EFFECT OF A FIRST-YEAR EXPERIENCE (FYE) COURSE ON MOTIVATION / GRIT AND SELECTED STUDENT ATTITUDES

by

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ABSTRACT

This mixed methods study at a rural community college sought to measure the effect of a first-year experience (FYE) course on student motivation/ grit and selected student attitudes. Quantitative data was collected after one semester from 164 first-year students attending the college for the first time in fall or winter of 2011/12. Some students in the sample had taken a 3-credit FYE course and others hadn’t. Astin’s Input-Environment-Output (IEO) model provided the theoretical framework for the quantitative analyses. Focus groups were conducted to collect qualitative data. Pre-and post test levels of motivation/ grit were measured by the Smartermeasure ™, an assessment of learner readiness. Two sections of the test were used, “Individual Attributes” (IA) and a subset, “Locus of Control” (LC). The quantitative analyses included independent samples t-tests, Analysis of Variance (ANOVA), Chi-square, and multiple linear regression. Dweck’s theory of mindset and Duckworth’s grit theories were the primary motivational theories discussed. There was no significant effect of the FYE course on IA for any students in the sample. There was a statistically significant correlation with age and increase in IA for a very small number of adult students. There was a positive impact on LC for all students after one semester, regardless of FYE enrollment. Significant correlations existed for first semester GPA and increase in IA and one level of math placement and age and increase in LC. Qualitative analyses demonstrated many positive gains, including interdependence, use of college resources,
focus on career goals and social integration. Multiple interpretations are presented for the mixed results.
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To anyone who is considering pursuing an advanced degree, go for it. You will not regret it.
CHAPTER 1
The Importance of Increasing Student Success

Introduction
Increasing the number of graduates from all institutions of higher education has become an issue of national, state, and local importance. In particular, the new expectations for the community college role are highlighted in varied political arenas and by members of both parties. Examples include President Barrack Obama’s 2012 State of the Union address and the American Graduation Initiative rolled out in 2009, which, though unfunded, proposed an unprecedented level of Federal funding for community colleges. More recently, Michigan Governor Rick Snyder has strongly emphasized rebuilding Michigan’s economy by increasing educational options, especially in high-tech and Science, Technology, Engineering, and Math (STEM) fields. It is clear that community colleges have been called upon to play a vital role in adding millions more qualified workers to the economy.

National Importance
The Federal Government has highlighted the role it sees for community colleges in the economic recovery of the United States. President Obama’s 2012 State of the Union address (President Obama, 2012), presented a blueprint to return America to its founding values where everyone is given an opportunity to be successful, given hard work and effort. He told the nation that there are twice as many job openings in
emerging fields of science and technology than there are qualified workers to fill them. This shortage is emphasized in another report by the Georgetown University Center on Education and the Workforce, which forecast that the US workforce will be short three million qualified workers over the next eight years (“Foundation Launches”, 2012). With unemployment rates still hovering at 10%, that is a remarkable statistic. The President spoke about a “single mom” who had been laid off from her job as a mechanic but through retraining is now working at a high-tech gas turbine factory. That retraining occurred as a result of collaboration between Siemens Company and Central Piedmont Community College. The President continued, telling Congress:

I want every American looking for work to have the same opportunity as Jackie did. Join me in a national commitment to train 2 million Americans with skills that will lead directly to a job. (Applause). My administration has already lined up more companies that want to help. Model partnerships between businesses like Siemens and community colleges in places like Charlotte, and Orlando, and Louisville are up and running. Now you need to give more community colleges the resources they need to become community career centers-places that teach people skills that businesses are looking for right now, from data management to high-tech manufacturing (President Obama, 2012).

The President’s focus on community colleges is not new. In the summer of 2009, he spoke at Macomb Community College (MI) and unveiled his challenge to the nation, and specifically to community colleges, to graduate an additional five million students and regain the number one position of having the highest proportion of educated citizens in the world. President Obama said:
Now is the time to build a firmer, stronger foundation for growth that will not only withstand future economic storms, but one that helps us thrive and compete in a global economy. It’s time to reform our community colleges so that they provide Americans of all ages a chance to learn the skills and knowledge necessary to compete for the jobs of the future (The White House, 2009).

Even though the American Graduation Initiative was unfunded, many national organizations signed on to the challenge. The American Association of Community Colleges along with five partners pledged to meet this challenge and to increase student completion rates by 50% by 2020. The additional partners were: League for Innovation, Center for Community College Student Engagement, National Institute for Staff and Organizational Development, and Phi Theta Kappa (American Association of Community Colleges, 2011).

Underscoring this priority is the fact that the United States had lost its prestigious spot as the country with the highest proportion of college graduates and has dropped to number twelve, trailing countries such as Canada, Korea, Russia and Japan. In an increasingly global and information-based economy, producing more college graduates is important to the national economy, economic recovery and world status. The President challenges the nation to envision a stronger America, which “leads the world in educating its people” (President Obama, 2012).

Statewide Importance

In Michigan, where the national recession hit particularly hard due to the one-track focus on auto manufacturing, Republican Governor Snyder has demonstrated his
support of the role higher education will play in rebuilding Michigan’s economy. In his 2012 State of the State address, he announced that educational attainment rates had to increase. According to Snyder, “too many young people are (sic) leaving school without the education they need to succeed in the future” (McMillin, 2011).

He called for educational reforms, including a streamlined system between education providers and greater college access for high school students, “any time, any place, any way, any pace” (State of Michigan Executive Office, April 27, 2011). In May 2012, Governor Snyder signed into law Senate Bills 622 and 623, which expanded access to dual enrollment options to ninth and tenth graders (previous legislation was limited to eleventh and twelfth graders). The Governor’s support of community colleges and the programmatic areas that he expects to be developed are made clear through the performance-based funding model he introduced in February 2012. Incentives were to be provided for increased numbers of students graduating from Science, Technology, Engineering, and Math (STEM) programs and allied health related fields. While this specific proposal did not pass, it demonstrated the priorities of the current administration.

**Local Importance**

North Central Michigan College (North Central) serves an area in rural northern Michigan which, when viewing typical poverty indices, has both extremely wealthy and extremely impoverished residents. There are also many, who, for all practical purposes, live on the edge of poverty, working minimum wage service sector jobs with little stability. The tourism industry, for which this area is known, is notorious for hiring
temporary, seasonal workers at a minimal pay rate. Many residents piece together two
or three jobs during the year to make ends meet. Higher education, for many, may not
be a priority or feasible unless their current life circumstances change. Educational
attainment rates demonstrate the low value of higher education for the area’s residents
and economy. The Bachelor degree attainment rates range from a low of 12.8% in
Otsego county to a high of 28.4% in Emmet county. The state average of Bachelor
degree attainment is 24.5%, already three percentage points lower than the national
average. (United States Census Bureau, 2011). Average unemployment in the North
Central service area in December 2010, was 14.8%, higher than the Michigan average of
11.7%. The number of school-aged children eligible for free and reduced lunches can be
as many as 73% of a school district, whereas the total eligible in the state is 45%
(Michigan. Gov, 2011). In 2010, an ACT report demonstrated that 19% of Michigan high
school students were considered college-ready, which was 5% lower than the national
average. Locally, the percentage of college-ready students by school district ranged
from 0% to 33% (Tanner-White & Higgins, 2011). A similar report, coordinated by the
Center for Michigan was published in 2012 and reported that the statewide college-
readiness average for Michigan (using ACT benchmarks) had decreased to 17%.

\(^1\) (French, 2012).

In 1997, North Central was selected to be an Achieving the Dream (AtD) college
and began to focus its efforts on increasing student success to address these regional

\(^1\) “The college-readiness benchmarks are scores on the ACT subject-area tests that represent the
level of achievement required for students to have a 50% chance of obtaining a B or higher or
about a 75% chance of obtaining a C or higher in corresponding credit-bearing first-year college
courses” (http://www.act.org/education/benchmarks.html).
challenges. Baseline graduation rates as indicated on the institutional “balanced
scorecard,” was 12% of the AtD cohort of first-time in college students. A large number
of students were not successfully meeting their goals and were not returning to
complete them. Focus groups with students and faculty revealed that students lacked
skills and knowledge about how to be successful in college. Increasing retention and
graduation rates, in part by providing learning opportunities to acquire important
student skills, have become strategic priorities for the college.

**Funding Interests**

There has also been a new interest in and emphasis on community colleges by
philanthropists for the last several years. The Bill and Melinda Gates Foundation has
pledged $30 million to community colleges over the next five years to increase the
number of graduates (Completion by Design). In 2008, the Walmart Foundation
announced its pledge to the American Association of Community Colleges of $2.5
million to assist rural community colleges in a program called “Building Better
Communities through Regional Economic Development Partnerships” (Walmart, 2008).
That commitment to community colleges continued in 2012, by establishing another
$2.5 million grant to Achieving the Dream Leader Colleges to increase faculty and staff
engagement in success efforts. The spokesperson for the Walmart Foundation
commented:

> Community Colleges are a pathway for millions of Americans to gain a valuable
> education and access to career opportunities. Together with Achieving the
> Dream, we have set in motion a program that will help ensure more citizens are
gaining the valuable education and workforce skills needed to get ahead in the job market (Achieving the Dream, 2012).

AtD and its funding agents, such as the Lumina and Kresge Foundations, have put a focus on student success and completion, particularly for low-income students and students of color. AtD principles emphasize creating a culture of evidence where data informs all decisions, and developing and evaluating initiatives aimed at increasing student success. Institutions work to remove barriers for students, maintain high expectations, and offer a high level of support services. Approximately 200 colleges nation-wide participate in AtD and the foundations have contributed millions to the goal of increasing student success in community colleges. AtD is leading the largest non-governmental reform movement in the country (Achieving the Dream, 2012).

Why This Emphasis on Community Colleges?

Community colleges have a long history of serving the training and educational needs of their stakeholders and their communities. To appreciate the current national emphasis on the important role of community colleges, it is important to look back on the forces that created these complex institutions in the first place. In the early 20th century, community colleges grew out of a need to educate the country’s citizens, a need which was not being met by selective universities. Many more students were graduating from high school and universities did not have the capacity to serve them. Moreover, some university leaders wished to focus their efforts on upper-level coursework, leaving the first-and second year of a degree to these new institutions. Third, the GI bill, following World War II, led to an explosion of returning veterans who
enrolled in community colleges. With multiple missions of preparing students for
transfer, offering vocational programs to meet employment demands in the community,
and offering non-credit options for students interested in life-long learning, community
colleges were and remain complex organizations. Bragg and Townsend (2006) write
about former Chief Executive of the American Association of Community Colleges, Jesse
Bogue:

Jesse Bogue (1956) endorsed the transfer and vocational missions of what he
called the community junior college, and he added the third function of
continuing education to offer students the opportunity for part-time education.
His description of continuing education was particularly insightful because of
how well he anticipated the expanded role of community colleges in addressing
community and business needs, including envisioning their offering training for
persons seeking job advancement and opportunities to learn about new
technological developments undoubtedly stimulated by the industrial
developments of WWII (Bragg & Townsend, 2006, p. xx).

Their mission to remain open-access has led them to be a portal to higher education for
minority and low-income students. “More than half of persons of Hispanic origin and
African Americans who enroll in higher education attend community college” (Bragg &

The challenges.

In spite of and somewhat due to the several advantages cited above, graduation
and persistence rates at community colleges are lower than at any other type of
institution. According to a report prepared by the Center for Community College
Student Engagement (CCSSE) in 2010, “only 28% of first-time, full-time, associate
degree-seeking community college students graduate with a certificate or an associate degree within three years” (p. 3). That number increases to only 45% if viewed six years after the point of entry (CCSSE, 2010). If judged by these national graduation rates, the promise that “democracy’s colleges” would give everyone an equal chance at higher education would appear to have widely gone undelivered.

Many AtD colleges have been looking critically at their success data to determine where the leakage points (i.e. the points at which they are losing students) are. For many, they are found to be in the first year of student enrollment. Community college students typically carry one or many of the following risk factors, making them higher-risk for not being successful in college:

- The first in their family to attend college;
- From a low-income group;
- Minority;
- Not college ready (45-60% nationally place into developmental coursework);
- Commuter;
- Non-traditional age (over 24);
- Part-time employed;
- Transient (stopping in and out of various colleges) (Cuseo, 2011).

The rate of attrition for community college students in the first year is especially poor: about 25% will not return for the spring term, and 50% do not return for their second year (McClenny, 2004). According to McClenny (2011), “this picture illustrates the importance of understanding what is happening, and therefore, where
improvements can be made in the ways colleges design and manage the entering student experience” (p. 15). Because the students’ first year of attendance is so predictive of their future success in college, many institutions have put focused efforts on initiatives during this period. First-Year Experience (FYE) programming is seen as one way to combat high student attrition in the first year.

**Importance of First-Year Programming**

The freshman year appears to be the most critical year for community college students, when viewed by the historically poor retention rates of students into the second year. “ACT IDQ retention data suggest that the national retention rate for community colleges has been stagnant, hovering above 50% for more than 25 years” (Habley, 2011, p. 47). Gardner (1985) stated that “the freshman year is the foundation on which the rest of the college experience is based” (p. 117). Maisto and Tammi (1991) discuss the vulnerability of the student in the freshman year. It is a period of transition for students from their previous academic experience and expectations. Tinto (n.d.), the leading expert on researching student departure agreed, indicating that “at no time does such involvement matter more than in the first year of college when student learning is still so malleable” (p. 4). Several reports, including the previously mentioned ACT college-readiness standards, appear to indicate a lack of academic engagement for recent high school graduates. According to Hunter, McCalla-Wriggins and White (2007) in a NACADA (National Academic Advising) report, “only one third of entering college students report studying or doing homework six or more hours per week as seniors in high school. Despite the reduction in time devoted to schoolwork, high school grades
continue to soar” (p. 23). There appears to be a disconnect between student perception of preparedness and college expectation of student preparedness. As Brown reported, “when instructional faculty and academic advisors were asked if students understood what was required to be successful, less than 15% agreed this was the case” (as cited in Brown & McPhail, 2011, p. 68).

Brown, King, and Stanley (2011) strongly recommend the creation of intentional first-year experiences for students:

While the specific components will vary from one institution to the next, community colleges should seek to develop comprehensive first-year experiences that are intentionally organized to help students make a successful transition into higher education, achieve their individual goals, and move on to additional educational opportunities or a career. Programs and services that help students make the initial adjustment to campus include welcome centers, preterm orientation programs, and first-year seminars or college success courses (p. 168).

According to Upcraft, Gardner, Barefoot, and Associates (2005), first-year programming (curricular and co-curricular) aims to assist students in doing the following:

1. Develop intellectual and academic performance,
2. Establish and maintain interpersonal relationships,
3. Explore identity development,
4. Decide on a career,
5. Maintain health and wellness,
6. Consider faith and the spiritual dimensions of life,

7. Develop multicultural awareness, and


Colleges try to meet the above objectives in diverse ways. Some of the most common methods include orientation programs, workshops on developing success / study skills, FYE courses, career testing and services, mentoring programs, service learning, developmental education practices and policies, academic advising, learning communities and supplemental instruction. According to Barefoot, Arcario, and Guzman (2011), pre-term orientation and first-year seminars are the most common strategies for assisting students in transitioning to college.

With larger numbers of colleges implementing FYE courses, increased efforts in improving the first year experience by community colleges and universities alike, and significant investments of time and money by both the institutions and the students themselves, it is important to extend the current research of FYE courses. Kay McClenney (2011), Director of the Center for Community College Student Engagement (CCSSE), discusses the FYE course as a promising practice:

What we mean by “promising” is that we have emerging evidence from multiple institutions over multiple semesters that having these experiences like orientation or a first-year experience, or a student success course or supplemental instruction. Those experiences are associated with better outcomes for students (Hamilton, 2012).
This dissertation will explore the impact of an FYE course on selected student motivational skills. Student motivational skills, for purposes of this project, will be defined as attitude of persistence / “grit,” time management, willingness to seek help, procrastination, and mindset / locus of control.

**FYE course history and trends.**

In the 2009 survey conducted by the National Resource Center for the First Year Experience and Students in Transition, 890 institutions reported offering an FYE course, an increase of 69 institutions since the survey was last administered in 2006. In the last three years, 47 additional community colleges reported offering an FYE course. Only 19.5% of community college respondents indicated their FYE course was mandatory for first-year students, compared to 46.7% of responding universities. 43.4% offered it for one credit, 31.9% for three, and 9% for no credit. Approximately half of the respondents required training for instructors. (National Resource Center for First - Year Experience and Students in Transition, 2009). A long-established tradition at universities, where the original FYE course is reported to have been offered in 1882 at Lee College in Kentucky (Barefoot & Fiddler, 1996), it appears that it is also increasingly offered to community college students as a strategy to increase success. According to Schnell and Doetkott (2003), “the first year seminar at the University of South Carolina, led by John Gardner, provided the standard from which current seminars have evolved” (p. 378). In a review of the 28 community colleges in Michigan, as seen in Table 1 below, 100% were found to list an FYE / student success course in their catalogs, albeit with different course
titles, under varied departments and number of credit hours. Enrolling in the course at these Michigan community colleges is generally optional for most students.

