The Growth Mindset: Motivating Students to Embrace Challenge, Assume Ownership of Learning, and Realize Their Intellectual Potential
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Overview of Topic and Recent Research
Recent research indicates a powerful effect of mindset on students' motivation, their willingness to embrace challenge, and their overall responsibility for learning and academic performance. According to the work of Stanford psychologist Dr. Carol Dweck (2006), when students adopt a *growth mindset* (namely, when they understand that intelligence can grow and improve with effort and good strategies), they are more likely to respond resiliently to challenges and show greater learning and achievement in the face of difficulty. Conversely, when students cling to a *fixed mindset* (namely, when they believe intelligence is finite and unchangeable), they are more likely to avoid challenges (which they view as a threat or indicator of their intellectual limitations), and in the face of difficulty, are less likely to seek help and more likely to disengage. As a result, individual growth and academic performance suffer.

Much research in the K-12 setting and initial findings in the context of higher education indicate that interventions can be staged to redirect students from a fixed to a growth mindset, and that acquisition of a growth mindset leads to profound changes in student engagement, motivation and academic performance. Consider the following findings:

- When seventh graders were provided with growth mindset training (in which they learn to think of their brains as "muscles that get stronger with exercise") in addition to study skills training, they showed a sharp increase in grades compared to students who only receive study skills training (and subsequently show the decline in math grades commonly exhibited in middle school; Blackwell et al., 2007; Yeager and Dweck, 2012).
- Grant and Dweck (2003) found that a growth mindset predicts higher final grades in an organic chemistry course, even when controlling for math SAT scores as an index of entering ability. The advantage of growth (vs. fixed) mindedness causes students to use deeper learning strategies and to better recover from an initial poor grade.
- Simply inserting a one-sentence message that emphasizes the malleability of intelligence (e.g. "Remember, the more you practice, the smarter you become.") measurably increases the number of problems attempted and the rate of progression (an indicator of motivation) to mathematical proficiency in an online mathematics course (Williams et al., 2013).
- At a state university, completion of a web-based growth mindset intervention staged the summer before freshman year increases the percentage of students earning 12+ credits during their first term (a strong predictor of on-time graduation) from 3-10%, depending on the population (Yeager et al., 2013).

A review of the data generated by a recent survey of the High Point University community indicates a strong interest in a Quality Enhancement Plan that provides students with opportunities that foster and/or enhance the following characteristics: a strong sense of academic motivation; a high level of engagement both within and outside of the classroom [an opportunity also highlighted by results from the National Survey of Student Engagement, reviewed in detail below]; a sense of personal responsibility for learning; and the recognition and achievement of high expectations. Based on the findings of Dweck and others (summarized above), the implementation of campus wide growth mindset strategies at High Point University has a strong likelihood of providing these opportunities for growth to our students, given the positive impact that they have on the effort that students put into learning, their resilience, and their willingness to take on challenges. In the process, adopting growth mindset approaches will not only support the university's mission ("to deliver educational experiences that enlighten, *challenge*, and prepare students to lead lives of significance in complex global communities") and address a key learning outcome of the President's Seminar (a course required of all High Point University students prior to graduation), but is also likely to enhance academic performance and ultimately retention.

Growth mindset interventions most effectively enhance academic performance when coupled with training in which students learn the habits of mind and study skills necessary for success in their discipline/profession (Blackwell et al., 2007; Yeager and Dweck, 2012). Thus, this proposal not only outlines potential campus wide activities for fostering growth mindedness, but also provides ideas for study skills training and implementation of pedagogies that enhance students' metacognition about their learning.

