	Reading	Adapting to Change
Jordan										1												1					
Justin	1	1	1				1			1		1							1	1	1						1
Anna	1	1			1														1		1						
Jacob	1						1				1		1														
Thomas					1				1	1		1															
Elizabeth	1									1		1	1						1								
Holly			1	1			1		1			1			1												1
Cody	1		1							1									1				1				
Courtney			1							1																	
Michelle			1				1				1	1									1						
Ellen	1		1				1				1								1						1	1	
Cameron			1	1	1								1														1
Luke					1																						
Patrick	1	1	1	1	1					1		1							1								
Pieter			1		1		1			1			1														
Kadie							1			1	1	1									1						
Rachel	1						1					1								1	1						
Katelyn		1	1				1			1			1												1		
Calvin												1	1						1								
Kristin	1				1								1								1						
Robert	1		1							1														1			
Matt			1						1	1					1												
Christian	1		1	1								1	1														
Brittany C.	1																					1	1				
Beth B.	1	1										1							1								
Veronica	1	1	1									1							1	1							
Mike		1													1				1								
Brittany			1										1														
Joseph	1		1						1			1	1														
Blake	1		1				1				1								1	1							
Taylor			1																								
Johnathan	1	1	1	1	1	1					1																
Danielle			1	1	1		1	1	1	1																	
Logan	1		1		1		1				1																
Dale							1					1	1	1	1												
Katie Y.			1												1	1	1										

Learning liability, issue, or concern	Characteristics of Scholar's Institute	Results
1. Procrastination	Don't give extra time	Self-starting/Proactive
2. Being taken care of	Performance based environment	Self-ownership/responsibility
3. Non-developed discipline	Shift ownership (Student council)	Productivity
4. Pleasing teachers	Give choices based upon own values	Self-Growth
5. Not being challenged	Challenge greater than anyone can meet	Self-challenge
6. Not having experienced significant failure	Require the use of all learning skills	Risk-taker
7. Too much memorization vs. critical thinking	Activities with critical thinking	Learner and problem solver
8. Minimal meta-cognition	Assessment journal/methodologies	Self-awareness
9. Lacking confidence to speak out in public	Spokesperson assignment and speech contest	Communicator
10. Unsure of who they are	Life vision portfolio	Directed professional
11. Not trusting and respecting others in a team	Use of Communities and teamwork	Team catalyst
12. Self-evaluator vs. self-assessor	Assessing assessments	Assessor