*Table 1: Inventory of Student Success / FYE Courses at Michigan Community Colleges*

<table>
<thead>
<tr>
<th>Name of Community College</th>
<th>Course Number</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpena Community College</td>
<td>CSS 100</td>
<td>Becoming a Master Student</td>
</tr>
<tr>
<td>Bay College</td>
<td>FYE 101</td>
<td>College Success Strategies</td>
</tr>
<tr>
<td>Delta College</td>
<td>ABS 090</td>
<td>Successful Transitions</td>
</tr>
<tr>
<td>Glen Oaks Community College</td>
<td>BAM 101</td>
<td>College Skills and Portfolio Writing</td>
</tr>
<tr>
<td>Gogebic Community College</td>
<td>CAR 101</td>
<td>Adventures in Attitudes</td>
</tr>
<tr>
<td>Grand Rapids Community College</td>
<td>CLS 100</td>
<td>Student Success</td>
</tr>
<tr>
<td>Henry Ford Community College</td>
<td>COLL 101</td>
<td>College Success</td>
</tr>
<tr>
<td>Jackson Community College</td>
<td>FYS 110</td>
<td>First Year Seminar</td>
</tr>
<tr>
<td>Kalamazoo Valley Community College</td>
<td>TRS 105</td>
<td>College Success Strategies</td>
</tr>
<tr>
<td>Kellogg Community College</td>
<td>STSK 111</td>
<td>College Success</td>
</tr>
<tr>
<td>Kirtland Community College</td>
<td>CAR 09300</td>
<td>Study Skills</td>
</tr>
<tr>
<td>Lake Michigan College</td>
<td>CLS 100</td>
<td>Freshman Seminar</td>
</tr>
<tr>
<td>Lansing Community College</td>
<td>SDEV 101</td>
<td>First Year Experience</td>
</tr>
<tr>
<td>Macomb Community College</td>
<td>CSSK 1200</td>
<td>College Success Course</td>
</tr>
<tr>
<td>Mid Michigan Community College</td>
<td>MID 101</td>
<td>Strategies for Success / College</td>
</tr>
<tr>
<td>Monroe County Community College</td>
<td>COLL 145</td>
<td>College Skills</td>
</tr>
<tr>
<td>Montcalm Community College</td>
<td>GNST 100</td>
<td>College Success</td>
</tr>
<tr>
<td>Mott Community College</td>
<td>CASD 122</td>
<td>Survival Skills for College</td>
</tr>
<tr>
<td>Muskegon Community College</td>
<td>CSS 100</td>
<td>College Success Seminar</td>
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<tr>
<td>North Central Michigan College</td>
<td>SD 125</td>
<td>First Year Experience</td>
</tr>
<tr>
<td>Northwestern Michigan College</td>
<td>ENG 107</td>
<td>Academic Study Methods</td>
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<tr>
<td>Oakland Community College</td>
<td>ASC 1070</td>
<td>College Success Skills</td>
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<tr>
<td>Schoolcraft College</td>
<td>COLL 105</td>
<td>Learning Skills</td>
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<tr>
<td>Southwestern Michigan College</td>
<td>SPS 105</td>
<td>Achieving Academic and Personal Success</td>
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<tr>
<td>St. Clair County Community College</td>
<td>SD 140</td>
<td>College Success</td>
</tr>
<tr>
<td>Washtenaw Community College</td>
<td>ACS 111</td>
<td>College Success Seminar</td>
</tr>
<tr>
<td>Wayne County Community College District</td>
<td>CCO 100</td>
<td>Community College Orientation</td>
</tr>
<tr>
<td>West Short Community College</td>
<td>ENG 101</td>
<td>College Learning Strategies</td>
</tr>
</tbody>
</table>

The 2009 national survey also collected the most common FYE course objectives and topics among respondents. The five most common course objectives were (1)
develop academic skills (54.6%), (2) develop a connection with the institution (50.2%), (3) provide orientation to campus resources and services (47.6%), (4) self-exploration / personal development (28.5%) and (5) create a common first-year experience (23.3%). The five most important topics in the first-year seminar were reported as follows: (1) campus resources (42.4%), (2) study skills (39.8%), (3) academic planning / advising (35.7%), (4) critical thinking (34.8%), and (5) time management. (National Resource Center for the First – Year Experience and Students in Transition, 2009).

**Need for This Study**

Multiple previous studies have demonstrated a positive effect on student success by completing an FYE course, most commonly measured by grade point average, retention, and graduation (e.g. Cho, 2010, Derby & Smith, 2004, Jenkins & Wright, 2008). However, because of differing research designs, policies, and levels of policy enforcement at various colleges, a clear connection has not been made between student gains in specific learning outcomes and enrollment in a student success / FYE course. Students choosing to take the course may simply be more motivated or have different characteristics than others who do not. Pre-and post assessments built into the course itself are course-level assessments and cannot be generalized further than the course. In a comprehensive causational study of an independent variable, such as the effect of an FYE course; therefore, it is advised to include all of the multiple variables that are believed to have an effect on student outcomes (Astin, 1991). Those variables are student-driven and environment-driven. Additionally, an objective test of the gains in student skills can help to address the knowledge acquisition and change in positive
behavior students may experience after taking the FYE course. According to Achieving
the Dream data coach Bruce McComb,

From my perspective, we do not really know if FYE is having an impact or if self
selection is going on and those who take it were just more likely to be successful
in other courses and persist. So, the research is designed to see if FYE actually
impacts key affective skills (pre-post, FYE, and non-FYE matched groups). If it
does, then we have evidence that FYE is impacting students’ success skills, which
leads to course success and persistence. (Bruce McComb, email message to
author, December 22, 2011)

Terenzini and Reason (2005) argued that, “the low persistence / completion
rates and gaps reflect an unacceptable and unnecessary loss of individual, institutional,
and national talent and resources” (p. 1). AtD colleges, including North Central are
learning that there is no “silver bullet” answer to the complex issue of how to increase
student success. At the same time, AtD colleges are acknowledging that “pockets of
success” have to be turned into “widespread improvement” by bringing initiatives, such
as the FYE course to full scale (CCSSE). Because of its widespread acceptance, potential
for universal application, and opportunity to bring them to full scale, since many
colleges are already using them, FYE courses could be one of those significant strategies,
particularly if coupled with a wide-reaching FYE plan. The results of this study will help
to determine the impact on student motivational skills for an FYE course at one
community college and will add to the growing body of knowledge about the impact of
FYE courses in general.
This study will consider the following input / environment variables: sex, age, placement level (i.e. developmental or college-ready), enrollment status (part-time or full-time), academic program, motivation pre-test score (input variables). Environmental variable will be enrollment in an FYE course.

**Student Motivational Theories as Theoretical Underpinnings for the Study**

Some have argued that student motivation can be positively influenced by institutional efforts, such as intentional faculty and advisor contact, student engagement efforts, and peer influence. Since the first year in college is the most critical foundational year for student success, an intervention such as the FYE course is invaluable if it can be demonstrated that it is able to establish a critical faculty or advisor relationship and increase student motivation and student skills. In a longitudinal study of 17,000 college students at 49 institutions, Dr. Daniel Chambliss studied the connection between faculty influence and college student motivation. According to Dr. Chambliss (2012), “motivation is an outcome of college” (p. A28). In his 2012 study, he found that student motivation could be taught by college faculty and learned by students and in multiple student focus groups found that students could point to one “critical conversation” that sparked their academic interest. Chambliss (2012) also found in several focus groups that “there was an identifiable moment in which a faculty member created a spark in them; students became energized or excited by a topic, an idea, or a discipline” (p. A28). In regards to the possible impact of an FYE course on student motivation, Dr. Chambliss noted:
The conversations we mentioned happened throughout, but there's no doubt
that the first year -- even very early experiences -- matter tremendously, mainly
in helping set a tone for what the institution is about, what the "cool" people do,
what the standards are, and the like. This is one reason the intro teachers -- or
more accurately, teachers in the first courses a student encounters -- are so
important. The one caveat we offer about FYE courses is that the quality of the
teachers is vital. If you've got weak ones, the students get the vibe from that;
eager students get deflated, uneager students get confirmed that "this is a waste
of time," etc. Try to get them in front of great teachers early (Daniel Chambliss,

Similarly, Pajares (2000) noted on the impact of a significant individual:

Confidence is also built as a result of the messages received from others, as well
as by the vicarious experience of the effects produced by the actions of others.
As so many of us have personally experienced, the actions of significant
individuals--perhaps a teacher who came our way at just the right time--help instill self-beliefs that influence the course and direction our lives take (Pajares,
2000).

Several additional motivational researchers have developed theories which can be
applied to college student development and will briefly be discussed here.

**Bandura’s self-efficacy theory.**

Bandura’s (1997) self-efficacy theory contends that people with higher levels of
self-efficacy will persist through challenges at a higher rate than those with lower levels.
Self-efficacy is generally defined as the belief or confidence that one can successfully
accomplish a task. Bandura’s (1997) theory contends that there are four primary sources
of self-efficacy beliefs: (a) performance accomplishments (previous successful
experiences), (b) vicarious learning (learning from others), (c) social persuasion (others’ belief in one’s ability to accomplish the task), and (d) emotional arousal (interpretation of the stress related to a task) (DeWitz, Woolsey & Walsh, 2009).

People who have strong beliefs in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an affirmative orientation fosters interest and engrossing involvement in activities. They set themselves challenging goals and maintain strong commitment to them. They invest a high level of effort in what they do and heighten their effort in the face of failures or setbacks. They remain task-focused and think strategically in the face of difficulties. They attribute failure to insufficient effort, which supports a success orientation. They approach potential stressors or threats with the confidence that they can exercise some control over them” (Bandura, 1997, p. 39).

DeWitz, Woolsey, & Walsh (2009) agree with Bandura and assert that “self-efficacy and goal orientation (defined as the students’ reasons for approaching an academic task) have been linked to success in many areas, including college” (p. 19). The FYE course is designed to give students direction, a feeling of empowerment over their future, adopt a “creator” role (from a “victim” role), and build confidence in their abilities to succeed in college. One student’s end-of-semester reflection indicates the personal impact of this course:

I think you accomplished everything that you wanted to. You’re not going to fail any of your classes, you didn’t withdraw for any, your GPA will only increase, and, even better, you have a plan on how you can strike out on your own to begin YOUR life and not living with /for those around you. Honestly, I don’t think you would have made it where you are today if it weren’t for this class.
**Weiner’s attribution theory.**

Social-psychologist Bernard Weiner’s attribution theory helps to explain how people interpret events that happened to them. According to his theory, students explain their achievements (or failures) by attributing various reasons for those outcomes. Weiner (1972) explains that “attribution theorists investigate the perception of causality, or the judgment of why a particular incident occurred. The allocation of responsibility manifestly guides subsequent behavior” (p. 203). Weiner (2000) theorized that there were three causal properties of behavior: locus (i.e. internal or external control), stability (perceived stability of the behavior over time), and controllability (perceived control over the behavior). Weiner (1979) also explained that the “the causes perceived as most responsible for success and failure are ability, effort, task difficulty, and luck” (p. 4).

A student’s future actions could depend on which cause he/she attributed to the outcome of an event. Weiner found that students who have experienced success, typically attribute that to effort and ability, and failure to bad luck or task difficulty. Students who have experienced academic failure tend to attribute that outcome to bad luck and task difficulty. In terms of motivation, these attributions can lead to a self-fulfilling prophecy. According to Weiner (1972):

Persons high in achievement concerns subjectively can anticipate future success after a failure by planning to work harder. Therefore, they may continue to strive for a previously unattained goal. On the other hand, individuals low in achievement motivation ascribe failure to a lack of ability (…) hence, among
individuals low in achievement motivation, continued failure is anticipated following nonattainment of a goal, and goal striving ceases (p. 208)

**Duckworth’s grit theory.**

Penn State University psychologist Angela Duckworth contends that the difference between success and not reaching one’s goals is a factor, called “grit.” She has developed a grit scale that has been used in multiple settings, from Scripps National Spelling Bee contestants to West Point graduates, to help to predict if they will persist until the end of their challenge. The results of the grit scale have been more predictive than any other input variable, such as standardized test score, physical or IQ test. “Grit” as defined by Duckworth, Peterson, Matthews, and Kelly (2007) is:

Perseverance and passion for long-term goals. Grit entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress. The gritty individual approaches achievement as a marathon; his or her advantage is stamina. Whereas disappointment or boredom signals to others that it is time to change trajectory and cut losses, the gritty individual stays the course” (Duckworth et al. p. 1088).

“Grit” is seen as being important in establishing longer-term goals and explaining or predicting persistence of behavior in achieving those goals (Duckworth et al. 2007). In studying the relationship between grit and level of education, they found that:

Post-college graduates were higher in grit than most other groups. Similarly, participants with an Associate’s degree were significantly higher in grit than those with less education and, interestingly, also higher in grit than those with a Bachelor’s degree, although this difference failed to reach significance” (p. 1091).
Duckworth et al. (2007) also found that higher grit scores were associated with lower SAT scores in a study of GPA performance at a large university. “Given that college grades are only modestly correlated with adult success (Hoyt, 1966), we wonder whether follow-through or, as we prefer to call it, grit, may in fact matter more than IQ to eventual success in life (p. 1099). This finding is particularly relevant for community college research, such as this dissertation, as the student population, in general, has lower standardized test scores than compared to selective universities.

**Dweck’s mindset theory.**

Stanford psychologist Carol Dweck, in her book entitled *Mindset*, promotes the existence of two types of mindset: fixed and growth. A fixed mindset is one in which people believe their abilities and potential are “fixed,” and that regardless of hard work and effort, the outcome will be the same. Exerting hard work and effort, in fact, is seen as a sign of weakness and an affirmation that one is not “cut out” for the task at hand. Individuals with a fixed mindset try to prove themselves with every action, and stay in the “safe zone,” seeing everything as a potential test of their abilities. Since they do not want to fail, as that would be a demonstrable sign of weakness, they avoid challenging tasks with an unknown outcome. A growth mindset, on the other hand, is one in which people believe that the outcome can be modified in their favor, when they apply focused energy and hard work. It is a belief that one is in charge of one’s outcome, one is acting as a “creator.” Dweck (2011) explains the growth mindset:

There’s another mindset in which these traits are not simply a hand you’re dealt and have to live with, always trying to convince yourself and others that you
have a royal flush when you’re secretly worried it’s a pair of tens. In this mindset, the hand you’re dealt is just the starting point for development. This growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts (Dweck, 2011, p. 22).

Dweck and other researchers at Stanford University have developed a method of teaching children and adults how to acquire a “growth” mindset (from a “fixed” mindset). Dweck (2011) concludes her book with the following: “Did changing to a growth mindset solve all of my problems? No. But I know that I have a different life because of it—a richer one. And that I’m more alive, courageous, and open person because of it” (p. 574).

**Measuring grit and mindset.**

This dissertation will evaluate the pre-and post-test scores on the Smartermeasure™ assessment for new, degree-seeking students at the end of their first semester. The Smartermeasure™ is an online assessment of learner readiness for an online or technology-rich academic environment (Smartermeasure, 2012).

All new students at North Central are required to take this 124-question assessment prior to enrolling, and the results are used during an advising meeting to help identify students’ strengths and areas that need development. Post-test assessments were collected for this study by the researcher at the end of their first semester for the “Individual Attributes” section. Several specific questions on the “Individual Attributes” section aim to measure the type of students’ mindset. While Dweck’s was not the specific theoretical underpinning for the Smartermeasure™ questions, according to Dr. Atkins, President of Smartermeasure™: “The primary author
of that section of SmarterMeasure was Dr. Julia Hartman who through her dissertation research had identified several variables that are indicators of success in online course. One of those constructs was Locus of Control. The construct of Locus of Control is very similar to the fixed or growth model” (Mac Adkins, email message to author, May 22, 2012).

This dissertation will apply two of the above motivational theories, Dweck’s theory of mindset and Duckworth’s concept of grit. Those theories were chosen because of the fit between the goals of the college’s FYE course, the On Course (OC) curriculum selected, and the practical relevance of the theories. The author of the OC textbook currently being used, expressed interest in the studies of mindset by Dweck and indicated that her theoretical work would be more intentionally integrated into the next edition of the textbook. In communication between the researcher and the author, Downing indicated: “The next edition of OC (which will be available late this fall) includes expanded implementation of Dweck's mindset theory” (Skip Downing, email message to author, June 5, 2012). The following questions will be examined:

1. Does the students’ perception of their persistence / level of “grit” increase after taking the FYE course?
   - Does the students’ perception of their time management skill / level of “grit” measurably increase after taking the FYE course?
   - Does the students’ perception of their willingness to seek help / level of “grit” measurably increase after taking the FYE course?
Does the students’ attitude of procrastination / level of “grit” measurably decrease after taking the FYE course?

2. Does the students’ mindset / locus of control measurably change from fixed to growth after taking the FYE course?

3. Do the current curriculum and objectives of the course effectively address these student motivational skills?

**Summary**

In Chapter 1, the author has described the importance of the completion and student success agenda in higher education and in particular, the role that the nation has afforded to community colleges. Community colleges have suffered from historically low completion and graduation rates, and if they are to play an important role in the national economic recovery and talent development of its citizens, they must see improvements in the degree and certificate attainment rates. Community colleges have come into sharper focus for politicians of both parties as well as philanthropists, which have funded Achieving the Dream colleges, such as North Central Michigan College. These philanthropists share high hopes for the promise of “democracy’s colleges” to educate the nation’s citizens cost-effectively and quickly.