Institutional Data
The following statements are excerpts taken from the recent survey of the High Point University community conducted to identify potential QEP topics. These quotes cite desired traits and student outcomes that would be fostered by implementation of growth mindset strategies on our campus:

- *"Taking responsibility for learning. As we all know becoming a lifetime learner is one of the most important goals a student should set. Helping the students learn to take responsibility for their learning through guided steps that help a young student transition from being told what to do to learn to taking the initiative themselves for learning is essential for a students successful transition to adulthood."*
- *"I think universities across the country, High Point University among them, need to focus on cultivating self-reliance in students. Too many students rely on parents, tutors, or indulgent professors to solve their academic and life problems for them. High Point University should work on balancing its efforts to provide academic assistance to students with parallel efforts to foster and reward intellectual self-reliance."*

- *"Getting students excited about learning is the main obstacle we face in moving higher education forward and I'd like to see HPU at the forefront of a university-wide effort to address this."*
- *"Creating a culture of intellectual development. This includes intellectually challenging students, providing opportunity for faculty to develop scholarship which is shared on a regular basis with the HPU community, inviting thought provoking speakers and performers to campus…"*
- *"A particular emphasis should be placed on enthusiastic and passionate professors who inspire their students to be excited about learning and the subject that they teach. Furthermore, resources should be directed to continually train professors and expand their teaching abilities."*
- *"The most important area is student engagement in learning. Many students are still operating under the paradigm of "What do I need to do and what is the easiest way to do it".*

Recent results from the National Survey of Student Engagement (NSSE) survey conducted on the High Point University campus also highlight aspects of student engagement that are likely to be enhanced upon implementation of growth mindset strategies. High levels of engagement are important not only for the success of individual students (since they are correlated with better academic performance), but are also critical for the health of the institution as a whole (since they are correlated with high levels of student retention). Growth mindset strategies have a proven track record of enhancing student engagement, as those with a growth mindset seek out challenge for the sake of learning and improving, rather than shying away from challenge for fear that it will highlight intellectual limitations (a characteristic of a fixed mindset). Those areas of engagement identified by the NSSE as presenting opportunities for growth (in other words, those items in which High Point University students scored below the national average for engagement) include:

- "Prepared two or more drafts of a paper or assignment before handing it in"
- "Analyzed a new idea, experience or line of reasoning in depth by examining its parts"
- "Reviewed notes after class"
- "Took courses that challenged me to do my best work"
- "Spent significant amount of time studying and on academic works"

An important outcome to note regarding growth mindset classroom strategies is their impact on narrowing, or even closing, the achievement gap that is frequently observed between majority students and students of color on campuses across the nation. Growth mindset strategies benefit ALL students, but their positive impact on the engagement, academic performance and retention of students from underrepresented groups is particularly powerful, given their ability to minimize stereotype threat in the classroom (Aronson, Fried and Good, 2002). Considering that preliminary data indicate the existence of achievement gaps in some general education courses on the High Point

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University campus, it is anticipated that narrowing or even closing these achievement gaps will be another important outcome of campus wide adoption of growth mindset strategies.

Scope of Project and Likely Participants
A QEP that focuses on fostering growth mindedness will involve initiatives that permeate virtually every aspect of student life. Ideas for potential growth minded initiatives include:

- iteration of growth mindset themes at key times during advising (by Freshman Success Coaches, Academic Advising, faculty advisors).
- implementation of growth mindset strategies by Residence Life and Greek Life for fostering growth mindedness in students about their social interactions and development
- implementation of growth mindset interventions at key times during students' academic development (e.g., First Year Seminars; foundation courses in the major, undergraduate research experiences, service learning projects)
- campus / community speakers who address growth mindset themes, encourage risk taking, promote an entrepreneurial spirit
- extracurricular activities / events / community projects that challenge students to leave their comfort zone / demonstrate resiliency / experience growth
- professional development opportunities for faculty and staff to learn practical and effective approaches for fostering a growth mindset in the classroom
- professional development opportunities for faculty and staff to learn existing and/or develop novel approaches to contextualized study skills training and pedagogies that foster in students metacognition about learning
- service learning opportunities for faculty / staff / students to engage in projects that foster a growth mindset in K-12 schools in High Point community
- common reads centering on growth mindedness, embracing challenge, taking risks, fostering an entrepreneurial spirit
- training opportunities for coaches / athletic staff / athletes to learn about or enhance existing knowledge of growth mindset approaches and their impact on athletic performance

Resources Needed for Implementation
A necessary resource for successful implementation of a QEP centered on growth mindedness is a campus Center for Teaching and Learning. The center will be responsible for developing and coordinating professional development opportunities (speakers, workshops, brown bag lunch discussions) and for providing resources (e.g., books; sample growth minded syllabi; assessment tools) for faculty and staff to learn about growth minded classroom strategies, effective approaches to study skills training, methods for fostering students' metacognition about their learning, and assessment tools for measuring engagement, persistence, self-efficacy, etc.