One widely used strategy to increase retention and graduation among colleges and universities of all types is the first-year experience, and in particular, the First-Year Experience course (FYE) which is the focus of this dissertation. The FYE course has a long history in universities and more recently in community colleges as a strategy to help students transition successfully to higher education. 100% of all Michigan community
colleges report having a student success / FYE course among their offerings. While the impact of the FYE course has been widely studied, especially to determine impact on retention, GPA, and graduation rates, there is such a wide range of implementations at the institutions, that the external validity is low. It leaves one to wonder whether student characteristics prior to taking the course, such as level of motivation, play a role in their performance in the FYE (and other) courses.

This dissertation aims to evaluate whether individuals who have taken an FYE course at one community college achieve measurable gains in important student motivational skills, applying Dweck’s mindset and Duckworth’s grit / perseverance theories. It will also evaluate the effectiveness of the current curriculum in teaching these motivational skills. These skills will be measured at the beginning of the semester and again at the end of the first semester of attendance, controlling for students’ input and environmental variables. The following students’ input variables will be controlled: sex, age, placement level (i.e. developmental or college-ready), enrollment status (part-time or full-time), academic program, and pre-test level of motivation. FYE enrollment will constitute the environmental variable that will be controlled. The author’s hypothesis is that students who have taken the FYE course will have larger gains in student motivational skills than those who have not taken the course.
CHAPTER 2
Literature Review

Introduction
The First year Experience (FYE) course may be the most widely researched and
scrutinized element of a college curriculum (Cuseo, Barefoot, 1996). Many institutions
have implemented First Year Experience (FYE) courses as a primary strategy to increase
student retention, academic performance, and ultimately, degree completion. As the
name implies, FYE courses have been targeted mostly at new students with some
colleges narrowing the focus even more on students who are considered particularly at-
risk, e.g. by placement into developmental courses (e.g. Hendel, 2001; Cho, 2010;
Zeidenberg, Jenkins, & Calcagno 2007; McElroy, 2006), placement on academic
probation (e.g. Kamphoff, 2012; Scrivener, Sommo & Collodo, 2009) or inclusion in a
minority group (e.g. Hotchkiss, Moore & Pitts, 2006; Derby & Smith, 2004; Grunder &
Hellmich, 2006; Strumpf & Hunt, 1993; Stovall, Starke & Harth, 2001; Stovall, 2000).
With over 90% of institutions reportedly offering an FYE course (2009 National Survey
on First-Year Seminars), there is a wide variety of curricula, formats, and policies.
However, the common institutional goal has been to help students transition to the
academic and social environment of higher education and to help them acquire new
skills which will facilitate their success in that new environment.
During the past 25 years, FYE courses have grown in popularity and variety in postsecondary institutions in the US. A few meta-analyses, including Pascarella and Terenzini’s (2005) work in How College Affects Students, consistently point to the positive impact of FYE courses. Discussing the impact of First-year seminars, the authors indicate, “with rare exceptions they produce uniformly consistent evidence of positive and statistically significant advantages to students who take the courses” (p. 401). Additionally, Padgett and Keup (2011), in summarizing the results of the 2009 National Survey of First-Year Seminars commented that, “first-year seminars have an incredible capacity to facilitate the transition and success of entering students” (p. 6). Over half of the survey respondents reported using quantitative methods for assessing their FYE efforts. The most consistent finding was increased persistence and retention. It might be helpful to categorize the various types, as summarized by Barefoot (as cited in Keup & Barefoot, 2005):

1. Extended orientation seminars: This is the most popular type of FYE course among all colleges with the primary purpose of acclimating students to unique institutional expectations, resources, and culture. According to Hunter and Linder (2005), “these seminars focus on student survival and success techniques and may be taught by faculty and campus administrators, as well as by student affairs professionals” (p. 279).

2. Academic seminars: Academic seminars offer a focused view of a particular topic, many times a topic that is of interest to a faculty member and showcases his/her area of expertise. The main purpose is to connect
students with a faculty member in an academically engaging and personalized environment. All sections of FYE seminars at a college can be aimed at this unified content or the content can be unique to each section. An example of an academic seminar at the University of Michigan is titled: “Looking at traditional China through its most famous novel: The story of the stone (emphasis in text); the poetry of everyday life; and colonialism and its aftermath” (Hunter & Linder, 2005).

3. Professional seminars: These seminars are intended to provide insight into a professional career, e.g. nursing, and may be offered to a subset of the student body who is considering or already enrolled in a particular program.

4. Discipline-linked seminars: Similar to professional seminars, the range of topics focuses more towards introducing students to a field of interest, rather than a profession, in classes such as “Introduction to history of art” (Hunter & Linder, 2005, p. 280).

5. Basic study skills seminars: The content of these seminars is generally geared to students who are considered to not be college-ready and typically includes note-taking, test-taking, and critical reading (Hunter & Linder, 2005).

The types of FYE courses cannot always be kept separate and many colleges report offering “hybrid” versions that utilize more than one of the above classifications. Most research about FYE courses focuses on their effects on academic outcomes, such as fall-to-winter persistence or fall-to-fall retention, academic
performance as measured by grade point average, completion rate (number of courses completed vs. attempted) and graduation (Upcraft & Gardner, 2005). Very few studies address how seminars affect students’ attitudes and behaviors. Most previous studies have focused on single institutions. While single-institution studies are not intended for generalization and therefore lack external validity, they serve an important purpose for those institutions that try to gauge the effectiveness of their FYE initiatives and contribute to the body of research on success strategies. Additionally, much of the previous research about FYE courses was conducted in universities with traditional-aged students. Mills (2010) emphasizes the importance of adding studies with a community college focus:

An overwhelming majority of scholarly literature and theory focuses on traditional students and the cultures of four-year colleges. Reviews of persistence articles in the ERIC database (Cofer & Somers, 2000), college impact research (Pascarella, 1997), and major academic journals (Townsend, Donaldson & Wilson, 2005) have found that scholarship focused on two-year colleges makes up, at most, 10% of that literature. Of that 10%, only a small fraction examines success courses, leaving community colleges with little well-aligned research to inform practice (p. 10).

In spite of these limitations, past research demonstrates a positive effect of FYE courses on the selected outcome measures. According to Barefoot, a leading expert on FYE, “we are building a body of research that seems to indicate that yes, first-year seminars are positively correlated with improved student retention” (as cited in Cuseo, 2007). Pascarella and Terenzini (2005) also found that “whatever the procedure, the research points to the same conclusion, indicating positive and statistically significant
net effects of FYS participation (versus nonparticipation) on persistence into the second year” (p. 402).

Some studies, however, demonstrate no positive effect from the FYE course, i.e. researchers found no difference in success measures between students who had and who had not taken an FYE course (e.g. Friedman & Marsh, 2009; Strayhorn, 2009; Derby, 2007; Hendel, 2001; Cavote & Kopera-Frye, 2007; Keenan & Gabovitch, 1995;). And, while short-term impact is positive in the majority of studies, both at universities and community colleges, in the fewer studies in which long-term impact was studied, the results have been much weaker. According to Cuseo (n.d.) studies of retention / persistence have had much stronger and consistent outcomes than studies of academic impact / effect on grade point average.

In this chapter, the many studies which the author has reviewed are organized by the impact of an FYE course on student success outcomes: beginning with persistence / retention, followed by grade point average (GPA), credit hours earned (vs. attempted), and course withdrawal rates, and finally, impact on attitudinal and student skills. It also includes a review of the studies in which no positive impact was found for selected outcomes. The chapter concludes with a summary of studies that highlight the On Course curriculum, the curriculum adopted by North Central Michigan College.

**Impact on Student Success: Persistence / Retention**

Persistence and retention are measures of whether or not students continue to enroll in the college and are commonly used as early graduation indicators. In the context of this study these indicators are seen as proxies / outcomes of student
motivation. Both of these terms are used loosely in the literature. According to Wild & Ebbers (2002), there is no consistent definition used by community colleges, as they have adopted the retention vocabulary from universities. Also, Federal reporting guidelines on issues such as “program completion” which track cohorts of first-time, full-time students, not characteristic of the wide range of community college students, influence the terminology (Center for the Study of College Student Retention, 2012). Highlighting the difficulty of defining the terminology, Starke and Harthe (2001) commented that “the terms retention and persistence are used interchangeably in this paper” (p. 13). Tinto’s theory on student departure and Astin’s theory of student involvement, also based on university models, have greatly influenced this field (Wild & Ebbers, 2002). For purposes of this dissertation, persistence will be defined according to Achieving the Dream (AtD) guidelines, as a gauge of students returning from one semester to the next (Achieving the Dream, 2012). As a subset of persistence, retention will be defined as students returning from fall to fall semester. The fall-to-fall retention rate for community college students nationally is about 50% (McClennen, 2004).

**Retention studies at community colleges.**

Zeidenberg, Jenkins, and Calcagno (2007) studied the impact of the FYE course (“Student Life Skills / SLS”) on persistence in the Florida community college system, following up on a research study conducted by the Florida Department of Education. Florida community colleges offered the SLS course primarily targeted to developmental students, though it was open to all students and not a required course for most colleges. Different policies on FYE enrollment were in effect throughout the state system.
Through multivariate regression using a sample of almost 37,000 students who had enrolled in the fall of 1999, the researchers studied this cohort for 17 semesters (or nearly six years), factoring in students who had completed credentials or had transferred within the Florida state system. The researchers confirmed the results of the previous study by the Department of Education in that they found that students who took the SLS course had an 8% higher likelihood of persistence. For college-ready students, the rate of increase was 7% while for developmental students, it was 10%. The higher impact on developmental students vs. college-ready students is a promising result for community college students. While the sample size and longitudinal design of the study are strengths, the authors contend that “the design of our non-experimental model has potential problems. Most important is our inability to control for socioeconomic status and student motivation, which may be positively correlated with enrollment in SLS and also with the probability of completing a credential” (p. 4).

Cho, Jaggars, Karp, Jenkins, and Edgecome (2010) extended the study of Zeidenberg, Jenkins, and Calcagno (2007), researching the impact of student success courses in Virginia’s state-wide community college system with over 20,000 students who were enrolled in 2004. More than 14,000 in that sample took an FYE course (SDV 100, 101, or 108). The authors found that students who had taken an FYE course in their first year were retained to the next fall at a higher rate than both students who had not taken the course and all other students. The retention rate for students who took the FYE course was nearly 65%, compared with 31% for students who did not take the course, and 52% for all students. Using regression analysis with student demographic
and institutional characteristics as variables, Cho et al. found that the increase in retention to the second year was even greater depending on how early in their careers students took the FYE course. Students who took the course within the first 15 credits were predicted to have a 10 percentage point higher retention rate than all students. Comparatively, students who took the FYE course in their first year were predicted to have a 6 percentage point increase in retention compared to all students. The subpopulation that was consistently most greatly affected by taking an FYE course was women. As Cho stated, “among the entire 2004 cohort, there is a consistently positive association between female students and all three student outcomes” (credits completed, college level credits completed, and retention to fall semester) (p. 13). Cho et al. also studied the effects of the FYE course on students by one of three possible developmental math levels. As far as retention, the researchers found that students who placed into the math level closest to college-ready were most likely to benefit from taking the FYE course, as compared to students in the lower two levels. This could be partially explained by increased student ability or the effectiveness of the math instruction and not necessarily by the impact of the FYE course. As far as credits earned, students in the lowest level most benefitted from taking the FYE course, indicating that the outcomes, while generally positive, must be disaggregated by type of student if one is to make effective policy decisions. Cho et al. did not specify which of the three types of courses within the Virginia system (SDV 100, SDV 101 or SDV 108) might have been most effective for increasing student success.
Fralick (n.d.) conducted a comparison study of the effects of taking an FYE course (PDC 124) for 1600 students at Cuyamaca College in California (a community college) and found a positive impact on fall to spring persistence. Persistence for FYE students was 76.1% vs. 57.8% for all students. Even more convincing was the persistence rate of 85.4% for students who successfully completed the FYE course, a difference of 26.7% compared to the overall persistence rate. Almost 50% of students enrolled in the FYE course were first-time students, under the age of 20. The persistence rate for these first time attendees was 88.9%, which was an increase of over 25% compared to all students. Student surveys demonstrated that students felt greater confidence after taking the course.

Derby and Smith (2004) studied the effects of an FYE course on retention and persistence for nearly 7,500 students enrolled at a midwestern community college. The authors defined persistent students as having had “a three or more course load average and completed four semesters of course work within the two-year period without completing the requirements for a transferable degree” (p. 767). Three separate cohorts were studied over time; one that entered in 1998, one in 1999, and one in 2000. Two of the cohorts were tracked for two and one for four years. The cohorts of new and reverse transfer students (students who transferred back more than 16 credits after attending other colleges) were studied separately. The study was limited to daytime students who were more likely to attend college full-time. A positive relationship was found in the persistence of students in all three cohorts of new students. According to the researchers, “enrollment in such an orientation course could aid in deterring
students from dropping out, assisting students in wanting to re-enroll after stopping out, and helping students persist beyond the traditional time frame to earn a degree” (p. 771). There was, however, no positive association with FYE course and persistence for reverse transfer students for any of the three cohorts.

**Retention studies at universities.**

Schnell and Doetkott (2003) conducted a longitudinal study of retention for multiple cohorts of traditional-aged, full-time university students at North Dakota State University. They used a matched comparison group design to compare students with similar pre-enrollment characteristics (ACT scores, high school class rank, size of high school graduating class, and academic major) who had with those who had not taken an FYE course and had a total of 1,853 students in the two groups. The cohorts studied were from 1991 through 1994, with the study being conducted in 1998, ensuring that each group had completed at least four years of college.

Schnell and Doetkott found increased fall to fall retention rates for students who had taken the FYE course for each year of the four years of the study. In the first year the difference was 96% vs. 91%; in the second year 75% vs. 63%; in the third year 59% vs. 51%; and in the fourth year 51% vs. 44%. After the first year, the percentages are higher than expected since, unlike most such studies, the retention is only measured against returning students from the previous year. Other studies have found that the positive impact of the FYE course diminishes over time (e.g. Hotchkiss, Moore & Pitts, 2006; Barton & Donahue, 2009) but in this study, the positive difference between students who took the FYE course and those who did not remained over time. Since the
researchers compared students who self-selected into the FYE course against students who did not, the study does not provide an explanation of whether student motivation level might have been different at the beginning of the course (i.e., “volunteer effect”). Moreover, the research is focused on first-time, full-time students who are in the 17-21 age range, limiting its applicability to the community college population.

Fidler (1991) studied the effects of the historic FYE course at the University of South Carolina for 16 years in a non-randomly designed quasi-experiment. He found that students who enrolled in the FYE course, UNIV 101, returned the next fall at a significantly higher rate in 11 of the 16 years studied. The average return rate was 4.375 percentage points higher for students who took UNIV 101 and in some years, there was a difference as large as 7 percentage points. This difference in return rate was particularly notable as students who enrolled in the FYE course had a lower predicted and actual first-semester GPA, apparently demonstrating that the “volunteer effect,” an unknown variable in many studies, was not a factor which could explain the positive results in this study. Other input variables, such as age, sex, and race, were not significant to the outcomes. The consistent results of this 16-year study demonstrate the positive impact of UNIV 101 on the students attending the University of South Carolina and that the impact is unlikely due to a random influence. Also, the fact that enrollees’ predicted GPA was lower, yet they were retained at a higher rate, despite similar scores on a student motivation survey done at intake (of FYE and non-FYE students), shows the possible impact of the course to increase student motivation and “grit” (Duckworth).
VanderSchee (2011) studied the effects on fall-to-fall retention for students who took the FYE course at a small, public liberal arts college. He was particularly interested in the effects of combining two retention initiatives, the Noel Levitz College Student Inventory (CSI) and the FYE course. The CSI report included measurements of student’s “academic motivation, social motivation, general coping skills, and receptivity to support services” (VanderSchee, 2011, p. 25). This was an example of what Cuseo called a “time series” study (Cuseo, n.d.), in which comparison data is retrieved and compared to a time before the policy/structure of the course was changed. In this case, the data was compared to the FYE course prior to it being linked with the CSI. One-year persistence rates for students who took the FYE course (stand-alone) was 67% and increased to 85% for students who took the FYE course with the CSI embedded. Because of this positive increase in persistence, the course became mandatory for all new students and overall retention figures increased from 68.6% to 71.2%. This study is relevant for how it linked student motivation data (through the CSI) with student persistence. While it was not a pre-post test study (the CSI was not administered again after the FYE course), one could infer that the increase of persistence was related to an increase in student motivation, partially impacted by the FYE course.

Hyers and Joslin (1998) conducted a study to determine the predictive ability of the grade earned in an FYS course on retention at a small liberal arts college. The FYE course was required of all new traditional-aged students. Hyers and Joslin (1998) found that, “FYS grades are better predictors of both achievement and persistence than are high school rank and SAT scores” (p. 7). This has practical value for trying to determine
which students are most likely to drop out, particularly when an FYE course is offered in
an accelerated or shortened format, prior to grades in other courses being available.
The authors also commented, “achievement in FYS did not correlate with SAT scores.
The relatively few F students in the seminar (about 7% of the total) had the highest SAT
score (983), and the B students (about 40% of the total) had the lowest (926)” (p. 15).

Griffin and Romm (2008) edited a monograph for the “National Resource Center
for the First Year Experience and Students in Transition” in 2008 that assessed the
impact of FYE courses at 22 institutions of varied types, from liberal arts colleges to
state universities to community colleges. FYE course enrollment was correlated with
positive persistence or retention in the following institutions: Appalachian State
University, Indiana University-Purdue University Indianapolis (IUPUI), Indiana University-
Southeast, Lourdes College, Metropolitan State University, Miami Dade College,
Northern Illinois University, Sam Houston State University, University of Texas-El Paso,
University of Washington-Bothell and University of Wisconsin-Whitewater. While none
of the above studies used a true random assignment, most used statistical methods,
such as ANOVA, ANCOVA, pre-and post-surveys, and chi-squared analyses to study
groups of students who had and those who had not taken the FYE course and most used
a matched comparison group with similar student characteristics to control for different
input measures. The mix of different types of institutions and the consistently positive
impact of FYE courses help to demonstrate why so many institutions have implemented
this course as a success strategy.
Other retention studies.

Additional studies reviewed for this dissertation supported the effectiveness of the FYE course on persistence / retention and include:

- Jenkins and Wright (2008) studied the impact of a comprehensive FYE effort at Moraine Valley Community College, of which “COL 101” was one significant component. Over the course of their study with over 23,000 students, they found consistently that students who successfully completed the one-credit course returned at a higher rate for the second semester and second year than students who did not take the course at all or students who took the course and did not pass it.

- Starke, Harth, and Sirianni (2001) at Ramapo College, evaluated the effects of a 3-credit FYE course in a time series design (comparing student success prior to implementation of the FYE course) as well as by a comparison of students who had and those who had not taken an FYE course. They found an increased retention rate of 10 to 21 percentage points compared to the retention prior to the FYE course being implemented. The comparison group study also showed a higher retention rate for students who took the FYE course. Extending this study longitudinally, Starke, Harth, and Sirianni (2001) also found,

  ...significant differences in retention that favor students who enrolled in College Seminar in fall 1986 over the peers in their cohort who did not take the course to the third, fifth, and seventh semesters of college:
differences of 27 percentage points, 25 percentage points, and 27 percentage points, respectively (p. 13).

- Miller, Janz, and Chen (2007) conducted a quantitative study at a mid-sized university where a one-credit FYE course was offered. Their study involved two separate cohorts with a total of over 3,500 students. They found an increased retention rate for students who took the course compared with those who did not. They also found that students of high-, mid-, or low-achieving ability all benefitted from the course. This is interesting to note, as many institutions focus their efforts on the most at-risk students.

After extensive review of the FYE literature, this author selected a subset of the available studies regarding the impact of an FYE course on persistence / retention, and highlighted those which showed the multiple ways to assess the effectiveness of FYE courses. Matched comparison groups (e.g. Schnell & Doetkott, 2003), multivariate regression (e.g. Cho, Jaggars, Karp, Jenkins, & Edgecome, 2010), and time series designs (e.g. Starke, Harth, & Sirianni, 2001) were the most widely used.

The limitation in some studies was that the researchers were not able to control for the “volunteer effect,” i.e. students who chose to take the FYE course could have had a higher level of motivation / “grit” to begin with. Cho, Jaggars, Karp, Jenkins, and Edgecome (2010) indicated that a limitation in their study was not controlling for student motivation. Fralick (n.d.) found that student sense of confidence increased after taking the FYE course but he/she did not conduct a pre-post test study. VanderSchee
(2011) collected student motivation data within the Noel-Levitz CSI student survey but only at the beginning of the course. This makes it more difficult to relate any growth in student motivation to the FYE course.

This limitation prompted the author to conduct a pre-post test assessment of student skills / motivation for students who took the FYE course and those who did not and to control for student input variables, including student motivation. Other variables that will also be controlled based on the findings of these studies include enrollment status, gender, age, and college readiness.

**Impact on Student Success: Grade Point Average (GPA), Credits Earned, and Course Withdrawal Rates**

In order to graduate in a timely and economical manner, students must maintain a minimum grade point average (GPA), complete the courses they attempt and make steady progress towards their stated goal. With a large number of students receiving Federal financial aid, satisfactory academic policies require 67% of courses attempted be completed and for students who wish to receive loans to help with paying for college, even stricter rules may apply. Stories of exorbitant student loan debts have been in the news lately with students graduating from fields that are not predicted to be high paying. Such economic, Federal, and institutional pressures mean that colleges and students must make careful decisions about course and program selection and intervene as early as possible in a student’s career to maintain academic standards. Many studies assessed the impact of an FYE course on those outcomes and were performed primarily at universities.
Maisto and Tammi (1991) at the University of North Carolina, Charlotte studied the effect of an FYE course on student grade point average, as a way to determine level of academic integration. Using Tinto’s student departure theory that states that academic and social integration form the basis for increased student persistence, the researchers studied a matched comparison group (based on predicted grade point average), and determined that “seminar students were found to have significantly higher grade point averages than non-seminar students” (p.43). That positive difference remained even when the grade earned in the FYE course was removed.

Barton and Donahue (2009) conducted a quasi-experimental, comparative, quantitative study of a first–year experience course at the University of Maine. The institution compared the effectiveness in meeting course outcomes for a newly introduced 1-credit FYE course to an existing 4-credit FYE course. They used several tools, such as the National Survey of Student Engagement (NSSE), the Perry measure of intellectual development and student academic performance data. The researchers found that the average GPA for students who took the 4-credit course was 2.83 vs. 2.67 for students who took the 1-credit course. That difference was not statistically significant. According to Barton & Donahue (2009), “first-year seminar students compiled a higher mean GPA by the end of the first year and reported that they worked harder, were more engaged in campus activities, and discussed grades more often with faculty” (p. 271). The different results that this study found between the 1- and 4-credit course, leads one to ponder if the number of credit hours may have unduly influenced
the positive difference on student success. It is not clear whether the grade for the FYE course was included in the GPA calculation.

Yockey and George (1998) conducted a study of an FYE course at the University of Idaho that was paired with an introductory sociology course, using the principles of Supplemental Instruction (SI). The FYE instructor was embedded in the sociology course, role-modeling positive student behaviors during the course itself and presented specific strategies in the FYE course that related to the content and expectations of the sociology course. In a matched group design, the researchers found that the semester GPA was significantly higher for students in the FYE / sociology course than for matched students taking the stand-alone sociology course (2.47 vs. 2.12). Grades in the sociology course were also higher for students in the FYE / sociology course; 82% of students in the FYE / sociology course had a good grade (defined as grades A, B, or C) compared to 64% of matched students. Cumulative GPA and cumulative number of credits were greater when viewed after four semesters but not after two semesters, suggesting that long-term effects were reaped by students taking the paired course. Cumulative GPA was .36 higher for the FYE / sociology students, and cumulative credits earned were 53 credits vs. 38 credits (after four semesters) in favor of the FYE / sociology students.

Yockey & George (1998) stated, “As with cumulative GPAs, there appears to be a longitudinal positive impact on completed credits. Those students who completed the Fall 1994 FTS course have better performance after four semesters” (p. 71). While these outcomes are very promising, the format of this linked class with SI components is likely not one that could be brought to scale without significant financial implications.
Strumpf and Hunt (1993) conducted a study on the impact of an orientation course on the “retention in good academic standing” of first-time, full-time freshman at the University of Maryland – College Park, a large urban university. They were able to construct a randomly assigned group of 77 students who took the course and compare the outcomes to a group of 80 students who expressed interest in taking the course but were not placed into it. This is one of the few studies in which researchers were able to control for the “volunteer effect,” thereby drawing a stronger conclusion between the effects of taking an FYE course and the student outcomes. In many other studies, students self-selected to take the FYE course, and hence, outcomes could have been influenced by this fact alone. The researchers found significant differences in the percentage of students who were in good academic standing at the end of their first four semesters. Of the students who took the FYE course, 79% maintained at least a 2.0 at the end of the first fall semester, compared to 63% of students who did not. The following fall, 85% of these students who (initially) took the FYE course maintained above a 2.0 GPA, compared to 64% of students who did not. For Black students, the rate of retention in good academic standing was significantly affected by taking the FYE course: 71% compared to 44% of students who took the course maintained above a 2.0 GPA in their first fall semester. The following fall, 82% maintained their good academic standing vs. 56% of students who did not take the FYE course (initially). The findings for Black students are relevant for the diverse community college population but the overall applicability to community colleges is diminished since it only researched full-time students at a university.
Friedman and Alexander (2007) conducted a quantitative study of a learning community in which the anchor course was FYE at Appalachian State University. 37 sections with over 1,200 new students were in the sample. The goal of creating the linked community with FYE as an anchor course was to help students transfer the student skills learned in FYE to a subject-specific course. According to the authors,

The Freshman Seminar course fulfills an important role, as the anchor course, in these learning communities by integrating course content, promoting study groups, employing practical learning skills appropriate for the linked course, and exploring the field for a possible major. Students in Freshman Seminar may be co-enrolled in a general core curriculum linked course, such as history or geography; or a special topic learning community, such as leadership or military science (p. 66).

Researchers found that students who took the linked FYE course had higher GPAs in the FYE course than non-linked FYE students (2.78 vs. 2.53), and with the exception of one subject, had higher GPAs in the content course if it was linked with FYE than in the stand-alone content course.

Additional studies support the increase in GPA, number of credits earned and decreased course withdrawal for students who took an FYE course and include:

• Hotchkiss, Moore, and Pitts (2006) evaluated the FYE program at Georgia State University, a large, mostly commuter institution with over 28,000 students. The FYE course (“New Student” course) was embedded within a 15-credit hour learning community in which approximately 40% of new students participated. Researchers found that students who participated in the FYE learning community
earned a three-quarter to one full grade advantage over other students who had not participated. This margin of higher GPA declined after the first semester to 0.34, though students who had by then withdrawn from college, were no longer included. The grade in the FYE course was included in the cumulative calculation and may partially explain the higher performance of first year students, as they elected to take an FYE course, rather than a course in an academic discipline. Fall to fall retention was higher for some groups of students, namely Black men and Black women but was lower for White males.

- Stovall (2000) found a significant positive difference in first-term GPA for students who took an FYE course and particularly for minority students attending a mostly white institution. The first-semester GPA was higher for minority students who took the FYE course (.872) compared with .401 for white students.

- Fidler (1991), in his longitudinal study over 16 years at the University of South Carolina, found that students who took the FYE course had a significantly higher course load than students who did not enroll in the course.

- Derby and Smith (2004) at Sauk Valley Community College found that students who took an FYE course were less likely to drop out, and stop-outs (one, two, or three semesters of non-enrollment) were more likely to re-enroll.

- Grunder and Hellmich (1996) conducted a longitudinal study of Santa Fe community college in Florida that implemented a first year experience program that included both an expanded orientation program and an FYE course. Students could choose to take either, both or neither of the options. The
researchers found that the FYE course was especially effective in decreasing fall
course failure rate for Black students and for female students, and in increasing
GPA for Black students and for male students.

The multiple studies that showed an overwhelmingly positive impact of an FYE
course on academic outcomes, such as GPA, credits earned, and reduced course
withdrawal rates were selected to demonstrate the potential of the FYE course to
positively affect those standard student success measures. Some critics of the FYE
impact studies have argued that taking the FYE course lightens the course load for
students, and consequently, they are balancing fewer content credit hours in their first
semester compared with other students (e.g. Shanley & Witten, 1990). If it cannot be
demonstrated that the positive impact of the FYE course is sustainable over longer than
the first semester, the critics’ opinion will gain a stronger voice. Student academic
confidence is impacted by positive student outcomes (e.g. Akey, 2006), and many
community college students have had limited success in high school. The potential to
write a new chapter in the student’s life, one that includes academic success, by taking
an FYE course, is potentially extremely powerful. Additionally, GPA and other academic
success measures are considered proxies / outcomes of student motivation / “grit” for
this dissertation, i.e. one cannot achieve or sustain a good GPA or have other positive
academic outcomes without a strong sense of motivation / “grit,” especially for
community college students who balance many challenges, of which college is just one.
That is why this dissertation will focus on the impact of an FYE course on student attitudinal and motivational skills.

**Impact on Student Success: Graduation Rates**

Though many community college students attend college for reasons other than earning certificates or degrees, for those who express intention to earn a certificate or degree, graduation rates remain too low. As discussed in Chapter 1, the low graduation rate is a major factor in the efforts by various stakeholders, such as the Gates Foundation’s “Completion by Design,” Achieving the Dream, and President Obama’s “American Graduation Initiative.” This author contends that unless any of the student success initiatives impact graduation rates, they cannot be considered truly successful. While it is understood that an isolated intervention, such as an FYE course cannot be seen as a silver-bullet, and must be accompanied by a host of other strategies, especially for at-risk students, each intervention must be leveraged carefully to impact this bottom line.

In the previously cited longitudinal study of community college students in Florida, Zeidenberg, Jenkins, and Calcagno (2007) found that for students who had taken the FYE course, their chance of earning a credential increased by 8% in comparison to all students. Of the nearly 37,000 students in the study, only 17% who were developmentally placed earned a credential within 17 semesters compared with 41% of college-level students. However, developmental students who enrolled in the FYE course were only 2% less likely to earn a credential than college-ready students. According to Zeidenberg, et al. (2007), “so taking an SLS course combined with
enrollment in remediation is associated with a higher probability of completion than enrollment in remedial courses alone” (p. 4). Additionally, students who enrolled in a developmental course along with the FYE course, had a 5% higher probability of completion, while students who did not enroll in developmental courses and took the FYE course had a 9% higher probability of completion.

Derby and Smith (2004), previously cited for their research on retention and persistence, also studied several retention factors for nearly 7,500 daytime students enrolled at a midwestern community college, including on-time graduation rate. The authors defined “successful students” as students who “completed the requirements of a transferable degree within a two-year period” (p. 766). Three cohorts were studied over time and results checked after two and one after four years. The researchers found a positive significant relationship for new students and on-time graduation, i.e. “enrollment in the orientation course was associated with graduating within the two-year time frame” (p. 771). The same was not true for reverse transfer students who had earned more than 16 credits elsewhere. There was no relationship between the FYE course and on-time graduation for this group of students in any of the three cohorts. The lack of positive impact on reverse transfer students may show the complexity of applying one strategy to varied students, while hoping for similar outcomes. It is critical to employ tools that will work for each subpopulation.

In a study of a subgroup of at-risk students at a university, Noble, Flynn, Lee, and Hilton (2007) studied differences in grade point average and graduation rates for students enrolled in a special first-year program, called “ESSENCE” (Entering Students at
South Engaging New College Experiences). In their matched comparison group design, they found that “the average GPA of ESSENCE students is higher than for non-participating on-campus and off-campus students in each of the four years” (p. 46). “ESSENCE” is a program for full-time students living on campus; the matched comparison group included students who lived on campus and some who did not. In addition to the increase in GPA for students who participated in the special program, Noble et al. (2007) also found a 50-60% greater likelihood of graduating for students who participated in the FYE program, even when controlling for ACT scores and grade point average: “Participating in ESSENCE is clearly good for graduation prospects, most importantly for four year graduation rates. Holding other factors constant, we find that students who participate in ESSENCE have higher graduation rates” (p. 55).

Zimmerman (2000) studied the predictive ability of a mandatory 1-credit FYE course on student success measures at a technical community college. The study involved 160, mostly traditional-aged, occupational students attending the college full-time. The authors found that the grade earned in the 5-week FYE course was strongly related to the 2- and 3-year graduation rate, i.e. the higher the grade in the FYE course, the higher the graduation rate. The FYE course also correlated with first-quarter GPA and cumulative GPA after two quarters. Zimmerman (2000) noted that, “high school rank and ACT score do correlate with first-quarter GPA, but much less so than the orientation-course grade” (p. 37). As part of the study, logistic regression was conducted to predict graduation rates. The FYE score predicted a 2-year graduation rate in 69.3% of the cases (at a statistically significant rate). For many community college students who
may have ACT scores or high school rank that would be considered less than college-ready or for students who have been out of high school for a period of time, this study is particularly promising to demonstrate the potential of an FYE course on student success. It also invites the question of whether student motivation / grit played a factor in the students’ success since standardized scores / rank played no role. The limitations of the study include the fact that students were enrolled full-time, which is not reflective of the typical community college population.

Additional studies demonstrating the positive effect of students who took an FYE course on graduation rates include:

• Stovall (2000) conducted a study of the impact of an FYE course at a community college with an enrollment of about 5,000 students. She found increased three-year graduation rates for students who took the FYE course. According to the researcher, “by aiding students’ early integration into the college environment, enrollment in a success course had a positive impact on both their short-term and long-term academic performance and persistence” (p. 47).

• Groh and Holloway (2012) studied the impact of ENGR 194, a one-credit course offered at Purdue University, designed as an introduction for women going into engineering fields. In addition to guest speakers who acted as role models for students, the content was very similar to other FYE courses in that the goal was to increase retention and graduation of students who took the course. Six-year graduation rates were higher in all but one of the years studied for students who took ENGR 194 compared to students who did not.
In a previously cited study by Starke, Harth, and Sirianni (2001) at Ramapo College in which a time series design and a comparison group study were performed for new, full-time students who had and who had not taken an FYE course, researchers found higher 4-, 5-, 6-, and 7-year graduation rates for students who had taken an FYE course. For example, the 4-year graduation rate for students with an FYE course was 21% vs. 7% for students who had not taken an FYE course. The positive difference in graduation rate between students who had and who had not taken an FYE course remained through the 7th year and is of particular note, because there were a greater number of at-risk students who took the FYE course than did not. This seems to suggest that the FYE course can be a powerful factor in providing equity for at-risk students who would normally not be as successful in college.