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Additional resources will be needed for bringing speakers to campus to share their research and/or experiences related to growth mindedness and to challenge students to take healthy risks. Likewise, funding will be needed for faculty / staff to develop and lead growth minded extracurricular events and community activities, and to fund projects in which faculty develop and assess the impact of novel growth mindset teaching and learning approaches in the classroom.

Finally, implementation of strategies to foster a growth mindset in High Point University students will draw upon pre-existing campus resources, as the campus works to repeatedly present students with opportunities for challenge and growth – opportunities in which they are pushed outside of their comfort zone. Two ideal opportunities (in addition to rigorous coursework) include undergraduate research and service learning projects, which are already supported by existing infrastructure on the High Point University campus.

Potential Outcomes
Based on the significant, well-documented positive impact of an approach that couples growth minded pedagogy with study skills training, the following outcomes are likely should the High Point University campus adopt a QEP project in this area. [Note: next to each potential outcome is a proposed mechanism for assessment of that outcome.]

- a greater degree of growth mindedness in High Point University students, faculty and staff (measured with Dweck's instrument for assessing growth vs. fixed mindsets)
- increased student engagement (measured by the NSSE)
- increased "productive persistence" (measured with instrument of Bryk et al., 2013 and through engagement with key campus resources such as the Writing Center)
- enhanced academic performance (measured via G.P.A. comparisons before and after adoption of growth mindset strategies and study skills training in key courses)
- increased retention of students (measured via comparisons of retention rates before vs. after implementation of the a growth mindset QEP)
- narrowing / closing of achievement gaps (measured via G.P.A. comparisons between majority vs. underrepresented groups in key general education courses)

Conclusion
A campus wide QEP project that focuses on fostering growth mindedness will address key topics of interest identified by the QEP survey: namely, the desire to foster within HPU students a high level of engagement, a sense of ownership for their learning and mindsets that motivate them to seek opportunities that challenge them and help them reach their full intellectual potential. Through the activities outlined in this proposal, it is very likely that HPU will not only foster the development of these valuable traits in HPU students, but will also build upon a tradition of excellence in HPU classrooms, as faculty and staff continue to identify new ways to innovate and inspire.

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References

Aronson, J., Fried, C.B., & Good, C. (2002). Reducing the Effects of Stereotype Threat on African American College Students By Shaping Theories of Intelligence. *Journal of Experimental Social Psychology* 38:113-125.

Blackwell, L. A., Trzesniewski, K. H., & Dweck, C. S. (2007). Theories of intelligence and achievement across the junior high school transition: A longitudinal study and an intervention. *Child Development*, 78, 246–263.

Bryk, A.S., Yeager, D.S., Hausman, H., Muhich, J., Dolle, J.R., Grunow, A., LeMahieu, P., and Gomez, L. (2013). Improvement Research Carried Out Through Networked Communities: Accelerating Learning about Practices thatSupport More Productive Student Mindsets. A White Paper prepared for the White House meeting on *Excellence in Education: The Importance of Academic Mindsets.*

Dweck, C. S. (2006). *Mindset*. New York, NY: Random House.

Grant, H. & Dweck, C. S. (2003). Clarifying achievement goals and their impact. *Journal of Personality and Social Psychology*, 85, 541–553.

Williams, J. J., Paunesku, D., Haley, B., & Sohl-Dickstein, J. (2013). Measurably Increasing Motivation in MOOCs. In: *MOOCshop Workshop, International Conference on Artificial Intelligence in Education*, Memphis, TN.

Yeager, D.S., Dweck, C.S. (2012). Mindsets That Promote Resilience: When Students Believe That Personal Characteristics Can Be Developed. *Educational Psychologist* 47(4):302-314.

Yeager, D.S., Paunesku, D., Walton, G.M., and Dweck, C.S. (2013). How Can We Instill Productive Mindsets at Scale? A Review of the Evidence and an Initial R&D Agenda. A White Paper prepared for the White House meeting on *Excellence in Education: The Importance of Academic Mindsets.*