Too many community college students begin their studies without completing them. Graduation rates at community colleges have been stagnant for many decades, despite several initiatives to increase them. For students in developmental courses, the rates are even lower. According to AtD reports, “the results point to the conclusion that students with the greatest developmental needs are at the greatest risk of leaving college” (dataNotes, 2011).

Many students who attend college without graduating have left their hopes and dreams at the doorstep. To meet the national and state goals of increasing graduation, this trend has to dramatically be changed.
The studies of the impact of an FYE course on graduation rates have been included in this literature review because it appears that the FYE course has the potential to impact this trend in a significant manner. It has been demonstrated that students attending all types of institutions graduate at higher rates when they have taken an FYE course as part of their curriculum; the data is, not surprisingly, even stronger when students have passed the course. Using the FYE course as a predictor of retention and graduation is also very effective, and some studies have demonstrated that it is stronger than standardized test scores as a predictor of success. Graduation rates are impacted with remarkable consistency despite uniqueness across the FYE curriculum.

**Impact on Student Success: Attitudinal or Student Skills**

While traditional student success measures previously discussed shed light on the potential of an FYE course to help students succeed academically in college, the inability to control for the “volunteer effect” in many of the studies means that it is still unclear as to whether these traditional success measures are a result of the FYE course or of other influences. It is also this author’s contention that student attitudinal, and especially motivational, skills have a more profound improvement which can last long beyond the college impact and have also been demonstrated to impact student GPA (e.g. Duckworth, Tsukayama, May, 2011).

Keup and Barefoot (2005) accessed a national sample of first year students at over 400 institutions and employed pre- and post-test assessments to study the impact of an FYE course on various student outcomes. The sample consisted of 3,680 students
attending 50 baccalaureate institutions who participated in the Cooperative Institutional Research Program (CIRP) survey and the follow-up questionnaire, “Your First College Year” (YFCY). YFCY was given at the end of the first year. Of note is that the methodology followed Astin’s Input-Environment-Output (IEO) model, which this author will also use. The authors demonstrated that several positive outcomes were associated with students taking the FYE course in relation to academic and social integration. For example, 69.7% of students who took the FYE course reported having interacted with faculty outside of class, which is slightly higher than compared to 65.3% of students who did not take the course. Additionally, Keup, and Barefoot (2005) found an impact on peer relationships and stated that:

It also appears that students who take the first-year seminars engage in better academic practices. For example, Table 2 shows that students who participate in first-year seminars are more likely to discuss course content with students outside of class (4.7 percentage-point difference), speak up in class (5.7 percentage-point difference), and study with other students (8.1 percentage-point difference) than students who do not take a first-year seminar.

Students who took the FYE course were more likely to attend an on-campus event (5.5 percentage-point difference) or participate in volunteer work or community service (10.1 percentage-point difference). Students who took the FYE course reported a higher level of feeling of success on variables, such as “establishing a network of friends on campus” or “managing your time effectively” (p. 26). Lastly, reviewing the outcomes for students for whom the FYE course was mandatory vs. optional, through multivariate regression, Keup and Barefoot found no statistically significant positive impact for
students who took the FYE course voluntarily on the outcomes studied, suggesting the “volunteer effect” may have been a factor, i.e. students who chose to take the course already had many of the student skills which were being researched. The authors also found that the impact of FYE was much less at larger institutions, due to the fact that fewer students enrolled in the course. The irony is that students at large institutions may have needed these student skills (such as talking with faculty or peers outside of class) even more than students at smaller institutions, where the environment may be more conducive to informal faculty-student interaction.

Mills (2010) conducted a multi-community college study using the Community College Survey of Student Engagement (CCSSE) as a quantitative tool and focus groups as a qualitative tool, to measure engagement for students who were enrolled or not enrolled in a success class. She also controlled for age and enrollment status (part-time vs. full-time). Multiple regression analysis found generally strong connections between enrollment in a success course and engagement measures, such as “active and collaborative learning.” Student feedback stressed the importance of having committed instructors using teaching strategies that engaged the learners with the content and their peers. Mills (2010) commented that “this study has suggested that older students, underprepared students, and college ready students may gain more from different success course experiences” (p. 282). This conclusion could partially be explained by different policies at the community colleges studied (e.g. at one, the success course was required but did not count towards graduation or transfer) that could affect student
perceptions about the value of the course. Mills’ study is a strong contribution to the success course research for community college students.

Kegan and Gabovitch (1995) conducted a study of the FYE course initially implemented through a Title III grant, using self-reported pre-and post-test scores for students who were enrolled in the FYE course compared to other new students not enrolled. Positive results were found for “confidence in college learning skills,” “familiarity with college policies and procedures,” “career maturity,” and “knowledge and utilization of key campus resources.” The FYE course was able to compensate for students who would be considered at-risk in areas, such as “career maturation.” The authors found that “freshman seminar students began the semester with lower scores, showed significantly greater gains, and after eight weeks surpassed the scores of students in the control group in all four years” (p. 8).

Additional studies of student skills include:

• Fidler (1991) who conducted a longitudinal study of the effect of UNIV 101 at the University of South Carolina, found that students who took the FYE course reported using student services more frequently than students not enrolled in the course. Examples of services used with greater frequency include career planning office (27.0 % of UNIV students vs. 9% of non-UNIV 101 students) and student health center (41.3% of UNIV 101 students vs. 34.1% of non-UNIV 101 students).
• Groh and Holloway (2012) studied the effects of a one-credit elective FYE course for female students pursuing engineering at Purdue University. In a pre-and
post-test study, they found students reported certain student skills to be increased after taking the course (compared to students who did not). Students who took the FYE course responded more positively to the following questions: “I am confident about choosing engineering as a major” and “I feel confident that I have selected the best area of engineering for me” (p. 7).

- Engberg and Mayhew (2007) compared FYE students’ growth in democratic outcomes (“responsible citizenship”) in three courses: communication, pre-Engineering and FYE at a large university. They found that student growth, using the “Student Thinking and Interacting Survey” (STIS) was higher for students who had taken the FYE course. The authors suggest that student success courses should be studied for effects beyond retention and GPA improvement. They also recommend that experiences, such as student success courses, be scaled up to impact more students.

- Davis-Underwood and Lee (1994) at the University of North Carolina employed a matched group study and administered a survey to FYE and non-FYE students to ask about their habits of interacting with faculty and engaging in campus activities. They found that FYE students had an average of 4.96 faculty contacts and participated in an average of 3.13 activities vs. 2.08 contacts and 1.21 for non-FYE students.

- Barton and Donahue (2009) conducted a quasi-experimental study at the University of Maine (Farmington) on the impact of a new 4-credit FYE course compared with an existing 1-credit FYE course. Using multiple measures, such as
the NSSE (National Survey of Student Engagement) and BCSSE (Beginning College Survey of Student Engagement), they found that 5/14 items showed statistically significant differences for students who had taken the 4-credit FYE course compared to those who had not. Those were:

1. Anticipated time and actual time spent on school work
2. Expected to receive academic assistance in the course
3. Interacted with faculty about grades / assignments
4. Attendance at campus events / activities
5. Attendance at creative art events / venues

The previous studies were selected to demonstrate the powerful impact of the FYE course on student skills that are critical for success in the college environment. Many of the results, e.g. increased faculty contacts, were likely due to the fact that contact with faculty was a requirement of students in the course or was somehow embedded in the course objectives. That, however, does not detract from the improvements of that outcome. Giving students confidence and experience to perform a new skill, such as talking with faculty who previously may have seemed to be out-of-reach cannot be understated. It is this and other transferable skills that the FYE course is so well positioned to teach. According to Cuseo (n.d.),

It is emphasis on development of highly adaptable and transferable skills [emphasis in text] that distinguishes the first-year seminar from most traditional college courses, which tend to focus largely on the acquisition of a circumscribed and prescribed bodies of knowledge. (Any transferable skill development that
results as a consequence thereof is usually tacit or incidental to discipline-specific content coverage.) In contrast, it could be said that the seminar has the capacity to perform a “meta-curricular” function-transcending specialized content and traversing disciplinary boundaries by focusing on the development of learning strategies and life skills that have cross-disciplinary applicability (p. 8).

This dissertation seeks to extend the findings of these studies by demonstrating how an FYE course impacts students’ sense of motivation / “grit” by measuring pre-and post-FYE scores of student attitudes toward persistence, time management skills, willingness to seek help, procrastination, and mindset / locus of control. Personal attitude change is arguably a more permanent change than the acquisition of new knowledge, which can be easily forgotten with the passage of time (Joe Cuseo, email message to author, September 16, 2012). Also, in studies which have assessed student motivation, such as Duckworth, Tsukuyama, and May (2011), researchers have found that motivation, measured by impact on self-control, can have an impact on student performance (measured by GPA), but not vice versa. Duckworth, Tsukuyama, and May (2011) indicated that, “changes in self-control over time predicted subsequent changes in GPA, but changes in GPA over time did not predict subsequent changes in self-control” (p. 315).

Impact on Student Success: Data from On Course (OC) Colleges

While most studies reviewed did not indicate which curriculum was used, many suggested the need to learn more about whether a specific curriculum or teaching methods impacted student outcomes. Mills (2010) stated, “student success course type,
content, and goals are important variables that have not been accounted for in existing research” (p. 62). It is for this reason that studies using the On Course (OC) curriculum have been reviewed and are provided in this separate section. The studies were retrieved from the OC website (www.oncourseworkshop.com/), which invites colleges to share their success stories. The OC curriculum integrates eight learning outcomes that are taught using active and collaborative learning methods, journal-based reflections and group discussions.

Table 2: “On Course”: 8 Choices of Successful Students

<table>
<thead>
<tr>
<th>Successful Students...</th>
<th>Struggling Students...</th>
</tr>
</thead>
<tbody>
<tr>
<td>accept personal responsibility, seeing themselves as the primary cause for their outcomes and experiences.</td>
<td>see themselves as victims, believing that what happens to them is determined primarily by external forces such as fate, luck, and powerful others.</td>
</tr>
<tr>
<td>discover self-motivation, finding purpose in their lives by discovering personally meaningful goals and dreams.</td>
<td>have difficulty sustaining motivation, often feeling depressed, frustrated, and/or resentful about lack of direction in their lives.</td>
</tr>
<tr>
<td>master self-management, consistently planning and taking purposeful actions in pursuit of their goals and dreams.</td>
<td>seldom identify specific actions needed to accomplish a desired outcome. And when they do, they tend to procrastinate.</td>
</tr>
<tr>
<td>employ interdependence, building mutually supportive relationships that help them achieve their goals and dreams (while helping others do the same).</td>
<td>are solitary, seldom requesting, even rejecting, offers of assistance from those who could help.</td>
</tr>
<tr>
<td>gain self-awareness, consciously employing behaviors, beliefs, and attitudes that keep them on course.</td>
<td>make important choices unconsciously, being directed by self-sabotaging habits and outdated life scripts.</td>
</tr>
<tr>
<td>adopt lifelong learning, finding valuable lessons and wisdom in nearly every experience they have.</td>
<td>resist learning new ideas and skills, viewing learning as fearful or boring rather than as mental play.</td>
</tr>
<tr>
<td>develop emotionally intelligence, effectively managing their emotions in support of their goals and dreams.</td>
<td>live at the mercy of strong emotions such as anger, depression, anxiety, or a need for instant gratification</td>
</tr>
<tr>
<td>believe in themselves, seeing themselves</td>
<td>doubt their competence and personal</td>
</tr>
</tbody>
</table>
Among the colleges that used Downing’s *On Course* curriculum, many achieved significant gains in student outcomes, using many of the traditional indicators discussed throughout this chapter.

Brazosport College in Texas, an Achieving the Dream college, researched retention rates for student cohorts, beginning in 2007, the first year that the college required all first-time-in-college students to take an FYE course entitled “Learning Frameworks.” They found that students who successfully completed the course had an average persistence rate (fall to spring) of 89% (compared to a baseline of 66%).

Researchers also found that “students who successfully completed Learning Frameworks, (...) were more likely to succeed in developmental coursework, more likely to succeed in gatekeeper courses, more likely to be retained, and less likely to withdraw” (Center for Community College Student Engagement, 2012).

At Aurora University in Illinois, students who are conditionally admitted are required to take an FYE course. This policy change was made based on the positive results they found for students in previous years. Using a time series design, researchers compared students’ GPA and persistence / retention rates with those outcomes for

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2 “Conditionally admitted” refers to students who do not meet the standard admission criteria but are allowed to enroll and take specially designated courses.
students prior to the course being available. The average GPA increased by .36 and fall to winter persistence increased by 19% for students who took the FYE course.

At Baltimore City Community College in Maryland, developmental writing, reading and math courses were linked with an FYE course and average results were compared between linked and stand-alone courses. Fall to winter persistence of students taking a linked course ranged between +13% (for developmental writing), to +21% (for developmental math). The pass rates for the subject area course were equally as positive, not only in the semester during which the course was linked but also in the subsequent semester, for the next level course. This held true for all three subject areas. For example, in developmental English, the increased pass rate was +15% for the linked course (compared to the stand-alone) and in the following semester, in the subsequent English course, the positive difference in persistence was +38%.

At Brevard Community College in Florida, researchers compared fall-to-spring persistence and fall-to-fall retention for students who had passed the FYE course (with a “D” or higher) to students who did not enroll in the course, SLS 1101. They found increased fall to winter persistence of +18% and increased fall-to-fall retention of +15% for developmentally placed students. The impact for college-ready students was positive but not as great when compared to other college-ready students. Fall-to-winter persistence was +7% higher for FYE students and fall-to-fall retention was +12% higher. Graduation rates were +10% higher. It is interesting to note that the fall-to-winter persistence rate of developmental students who took the FYE course (90%) equaled the
fall-to-winter persistence rate of college-ready students (91%), demonstrating the
tremendous impact on student success for the at-risk students who most need support.

At Cuyahoga Community College in Ohio, researchers studied retention and
student confidence by administering a survey to students in a linked FYE /
developmental math course. Though the sample size was small, 91% of students
indicated that their confidence about succeeding in the math course had increased
compared to what they felt at the beginning of the semester. Students also reported
that they were generally more confident about succeeding in college after taking the
course.

In a study with similar objectives, students at Paradise Valley Community College
(in Arizona) were surveyed about increases in their student skills. Of the over 600
students, 88% responded that the course helped them improve their self-management
skills, 86% responded that the course helped them learn how to take charge of their
lives, and 84% responded that the course helped them increase their self-motivation
(On Course, 2012).

The FYE course studied for this dissertation at North Central used Skip Downing’s
On Course curriculum. All faculty teaching the course were required to participate in a
mandatory professional training seminar hosted by an OC representative and regular
meetings were held with faculty teaching the course in an effort to continuously
improve student outcomes. The consistently impressive results of other colleges that
have integrated OC into its FYE courses are similar to the outcomes studied for students
at North Central. In focus groups and other feedback, many students rave about the
impact of OC on their college and life success. However, despite an initial increase in success factors, it appears that the positive impact of the course diminishes with time. FYE student performance, while initially more positive than non-FYE students, begins to weaken and the difference becomes almost non-negotiable between the two groups.

This dissertation will connect naturally with the other studies in this section of Chapter 2, since the curriculum used was exclusively OC and will attempt to make a stronger link between student skills related to FYE course enrollment. Many of the studies in this section also did not account for the “volunteer effect,” i.e. students who took the FYE course could have been more motivated than others who did not. If it can be shown that student skills for FYE students increased at a higher rate, which this dissertation will attempt to do, it provides FYE administrators and faculty a better avenue to maintain that gain after the course is completed.

**Impact on Student Success: Inconclusive Outcomes**

While this literature review has helped to demonstrate that there is an overwhelming body of evidence at a multitude of institutions demonstrating the positive effects of an FYE course on student success, there are several studies in which no positive effect on the outcomes studied was found for students who took the FYE course. This section is included to provide a balanced view of the impact of an FYE course.

Derby (2007) studied the impact of an FYE course on the success of minority students and while he found that White students who had taken the course were 72 times more likely to graduate when taking the course, there was no such positive effect
for the African-American or Hispanic students who were the focus of his research. The sample size was heavily skewed towards White students, which could partially explain this finding.

Hendel (2001) studied the impact of an FYE course on student satisfaction and as a predictor for retention at a large, urban Research I university. Approximately 1,700 students were in the sample. He found that enrollment in the FYE course had no impact on student satisfaction (only 15 of 92 items showed a difference in favor of students who had taken the FYE course), nor was taking an FYE course predictive for second year retention. The only significant predictor of retention was high school rank.

Cavote and Kopera-Frye (2007) conducted a study of the impact of FYE courses at the University of Nevada-Reno with a special emphasis on non-traditional students. The researchers compared the persistence of students who took the FYE course to students who did not. Non-traditional students were grouped into one of four types based on the number of risk factors. The risk factors included first-generation, delayed entry, part-time enrollment, off-campus employment, financial independence, single parent, children / dependents, and no high school diploma. The study found that FYE enrollment did not predict persistence to winter semester and found no difference between the comparison groups of FYE vs. non-FYE students in persistence. This result could partially be explained by varying pedagogy across the multiple sections of the FYE course.

In a study using the same university in Nevada, Cavote, and Kopera-Frye (2004) found no significant impact on GPA or 3-semester persistence for students who enrolled
in a subject-based FYE and those who took no FYE course. Comparison groups were
dissimilar in input characteristics but FYE students generally had higher ACT / GPA
scores. Integrating the FYE content into various introductory subject courses and
expecting faculty to teach similar if not equivalent content, is a complex task. The poor
results for FYE students could be partially explained by inconsistent application of FYE
courses.

Barton and Donahue (2009) conducted a quasi-experimental, comparative,
quantitative study of a first–year experience course at a university, particularly
evaluating any difference in student outcomes based on whether students took a 4-
credit FYE course or a 1-credit FYE course. The researchers used several tools, including
NSSE (National Survey of Student Engagement), the Perry measure of intellectual
development, GPA, and retention. They did not find significant differences for students
who took the 4-cr. course vs. those who took the 1-cr. course in terms of retention. GPA
measures were significant only without moderating variables (e.g. SAT score).

McElroy (2006) studied the impact of the FYE course on grades in developmental
English or reading for ESL students at the University of North Carolina-Charlotte. She
found no statistically important relationship for students who took the FYE course (ACA
111) for this sub-population at UNC-Charlotte and course completion rate. In this
matched comparison group study, 275 students who did not take the FYE course were
compared to 35 students who did. One could speculate that the imbalance in the
number of students in each group could have played a role in the outcomes found.
Smith, Goldfine, and Windham (2009) conducted a qualitative study to compare student perceptions of gains in their student skills from taking a linked vs. unlinked FYE course at a large university. Over 1,000 students were in the sample. The researchers administered a home-grown survey to students and found that students in the linked FYE course rated only two of the eleven factors higher than students in an unlinked FYE course. This surprising result could partially be explained by a different population typically choosing to take a linked vs. an unlinked course. The study did not control for age or enrollment status.

Schrader and Brown (2008) studied the effects of a 1-credit, elective FYE course at a large university on students’ knowledge, attitudes, and behaviors using a pre-post test survey design. Approximately 900 students were in the sample with about 25% serving as a comparison group of students who did not take FYE. They found some evidence of greater gains for FYE students, however, did not find differences that were of practical significance.

It is important to note that while the majority of FYE impact studies were positive, there were some studies which were unable to demonstrate any effect for students who took an FYE course, compared with students who did not. Derby (2007) and McElroy (2006) focused on the FYE impact on minority groups (ESL students are considered to be in this group), a particularly vulnerable group at community colleges, whose success/graduation rates have lagged behind White students. They were unable to demonstrate that the FYE course provided any equity in student outcomes. The study at Chaffey College demonstrated the short-lived impact of the FYE course but the
elusiveness of longer-term gains. This section is provided to demonstrate the extreme complexity in increasing student success through the pipeline to graduation, and that the FYE course is not a silver bullet prescription that works for all students at all institutions.

**Student Motivation / Grit Theory**

While the outcomes studied, such as retention, persistence, GPA, graduation, and affective skills create a strong and complex body of evidence supporting the positive effect of the FYE course, what has not been studied as extensively is the impact of an FYE course on student motivation. Student motivation transcends the inspiration provided by an energetic instructor, the excitement of an interesting topic or the morale contributions of supportive peers. If a study can demonstrate that students who have taken the FYE course have increased their level of motivation / grit, the potential of an FYE course becomes even more promising. This dissertation extends the work of Dr. Daniel Chambliss, discussed in chapter 1, in which he concluded that “motivation is an outcome of college” (p. A 48). The FYE course could potentially constitute that “identifiable moment” in which a student becomes excited about his/her college experience. As stated in chapter 1, several additional motivational researchers have developed theories that can be applied to college student development (e.g. Bandura, Weiner, Duckworth, and Dweck). The two that will influence this dissertation most significantly, Duckworth’s grit theory and Dweck’s mindset theory, will be reiterated here.
**Duckworth’s grit theory.**

Penn State University psychologist Angela Duckworth contends that the difference between success and not reaching one’s goals is a factor called “grit.” She has developed a grit scale that has been used in multiple settings, from Scripps National Spelling Bee contestants to West Point graduates, to help to predict if they will persist until the end of their challenge. The results of the grit scale have been more predictive than any other input variable, such as standardized test score, physical or IQ test. “Grit” as defined by Duckworth, Peterson, Matthews, and Kelly (2007) is:

Perseverance and passion for long-term goals. Grit entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress. The gritty individual approaches achievement as a marathon; his or her advantage is stamina. Whereas disappointment or boredom signals to others that it is time to change trajectory and cut losses, the gritty individual stays the course” (Duckworth et al. p. 1088).

“Grit” is seen as being important in establishing longer-term goals and explaining or predicting persistence of behavior in achieving those goals (Duckworth et al., 2007). In studying the relationship between grit and level of education, they found that:

Post-college graduates were higher in grit than most other groups. Similarly, participants with an Associate’s degree were significantly higher in grit than those with less education and, interestingly, also higher in grit than those with a Bachelor’s degree, although this difference failed to reach significance” (p. 1091).
Duckworth et al. also found that higher grit scores were associated with lower SAT scores in a study of GPA performance at a large university. “Given that college grades are only modestly correlated with adult success (Hoyt, 1966), we wonder whether follow-through or, as we prefer to call it, grit, may in fact matter more than IQ to eventual success in life (p. 1099). This finding is particularly relevant for community college research, such as this dissertation, as the student population, in general, has lower standardized test scores than compared to selective universities.

Dweck’s mindset theory.

Stanford psychologist Carol Dweck, in her book entitled Mindset, promotes the existence of two types of mindset: fixed and growth. A fixed mindset is one in which people believe their abilities and potential are “fixed,” and that regardless of hard work and effort, the outcome will be the same. Exerting hard work and effort, in fact, is seen as a sign of weakness and an affirmation that one is not “cut out” for the task at hand. Individuals with a fixed mindset try to prove themselves with every action, and stay in the “safe zone,” seeing everything as a potential test of their abilities. Since they do not want to fail, as that would be a demonstrable sign of weakness, they avoid challenging tasks with an unknown outcome. A growth mindset, on the other hand, is one in which people believe that the outcome can be modified in their favor, when they apply focused energy and hard work. It is a belief that one is in charge of one’s outcome, one is acting as a “creator” (Downing, 2011). Dweck (2011) explains the growth mindset:

There’s another mindset in which these traits are not simply a hand you’re dealt and have to live with, always trying to convince yourself and others that you have a royal flush when you’re secretly worried it’s a pair of tens. In this mindset,
the hand you’re dealt is just the starting point for development. This growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts (Dweck, 2011, p. 22).

Dweck and other researchers at Stanford University have developed a method of teaching children and adults how to acquire a “growth” mindset (from a “fixed” mindset). Dweck (2011) concludes her book with the following: “Did changing to a growth mindset solve all of my problems? No. But I know that I have a different life because of it—a richer one. And that I’m more alive, courageous, and open person because of it” (p. 574). Dweck’s theory relates to many community college students who have at-risk factors, such as low academic confidence, are first-generation, live in poverty, are not college-ready, and generally may not have been exposed to many people with a growth mindset. A fixed mindset may also help to explain one of the reasons for high student attrition:

Individuals may not necessarily be aware of their own mindset, but their mindset can still be discerned based on their behavior. It is especially evident in their reaction to failure. Fixed-mindset individuals dread failure because it is a negative statement on their basic abilities, while growth mindset individuals don’t mind failure as much because they realize their performance can be improved (Dweck, Wikepedia).

In a recent conference, the author of the On Course textbook, Skip Downing, indicated that he believed the first chapter, learning to choose the “creator” and not the “victim” role was the most important concept in the book. The creator role corresponds to the growth mindset, while the victim role corresponds to the fixed mindset. This
dissertation will attempt to answer whether the FYE course increases the growth mindset for first-year students.

The framework for this dissertation was Astin’s “Input-Environment-Output” (IEO) model used originally in the national Cooperative Institutional Research Study (CIRP) to study the effects of college. In order to more fully understand how college affected students, especially how different types of college experiences and different individual characteristics impacted students in varied ways, Astin controlled for student inputs and environmental influences which were believed to have an impact on outcomes. Astin (1977) defined these key variables as follows:

*Inputs* refer to the characteristics of the student at the time of initial entry to the institution; *environment* refers to the various programs, policies, faculty, peers, and educational experiences to which the student is exposed; and *outcomes* refers to the student’s characteristics *after* exposure to the environment. Change or growth in the student during college is determined by comparing outcome characteristics with input characteristics.

Chapter 3 offers a more complete description of the model and the input and environmental variables that were controlled in this study.

**Summary**

For decades, researchers have studied the impact of FYE courses on traditional success outcomes, such as graduation, retention, persistence, GPA, and student skills. This literature review captured much of the recent research on academic and affective student outcomes. While there is overwhelmingly positive evidence of the impact of an FYE course in study after study, a few found that there was no impact on student
success measures. Due to the lack of studies focusing on which content most significantly improved student outcomes, previous authors recommended drilling down to the content level. This is important since there is so much variability in how colleges and universities implement FYE courses. In this study, the researcher will specifically focus on the impact of Skip Downing’s OC curriculum at a small, rural community college. The limitation of many of the previous studies was primarily that the researchers did not control for the “volunteer effect,” i.e. students who chose to take the FYE course and whose performance increased, may have been more highly motivated in the first place. This dissertation will view student motivation through the lens of Duckworth’s grit theory and Dweck’s mindset theory. Duckworth’s grit theory explains success through a factor she calls “grit,” the ability to stay the course, and overcome barriers to reach a destination. Dweck’s mindset theory explains that people have either a fixed or growth mindset. The main characteristic associated with a fixed mindset is that one sees intelligence or ability as stable, and not able to be increased, regardless of effort. People with a growth mindset believe that with experience and practice, one can get better at doing something. In this context, that something is whether students can learn to adopt positive “studenting” skills. While we now understand more about the importance of the first year experience for students, we do not know enough about the impact of the FYE course on student motivation, a variable that can have lasting benefits. According to Mills (2010): “Persistence metrics, GPA, and credit completions are common performance outcomes in success course research. However, these are summative measures of complex interactions among student
characteristics, environmental attributes, and instructional experiences of which student success course participation is but one element” (p. 10). Which element deserves the most attention and resource allocation? Which element has the potential to have the longest lasting impact and help the student through to graduation? These are critical questions for FYE administrators and those interested in increasing student success in the first year and ones that this dissertation will seek to answer.
CHAPTER 3
Methodology

Study Overview

A mixed method design was followed in this dissertation in which both quantitative and qualitative tools were used to determine the impact of an FYE course on student motivation / grit. Several dependent variables were defined and studied:

1. Student motivation or “grit” through the Individual Attributes measure within SmarterMeasure™, a test offered by SmarterServices, LLC, denoted IA, as measured by a pre-test and post-test.

2. Student mindset (fixed vs. growth) through the “Locus of Control” within SmarterMeasure™, denoted LC, a subset of Individual Attributes also measured through a pre-test and post-test.

3. The change in IA as measured by the difference in the pre- and post-test scores, denoted IADIFF.

4. The change in LC as measured by the difference in the pre- and post-test scores, denoted LCDIFF.

First, descriptive and inferential statistical analyses helped to partially paint the picture of the impact of an FYE course on student motivation / attitudinal factors, using tools such as independent samples t-tests for means, Analysis of Variance (ANOVA), and Chi-square tests. Next, step-wise regression was used to identify significant variables in
predicting change in motivation for students who took the FYE course. Following Astin’s “Input-Environment-Output” (IEO) model to study college impact on student development, this study also used stepwise regression with a sample of new, credential-seeking students at North Central Michigan College, a community college in northern Michigan. The study controlled for differences in age, sex, enrollment status (part-time/full-time), developmental placement, and academic program. For regression, first semester GPA was added as a variable. Because a true random sample was not possible in this study, Astin’s IEO model was selected as the framework to try to understand the impact of the FYE course on student motivation and attitudinal skills, considering the above variables as the “input,” FYE course enrollment or not as an “environmental factor,” and the change in student motivation/attitudinal skills as the “output.” Finally, qualitative tools were used to paint a richer picture of the data and begin to more fully understand students’ expressed perceptions about the impact of the FYE course on their student skills and motivation. Three student focus groups were held with a total of 14 students. Interviews with the two lead faculty teaching the FYE course allowed for discussion about the findings as well as how well the curriculum might address the student outcomes studied.

The pre-and post-test tool used to measure student motivation/attitudinal skills was the Smartermeasure™, a validated objective assessment, already used as part of the standard enrollment process for new students. The pre-test score was collected as part of the enrollment process for all new students, and the post-test was administered by the author in a paper-and-pencil format in several courses with high new student
enrollment. Using only the “Individual Attributes” section of the Smartermeasure™, the following student attributes were assessed: level of motivation / grit, as measured by time management, willingness to seek help, procrastination, and locus of control / mindset (fixed vs. growth). Personal narratives of students and faculty, using qualitative tools, specifically focus groups and interviews, added richness to the study.

This dissertation will evaluate the value of the FYE course on increasing student motivation / “grit” (Duckworth) and “mindset” (Dweck) by comparing students who took the FYE course with students who did not. It will also seek to predict change in motivation / grit levels for students who have taken the FYE course, given a set of pre-determined coefficients. Ultimately, it will evaluate the effectiveness of the current curriculum in increasing student motivation / grit.

Research Site Selection: About North Central Michigan College

The study used quantitative and qualitative data from students at North Central Michigan College (North Central), a small rural community college located on Little Traverse Bay in Petoskey, Michigan. The author is employed at North Central as its Dean of Student Services. The site was selected because the college has been undergoing extensive assessment of its FYE course over the last several years, and the author has developed a special interest in this subject area. North Central was established in 1958 by a group of committed area citizens and is one of 28 Michigan community colleges. Fall 2011 enrollment was 2,959 students. It considers its service area to encompass the counties of Emmet, Charlevoix, Otsego, Cheboygan, and Presque Isle. While Petoskey is considered its main campus, it also operates two off-campus locations in nearby
Cheboygan and Otsego counties. Table 3 describes more fully the Fall 2011 enrollment profile.

Nearly two-thirds of the student body (64%) was made up of women and about one-third (36%) of men. Part-time students made up a majority of the population at 65% with full-time students making up the remaining 35%. 20% of the students in fall 2011 were new to North Central (FTIAC) and 80% were returning students. 7% of the student body was made up of dual enrolled students, and 3% lived in the on-campus residence hall. The student body was predominately White. Native Americans, particularly from the area’s Little Traverse Bay Bands of Odawa Indians, made up the largest minority group at 5%. The next largest group was Hispanic at 2%. Age distribution showed that the largest group on campus was represented by 18-19 year olds (20%), and the next-largest group was 19-21 year olds (14%).

Comparatively, North Central had a higher representation of Native American students (5%) than other rural northern Michigan community colleges, which ranged from .01% to 2% in 2011. The percentage range of Hispanic students was .08% to 3%, with North Central reporting a Hispanic population of 2%. The average percentage of full-time students was 10 percentage points higher at the comparative community colleges (46%) than at North Central (35%). The number of FTIAC students was similar, with 18% at the comparative community colleges and 20% at North Central. The ratio of male to female students was lower at North Central than the comparative community colleges, with 36% vs. 45% male students. Differences in student body composition
could be partially explained by different program offerings and different demographics within the greater population base.

Table 3: Fall 2011 Enrollment Profile at North Central Michigan College

<table>
<thead>
<tr>
<th>Type of Student</th>
<th>North Central: # of Students</th>
<th>Percentage</th>
<th>Comparative Community Colleges³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>1,889</td>
<td>64%</td>
<td>55%</td>
</tr>
<tr>
<td>Men</td>
<td>1,070</td>
<td>36%</td>
<td>45%</td>
</tr>
<tr>
<td>Total Full-Time</td>
<td>1,043</td>
<td>35%</td>
<td>46%</td>
</tr>
<tr>
<td>Total Part-Time</td>
<td>1,916</td>
<td>65%</td>
<td>54%</td>
</tr>
<tr>
<td>New in Fall 2011 (FTIAC)</td>
<td>614</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Returning from Previous Semesters</td>
<td>2,345</td>
<td>80%</td>
<td>82%</td>
</tr>
<tr>
<td>Dual Enrolled</td>
<td>205</td>
<td>7%</td>
<td>n/a</td>
</tr>
<tr>
<td>On Campus Residents</td>
<td>100</td>
<td>3%</td>
<td>n/a</td>
</tr>
<tr>
<td>Total FTE</td>
<td>1,553</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Ethnicity (Top 4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2,329</td>
<td>79%</td>
<td>82.80%</td>
</tr>
<tr>
<td>Unknown</td>
<td>346</td>
<td>12%</td>
<td>10.00%</td>
</tr>
<tr>
<td>Native American</td>
<td>150</td>
<td>5%</td>
<td>0.45%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>56</td>
<td>2%</td>
<td>1.01%</td>
</tr>
<tr>
<td>Age Distribution (Top 3 Groups)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-19</td>
<td>592</td>
<td>20%</td>
<td>n/a</td>
</tr>
<tr>
<td>20-21</td>
<td>400</td>
<td>14%</td>
<td>n/a</td>
</tr>
<tr>
<td>22-24</td>
<td>323</td>
<td>11%</td>
<td>n/a</td>
</tr>
<tr>
<td>Total Enrollment</td>
<td>2,959</td>
<td>n/a</td>
<td>2,663 (average)</td>
</tr>
</tbody>
</table>

(North Central Michigan College Registrar’s Office “Demographic Enrollment Profile,” and State of Michigan Workforce Development Agency “Data Book”)

North Central employs over 30 full-time faculty members, and over 90% have been trained in Skip Downing’s On Course principles through three on-campus professional development workshops. Instructors wishing to teach SD 125 were

³ The community colleges chosen for comparative purposes were Alpena, Bay, Kirtland, Northwestern Michigan and West Shore. An average percentage was calculated for the selected fields. The data was extracted from the 2010-2011 “Demographic Enrollment Profile (Data Book)” published by the State of Michigan Workforce Development Agency.
required to participate in one of the training sessions. Comparatively, in the 2009 National Survey of First-Year seminars, 890 institutions indicated that they offered an FYE course. About three-quarters responded that training was offered, and about half responded that it was required for instructors. Four-year institutions required training for their instructors at a higher rate (about ten percentage points higher) than community colleges (National Resource Center for the First Year Experience and Students in Transition, 2009).

In 2007, the college was awarded an Achieving the Dream⁴ grant and established an FYE course as one of its student success initiatives. After careful review of various curricula as well as reviewing previous similar courses the college already had offered, Skip Downing’s On Course curriculum was selected, and the FYE course was first offered in fall of 2009. 108 students enrolled in the course that first semester. In fall of 2011, 184 students enrolled in the course, representing an increase of 70%. It was a 3-credit course bearing college credit with solid transferability to universities in Michigan. Since the fall of 2009, the college has been collecting data on how SD 125 affected student success. Because of several positive indicators, including GPA, retention, and performance in other courses, SD 125 became required for developmentally–placed⁵ students within their first year of attendance in 2011. Since 2009, the college has

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⁴ “Achieving the Dream is a national reform network dedicated to community college student success and completion; focused primarily on helping low-income students and students of color complete their education and obtain market-valued credentials” (Achieving the Dream, 2012).

⁵ Developmentally-placed students refers to entering students who place below college-level coursework. Standardized tests, such as the ACT or COMPASS are used for mandatory placement.
continually monitored the impact of the course on student success, collecting quantitative and qualitative data. Data demonstrated that students who took the course had higher GPAs and persistence to next semester than students who did not. The persistence for students taking linked courses (FYE with a developmental English class) was extremely high. These success indicators, however, were not long lasting, and the difference between students who had taken and those who had not taken an FYE course became indistinguishable over time as measured by GPA and retention (comparing only students who were still enrolled). However, qualitative data gathered from frequent focus groups and student surveys indicated strong support for the course. Students used words, such as “life-changing” and “transformational” to describe the impact of the course on their lives. Students also strongly recommend that every new student should have the opportunity to take the course. The lack of long-term impact coupled with the positive student perceptions led the author to become interested in studying student outcomes other than GPA or persistence, specifically, the areas of motivation and “grit.”

**Research Framework: Astin’s Input-Environment-Output (IEO) Model**

Astin (1977) developed the groundbreaking “Input-Environment-Output” (IEO) model to determine how college affected students, specifically, how different college environments affected student development, which formed the basis of the Cooperative Institutional Research Program (CIRP) study. Astin (1977) stated that “the real issue is not the impact of college but the impact of college characteristics (emphasis in text) or, more precisely, the comparative impact of different collegiate experiences” (p. 7). Astin (1977) added that in typical pre-test, post-test designs students completed a
pre-test at the beginning of college. The researchers followed that up with a post-test at a specified time, either at graduation or at another pre-determined time to match the selected outcomes. It was then assumed that any change between pre- and post-tests were the result of college attendance. The question that was not able to be answered sufficiently prior to the IEO model was whether that same amount of change would have occurred if students had not attended college. Astin argued: “the major weakness of this approach is that it fails to consider whether the same changes would have occurred if the students had attended different colleges or had not gone to college at all” (p. 6).

The IEO model used by Astin controlled for varied student inputs and environmental influences that had an impact on the outcomes. Astin (1977) defined these key variables as follows:

*Inputs* refer to the characteristics of the student at the time of initial entry to the institution; *environment* refers to the various programs, policies, faculty, peers, and educational experiences to which the student is exposed; and *outcomes* refers to the student’s characteristics *after* exposure to the environment. Change or growth in the student during college is determined by comparing outcome characteristics with input characteristics. The basic purpose of the model is to assess the impact of various environmental experiences by determining whether students grow or change differently under varying environmental conditions (p. 7).
This dissertation followed the basic design of Astin’s IEO model in that it was assumed that controlling as many input and environmental variables as possible would result in a clearer picture of the reasons for varied student outcomes impacting student motivation / “grit.” There will also be some significant changes from the original study: it will employ a much smaller sample of students at one institution, with a smaller number of input and environmental variables over a shorter period of time (one semester vs. four years). Environmental variables will not differ in the sense that they did in the CIRP study in that students at only one institution will be studied. The premise, however, was the same as it was for the national study: how do results in student skills / motivation (output) differ for students with varied characteristics (input) and different environmental factors (FYE or not)?

Lang (2006), in his study of the impact of FYE courses on academic outcomes, wrote that the IEO model was neither applicable to single-institution studies nor able to predict student academic outcomes, such as persistence. He indicated that this was one
reason that Tinto developed his model of predicting student departure. This dissertation has the potential to either confirm or dispute Lang’s analysis and open the door to others using the IEO model in single-institution studies. If this study is successful in using the IEO model to study change in student motivation brought on by FYE course enrollment at a single institution, the applicability of Astin’s model may be even greater than was initially thought.

![Diagram](image)

*Figure 2: Conceptual Model of Quantitative Analyses*

**Research Method / Data Collection**

As described in Figure 2, multiple groups of students were studied; at first, all students in the sample regardless of their FYE enrollment and next, FYE students only compared with non-FYE students. The critical comparison for this study was between students who had and those who had not taken the FYE course. The first step, in which all students in the sample were analyzed, provided a general sense of what might be expected from the overall sample.
Smartermeasure™ scores for the “Individual Attributes” (IA) section, one of seven available assessments, were collected from the Admissions Office for new, credential-seeking students who entered in Fall 2011 or Winter 2012. The Smartermeasure™ is routinely collected as part of the admissions process for new, credential-seeking students and scores at entry for the “IA” section constituted the pre-test for student motivation. Other input measures were retrieved from the student information system for each student in the sample, including age, sex, enrollment status (full-time vs. part-time), college readiness (developmental or college-ready, based on ACT or COMPASS scores), and academic program. After all of the information was collated, the student name was removed to maintain the privacy of records. The post-test was administered during the final phase of students’ first semester of attendance; during the 14th – 16th weeks of either the fall or winter semesters. The difference between pre-test and post-test Smartermeasure™ scores (for “Individual Attributes”) was then evaluated for all students (including the subgroups of students who did and did not take the FYE course) using descriptive and inferential statistics (independent samples t-test, Analysis of Variance (ANOVA) and Chi-squared tests). Stepwise regression was also applied to analyze the impact of the different variables on predicting the change in pre-and post IA score for students who took the FYE course. First-semester college GPA was added as an input variable at this stage. The author provided a redacted Excel spreadsheet to the Institutional Research (IR) Director with all the pertinent student information. According to Vogt (2007), regression is the most commonly used statistical tool in the social sciences, particularly when one wants to
establish relationships between multiple variables. “Regression happens when the independent variable does not totally predict or explain the dependent variable (Vogt, 2007, p. 145). In this case, it was assumed that enrollment in an FYE course did not fully explain anticipated changes in student motivation / attitudinal outcomes. Other factors, such as age, sex, developmental status, and first-semester GPA (in regression) were assumed to also have an impact. The basic question that this regression helped to answer was, “How much better can one predict changes in student motivation (DV) for students enrolled in an FYE course (IV), controlling for certain variables?” (Vogt, 2007). Significant coefficients were noted in the analysis. A threshold of .05 was used to establish statistical significance. According to Vogt (2007), this is the generally recognized standard for significance. SPSS version 20 for Macs was used to analyze the data.

To further evaluate the students’ change in locus of control / fixed vs. growth mindset (Dweck), Smartermeasure™ staff were asked to retrieve the pre-and post-test scores for the following subset of questions, which had been validated to measure that aspect of interest:

Q. 5   I think some people are naturally more intelligent than others.
Q. 14  I feel that chance has a lot to do with being successful.
Q. 17  I agree that school success is mostly a result of one’s socio-economic background.
Q. 24  I feel that if I set realistic goals I can succeed no matter what.

The Locus of Control (LC) results were analyzed using the same statistical processes that were used for the IA section described above.
Research subjects / participant selection.

A sample of 164 new credential-seeking students enrolled in Fall 2011 or Winter 2012 at North Central agreed to participate in the study. Dual enrolled, direct credit (high school), previously enrolled or transfer students were excluded from the sample. These strict criteria were upheld to attempt to isolate the impact of SD 125 as much as possible and excluded 227 students for whom a post-Smartermeasure™ score was collected.

For the fall semester (n=127 students), the sample contained 52% women and 48% men, which represented a slightly different ratio than the fall student body, which was 64% women and 36% men. 69% of the sample attended part-time and 31% attended full-time; which closely matched the overall ratio of 65% part-time and 35% full-time. 63% of the sample enrolled in the FYE course. The majority (69%) placed into level 2 English (considered to be developmental) and levels 2 (38%) and three (26%) math. Level 2 is considered to be developmental, and level 3 is the first college-level course (MTH 111, Beginning Algebra). Half of the students reported that they were pursuing a transfer degree (Associate of Arts, Science or General Studies); while 30% indicated they were pursuing an Associate of Applied Science degree. Table 4 also provides these descriptive statistics.
Table 4: Fall 2011 Sample Characteristics: \(^6\) n=127

<table>
<thead>
<tr>
<th>Category</th>
<th>Count (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>66 (52%)</td>
</tr>
<tr>
<td>Men</td>
<td>61 (48%)</td>
</tr>
<tr>
<td>Full-time</td>
<td>88 (69%)</td>
</tr>
<tr>
<td>Part-time</td>
<td>39 (31%)</td>
</tr>
<tr>
<td>SD 125 Yes</td>
<td>80 (61%)</td>
</tr>
<tr>
<td>SD 125 No</td>
<td>47 (37%)</td>
</tr>
<tr>
<td>ENG 090 (level 1)</td>
<td>16 (13%)</td>
</tr>
<tr>
<td>ENG 095 (level 2)</td>
<td>88 (69%)</td>
</tr>
<tr>
<td>ENG 111 (level 3)</td>
<td>23 (18%)</td>
</tr>
<tr>
<td>MATH 090 (level 1)</td>
<td>21 (17%)</td>
</tr>
<tr>
<td>MATH 096 (level 2)</td>
<td>49 (38%)</td>
</tr>
<tr>
<td>MATH 111 (level 3)</td>
<td>33 (26%)</td>
</tr>
<tr>
<td>MATH 113 (level 4) +</td>
<td>24 (19%)</td>
</tr>
<tr>
<td>Certificates</td>
<td>25 (20%)</td>
</tr>
<tr>
<td>Associate of Applied Science</td>
<td>39 (30%)</td>
</tr>
<tr>
<td>AA, AS, AGS</td>
<td>63 (50%)</td>
</tr>
<tr>
<td>Daytime SD</td>
<td>57</td>
</tr>
<tr>
<td>Evening SD</td>
<td>23</td>
</tr>
<tr>
<td>Off-campus</td>
<td>27 (21%)</td>
</tr>
<tr>
<td>On-campus</td>
<td>100 (79%)</td>
</tr>
<tr>
<td>Mean Age</td>
<td>22</td>
</tr>
<tr>
<td>Median</td>
<td>20</td>
</tr>
<tr>
<td>Mode</td>
<td>19</td>
</tr>
</tbody>
</table>

For the winter semester (n=37), the sample contained 68% women and 32% men, which represented a slightly different ratio than the fall student body, which was 64% women and 36% men. 46% of the sample attended part-time and 54% attended full-time; which was slightly different than the overall ratio of 65% part-time and 35%

\(^6\) 312 students were given the post-test Smartermeasure™; 183 did not meet criteria of first-time North Central students in fall; and 2 were not found in system (likely due to early withdrawal); 22 classes were visited to conduct Post-Smartermeasure™ survey: 10 off-campus; 12 on-campus.
full-time. 81% of the sample enrolled in the FYE course. The majority placed into
developmental English (79%) or developmental math (73%). Almost half of the students
(46%) reported that they were pursuing a transfer degree (Associate of Arts, Science or
General Studies); while 35% indicated they were pursuing an Associate of Applied
Science degree. Table 5 also presents these descriptive statistics.

Table 5: Winter 2012 Sample Characteristics\(^7\); n=37

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>25</td>
<td>68%</td>
</tr>
<tr>
<td>Men</td>
<td>12</td>
<td>32%</td>
</tr>
<tr>
<td>Full-time</td>
<td>20</td>
<td>54%</td>
</tr>
<tr>
<td>Part-time</td>
<td>17</td>
<td>46%</td>
</tr>
<tr>
<td>SD 125 Yes</td>
<td>30</td>
<td>81%</td>
</tr>
<tr>
<td>SD 125 No</td>
<td>7</td>
<td>19%</td>
</tr>
<tr>
<td>ENG 090 (level 1)</td>
<td>8</td>
<td>22%</td>
</tr>
<tr>
<td>ENG 095 (level 2)</td>
<td>21</td>
<td>57%</td>
</tr>
<tr>
<td>ENG 111 (level 3)</td>
<td>8</td>
<td>21%</td>
</tr>
<tr>
<td>MATH 090 (level 1)</td>
<td>14</td>
<td>38%</td>
</tr>
<tr>
<td>MATH 096 (level 2)</td>
<td>13</td>
<td>35%</td>
</tr>
<tr>
<td>MATH 111 (level 3)</td>
<td>7</td>
<td>19%</td>
</tr>
<tr>
<td>MATH 113 (level 4) +</td>
<td>3</td>
<td>8%</td>
</tr>
<tr>
<td>Certificates</td>
<td>7</td>
<td>19%</td>
</tr>
<tr>
<td>Associate of Applied Science</td>
<td>13</td>
<td>35%</td>
</tr>
<tr>
<td>AA, AS, AGS</td>
<td>17</td>
<td>46%</td>
</tr>
<tr>
<td>Daytime SD</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Evening SD</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Off-campus</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>On-campus</td>
<td>33</td>
<td>89%</td>
</tr>
<tr>
<td>Mean Age</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

\(^7\) 89 students were given the post-test Smartermeasure\(^\text{TM}\); 47 did not meet criteria of first-time
North Central students in winter; 4 had no pre-test Smartermeasure\(^\text{TM}\) score in system, and 1
was not found in system (likely due to early withdrawal); 12 classes visited to conduct Post-
Smartermeasure\(^\text{TM}\) survey: 1 off-campus; 11 on-campus
Only new, credential-seeking students with Smartermeasure™ pre- and post-test scores were included in the analysis. In order to conduct the post-test, the Registrar provided a list of courses in which new credential-seeking students were enrolled for the fall and winter semesters. The list was sorted to determine courses in which a sufficient number of new students were enrolled to provide a sufficiently large overall sample. The faculty teaching those courses (with a large number of new credential-seeking students) were identified and contacted by email. Permission was requested and obtained to go into the classes to administer the paper-and pencil post-test (Smartermeasure™: Individual Traits) between the 14th and 16th weeks of the fall and winter semesters. In the winter semester, it proved to be much more difficult to find large groups of new students who met the sample criteria and were in common classes. This challenge, as well as the simple fact that there were fewer new students who began in the winter semester, partially explains the lower sample size for winter. For this reason, the statistical analyses were done combining data for the fall and winter semesters.

Instrumentation.

The Smartermeasure™ assessment has been an AtD initiative to increase student success and is required of all new, credential-seeking students prior to enrolling. It is currently used to aid in the advising process. According to the Smartermeasure™ website, it is used by more than 300 colleges / universities, primarily as a test of learner readiness in an online and technology-rich classroom. Case studies on the website provide examples of colleges that are using the test to aid in increasing student success,
by linking struggling students with remediation or support to increase learner readiness. Middlesex Community College, for example, was able to decrease its online course failure rates, which were 6%-13% higher than for comparable on-ground sections by requiring the Smartermeasure™ assessment of its online students (SmarterServices, 2012). Students were only advised (not mandated) about their readiness for online learning and were given resources to increase their level of competence. The Smartermeasure™ uses self-reported answers in the following areas: life factors, individual attributes, learning styles, reading rate and recall, technical competency, technical knowledge and typing speed / accuracy. The web-based Smartermeasure™ is available on a secure portal, accessible by student ID number and password. Students can complete it from any computer with Internet access. The Smartermeasure™ is untimed but typically takes students 30-40 minutes to complete. This research project focused on only the “IA” section, which takes approximately 10 minutes to complete and has 24 Likert-scale questions. Locus of Control is a subset of the IA section. The questions are available in Appendix A.

The author requested and received the scores of the “IA” section for new, degree-and certificate-seeking students enrolled at the college from the fall 2011 and winter semester 2012 from the Admissions Office. This was considered the pre-test. It was provided electronically in an Excel spreadsheet. To collect post-test data, students in pre-identified courses (based on number of new students in classes) signed a student release form, and then completed the 24-question “IA” section in a paper-and pencil version. The author received permission from Smartermeasure™ to administer the test
in a paper-and pencil version. Scores were then input into a special site hosted by Smartermeasure™. Finally, a report was generated by Smartermeasure™ staff which compiled all of the post-test scores and could be downloaded by the author. After inputting and matching pre-and post-test scores, four specific questions related to locus of control / “mindset” were disaggregated with the help of Smartermeasure™ staff. This resulted in an ability to zero in on any change in locus of control / “mindset” (Dweck, 2011).

After student pre- and post-tests were collected, demographic information and placement scores (ACT or COMPASS) were retrieved from the student information system (Jenzabar) and added to each student’s record. The author collected this information prior to removing names from each individual record to maintain student privacy.

**Explanation of variables.**

This dissertation controlled for enrollment status (part-time/full-time), college readiness (developmental / college-ready), pre-FYE motivation (as measured by the pre-Smartermeasure™ score), sex, age, and academic program. First semester college GPA was added as a variable for the regression analyses. The variables were selected based on the literature review of other similar studies. Variables common to most other studies include gender and race [(Tinney & Dillon (n.d.); Glass & Garrett (1995); Fidler (1991); Green (1998)]; ACT score or high school performance [(Tinney & Dillon (n.d.); Schnell & Doetkott (2003); Green (1998); Montgomery, Jeffs, Schlegel & Jones (2009)].
Limited studies also considered financial aid status (Tinney & Dillon [n.d.]). For this study, financial aid information was not used since all financial aid information is stored on a different system, making it prohibitive to access and tie to the students in the sample. Additionally, minorities make up such a small portion of the student body, it was decided to not control for race.

North Central operates satellite sites in Gaylord and Cheboygan, in addition to its main campus in Petoskey. Students at all three locations participated in the study. Focus groups were conducted on campus but were open to students who enrolled in the FYE course at another location. Student samples were collected during the 2011-12 academic year. Additional faculty interviews were conducted during the 2012-13 year. The pre-test “Smartermeasur™” could be completed from any computer with Internet access through a secure student portal. Post-test data was collected from students at the main campus as well as the college’s satellite locations in Gaylord and Cheboygan in identified classes with high numbers of new students.

**Qualitative Methods**

In order to add richness to the quantitative data to more clearly understand the student experiences and begin to holistically evaluate the effectiveness of the course in increasing student motivation, qualitative tools were used. Specifically, one-on-one faculty interviews and student focus groups were held during the 2011-12 and 2012-13 year.

- Faculty interviews: Two lead faculty who regularly taught the FYE course were interviewed to assist in gathering evidence to evaluate the course’s impact on
student motivation / grit. The questions were sent to the faculty in advance of the one-hour interview. This data collection occurred in April, 2013.

- Focus groups: Students who had completed the FYE course in the fall 2011 semester were informed of an opportunity to participate in a focus group (by email) to discuss the components of the FYE course which they believed to be of greatest value in their persistence and success as college students. Focus group participants were offered $20 for their participation (through the college’s Achieving the Dream grant) and the sessions lasted approximately 90 minutes. Two sessions were video-recorded and one was not, due to technical difficulties. Transcripts of each were made for further analysis. The author held the focus groups and upon completion, reviewed the transcripts for themes that were discussed during the conversations. These findings will be presented in chapter 4.

**Research Questions / Hypotheses**

The goal of this study was to measure and compare effects on selected student motivational characteristics, and in particular, changes in grit / mindset of students who participated and didn’t participate in an FYE course, using a pre-post test design.

According to Cuseo (n.d),

> Whereas outcomes assessment is merely *descriptive*, (emphasis in text) i.e., simply describing what students are like at graduation, value-added assessment has the potential for providing information that is causal-suggesting that the college experience, or some element thereof, has produced or caused positive
changes in student development that would not have otherwise taken place (p. 18).

Specifically, the working hypotheses of this study are that, in comparison to students who do not enroll in the FYE course, students who enrolled in the course will show measurable change in the following areas:

1. Student perception of their persistence / level of “grit”
   - Student perception of their time management skill / level of “grit”
   - Student perception of their willingness to seek help / level of “grit”
   - Student attitude with respect to procrastination / level of “grit” (decrease)

2. Student mindset / locus of control (change from “fixed” to “growth”)

Limitations and Delimitations of the Study

While the author made every attempt to conduct a study of the highest integrity and usefulness to North Central and other community colleges, there were several limitations and delimitations. Limitations are conditions outside of the author’s purview that may have affected the outcomes. Delimitations are conditions that this researcher has placed on the study that could also affect the outcomes. The generalizability of any study is affected by its limitations and delimitations (Ferris State University Dissertation Guide, 2012).

- Limited generalizability: The relatively small sample size and the homogeneity stemming from the fact that students attended a single institution are limitations
of the study. Generalization, or application of the findings to other community colleges should be done cautiously.

- Narrow set of student outcomes: This study looked at a narrow set of outcomes in the area of student skills / motivation, and did not include most of the widely studied outcomes of academic success discussed in chapter two, such as GPA or retention. GPA was added for the regression analyses to see how it affected change in motivation / attitudinal skills. This may be a limitation to the value of the study in growing the existing body of FYE research on academic outcomes. According to Terenzini and Reason (2005), “with few exceptions studies of college effects on students have adopted an overly narrow conceptual focus, concentrating on only a comparative handful of factors at a time” (p. 5).

- Applying the IEO model to a smaller sample: Applying Astin’s IEO model, which was developed to control for a large number of variables and used a very large national sample of students and institutions for the CIRP study, may result in a mismatch of tool to study. Lang (2006) advised against using this model for single-institution studies. It remains to be seen if the results bear out this limitation.

- Short time span between pre-and post-test: The post-test was conducted one semester after the student’s enrollment, which is a very abbreviated time span to study student growth. This time span was selected to most closely match the length of the FYE course, however, it could be argued that student development and change in motivation / student skills generally occurs over more than one
semester. Other studies (e.g. Rutschow, Cullinan & Welbeck, 2012) found similar limitations. In a study by Barton and Donahue (2009) using the same timeframe, researchers found no different impact on intellectual development (using the Perry intellectual development test) for students who had taken a 4-credit FYE course vs. students who took a 1-credit FYE course.

• Multiple initiatives during first year: The importance of the first year has been argued by multiple practitioners, including Cuseo (1996), McClenney (2011), and Upcraft, Gardner and Barefoot (2005). Recognizing this, North Central has implemented many success initiatives targeted at the first year. Attributing any change in student motivation / student skills specifically to enrollment in an FYE course may be subject to criticism as the course represents just one element of the package of success initiatives being leveraged in the first year to increase success rates of students.

• Limited variables: It was determined by the author that since the proportion of minority students was so small (3%), race would not be controlled. The same was true for on-campus housing status (3%). Also, though financial aid was a widely used variable in other studies, access to financial aid data (which is stored on another system) was prohibitive. High school transcripts are not regularly collected for admission to the college, so high school rank and size of class were not available to this author.

• Smartermeasure™ assessment: While Smartermeasure™ assessment is used at North Central for all new students in the advising process, it is used at other
colleges more specifically for students taking online or technology-rich courses. The overall assessment may be skewed towards a technology-rich environment, which may have impacted the pre-test scores. However, the “Individual Attributes” section, the section which was offered to students in a post-test, was not aimed at technological factors and as the name implies, focused on attributes which influenced the individual student. Additionally, the testing environment for the Smartermeasure™ in both pre-and post-tests could have affected the validity of the test scores. The Smartermeasure™ was made available to students on their individual “portal” during the enrollment process, which allowed access to the test from any computer / device with Internet access. Testing conditions and ability to focus on the questions at hand could have been compromised during the pre-test. It was determined that to collect a sufficient number of post-test surveys, the test would be administered in a paper-and-pencil version. This, however, could have also affected the accuracy of responses given by students, as the author was present during this data collection. Also, because the post-test did not look like the pre-test, students may not have understood that both tests were actually the same.

• Researcher bias: The author has been involved in the creation of the FYE course and the selection of the On Course curriculum for the duration of the AtD grant. She has participated in several On Course trainings and advocated for the institutional policy that all developmentally placed students were required to
enroll in the FYE course. This lens may have impacted her perspective when conducting focus groups or reviewing data.

- Self-reported data: Previous studies, such as Shechtman, DeBarger, Dornsife, Rosier, and Yarnall, (2013) highlighted that self-evaluations may be inaccurate. The authors stated that “people are not always valid assessors of their skills” (p. ix). Both the pre-and post-test scores used for this study were based on student self-assessments, potentially providing inaccurate data.

- Previous researchers have indicated that there are notable differences between students who began in the fall and winter semesters (e.g. Hall, 2007; Tharp, 1998). These differences are likely related to the fact that students who began in the winter, were involved in other activities in the fall, either through procrastination of admissions and enrollment tasks or personal choice (e.g. lack of readiness to begin college). These choices likely impacted their college experience. This study includes students who began in the fall and in the winter (spring) semester and treated them equally.

Summary

This study sought to determine the effects of an FYE course on student motivation / grit through Duckworth’s “grit” and Dweck’s “mindset” theoretical models. The author applied Astin’s IEO statistical model to study the impact of taking an FYE course on student motivation while controlling for various input and environmental variables. Chapter 3 discussed the details of how this study was performed and specifically addressed the research method, framework, participant and site selection,
instrumentation and the limitations and delimitations of the study. As far as the author could tell, the application of Astin’s IEO model was yet untested for single institution studies but was selected because of the ability to identify direct, potentially strong causal relationships between inputs and outputs. The dissertation sought to extend the research on the impact of FYE courses beyond the previously widely studied academic outcomes, such as GPA and persistence to study impact on student motivation.

Motivation is an intriguing area of study and can have lasting impact on student success beyond performance in specific classes. According to Dweck (1986): “In fact, one of the things that makes the study of motivation particularly intriguing is that measures of children’s actual competence do not strongly predict their confidence or future attainment” (p. 1043). While Dweck has done several studies to test change in mindset in children (from fixed to growth), Stanford University is currently piloting a study of teaching the growth mindset for college students. North Central is one of the pilot sites for that study. The findings of this study could advance the research on FYE courses and specifically, the research on how FYE courses impact affective skills, such as motivation and mindset.
CHAPTER 4
Findings and Results

This study sought to determine the impact of a 3-credit FYE course on selected student attitudes and motivation. Using quantitative and qualitative data collection methods, the author attempted to isolate the impact of the FYE course on student motivation. Pre-test data, post-test data, and focus-group results were collected from students and FYE faculty. Student demographic variables, including sex, age, placement level, enrollment status, and type of program, were controlled. Applying Astin’s IEO model to a single institution allowed for the impact of the FYE course (environment) and the input factors to be isolated when observing the outcomes and proved to be an innovative use of the model. Previously, the IEO model had been applied to multi-institutional studies. Several dependent variables were defined and studied:

1. Students’ motivation or “grit” through the Individual Attributes measure within SmarterMeasure™, a test offered by SmarterServices, LLC, denoted IA, as measured by a pre-test and post-test.

2. Students’ mindset (fixed vs. growth) through the “Locus of Control” within SmarterMeasure™, denoted LC, a subset of Individual Attributes also measured through a pre-test and post-test.

3. The change in IA as measured by the difference in the pre- and post-test scores, denoted IADIFF.
4. The change in LC as measured by the difference in the pre- and post-test scores, denoted LCDIFF. The variables IA and LC were tested with the same methods, including an independent samples t-test for means, Analysis of Variance (ANOVA), Chi-square, and step-wise linear regression.

Summary of Results

- There was no significant difference in mean IA between the pre- and post-test results. This lack of difference held for all students, those that enrolled in SD 125 (FYE course) and didn’t enroll in SD 125 (FYE course). There was, however, an increase in mean LC pre- vs. post-test scores, for all students and for those who took SD 125.

- The Analyses of Variance showed one significant categorical variable for IADIFF (Age), but none for LCDIFF. Overall, there was not a great deal of difference in the pre- and post-test mean scores for either variable.

- The step-wise regressions revealed just one significant predictor for IADIFF (Term GPA) and two for LCDIFF (Age and one math placement level). In neither case was any multi-collinearity among the independent variables found.

- Chi square analyses showed some significant differences in the distributions of pre- and post-test scores for LC. The distributions of IA were not different.

- Chi square analyses showed some significant differences in the distributions of IADIFF and LCDIFF when comparing SD and non-SD 125 students.
• Qualitative data collection occurred through focus groups in which many students spoke very positively about the influence of the FYE course on their motivation, on their resourcefulness, and on their confidence levels as students. Students expressed that both their instructors and their peers were sources of support. A few students reported that their incoming levels of motivation were already high and taking the course did not increase their motivation further.

**Individual Attributes Pre-Post-Test Distribution: Difference of Means**

All of the statistical analyses in this first section were designed to answer question 1 and its subsections: Does the student’s attitude of persistence / level of “grit” increase after taking the FYE course?

- Does the student’s perception of their time management skill / level of “grit” measurably increase after taking the FYE course?

- Does the student’s perception of their willingness to seek help / level of “grit” measurably increase after taking the FYE course?

- Does the student’s attitude of procrastination / level of “grit” measurably decrease after taking the FYE course?

As a starting point, the difference of the means of the pre- and post-test results for “Individual Attributes” (IA) was examined with an independent samples t-test. This first test did not discriminate between those who took SD 125 and those who did not. The results below (Table 6) show that there is no difference in mean scores for the pre- and post-test results, in the aggregate.
Next, the difference in pre- and post-test scores was compared just for those students who took SD 125. This group consisted of 108 of the 164 total students. The results were similar to those for the entire group, as shown in Table 7 below.

**Table 6: Difference of Means for Individual Attributes (IA)**

<table>
<thead>
<tr>
<th>Group Statistics</th>
<th>Pre-Post</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>Pre</td>
<td>164</td>
<td>75.307</td>
<td>6.51071</td>
<td>.50840</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>164</td>
<td>74.5876</td>
<td>8.28032</td>
<td>.64658</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IA</th>
<th>Levene’s test for equality of variance</th>
<th>t-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumption</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>Equal variances</td>
<td>7.492</td>
<td>.007</td>
</tr>
<tr>
<td>Unequal variances</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Levene’s test showed that the variances of the pre and post groups were different, however the significance value from the t-test, (p=0.382), showed no difference in the means.

**Table 7: Difference of Means for Individual Attributes (IA) for SD 125 Students**

<table>
<thead>
<tr>
<th>Group Statistics</th>
<th>Pre post</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>Pre</td>
<td>108</td>
<td>74.8782</td>
<td>6.72939</td>
<td>.64754</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>108</td>
<td>74.3251</td>
<td>8.09063</td>
<td>.77852</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IA</th>
<th>Levene’s test for equality of variance</th>
<th>t-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumption</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>Equal variances</td>
<td>2.446</td>
<td>.119</td>
</tr>
<tr>
<td>Unequal variances</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In this case, Levene’s test showed no difference in the variances of the two groups. The t-test result indicated no difference in the mean scores \( p = 0.585 \).

Because one purpose of this study was to isolate the factors, if any, that may cause a difference in means of the pre- and post-test results, a new variable, IADIFF, the difference between the post- and pre-test results \( \text{post-test IA minus pre-test IA} \) was established. It was found that IADIFF was both positive and negative, indicating that the “improvement” in IA over the course of the semester could, in fact, be the opposite—a drop in performance. This is shown by the following graph, Figure 3, that shows the distribution of IADIFF.

![Distribution of IADIFF](image)

**Figure 3: Distribution of IADIFF for All Students**

IADIFF appears to be, approximately, equally likely to be positive (an improvement) as negative (a drop in performance). This result will be explored in the next chapter.
The difference in means of IADIFF was examined. As shown in Table 8 below, there was no significant difference in the means of students who took and didn’t take SD 125.

**Table 8: Difference of Means for IADIFF for SD 125 and Non-SD 125 Students**

<table>
<thead>
<tr>
<th>Group Statistics</th>
<th>SD125</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>IADIFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y, took</td>
<td>108</td>
<td></td>
<td>-0.5531</td>
<td>7.16213</td>
<td>.68918</td>
</tr>
<tr>
<td>N, didn’t take</td>
<td>56</td>
<td></td>
<td>-1.0402</td>
<td>7.55656</td>
<td>1.00979</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IADIFF</th>
<th>Levene’s test for equality of variance</th>
<th>t-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumption</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>Equal variances</td>
<td>.284</td>
<td>.595</td>
</tr>
<tr>
<td>Unequal variances</td>
<td>.398</td>
<td>106.314</td>
</tr>
</tbody>
</table>

Levene’s test showed no difference in the two groups’ variance (p = 0.595). The t-test results showed no difference in IADIFF between the two groups, with p = 0.686.

Notably, the means for both groups are negative, indicating, overall, that the post-test results are lower than those of the pre-test although, given that IA is on a scale of 0 to 100, IADIFF is only very slightly negative (~ -1.0).

Figure 4 shows the distribution of IADIFF for students who took SD 125 and those who didn’t. There appears to be a significant difference in the distribution of IADIFF for students who took and who didn’t take SD 125. The largest difference in IADIFF distribution between SD 125 and non-SD 125 students is in the following score distributions: +5 to +10 (10.71% non-SD vs. 20.37 for SD students) and +10 to +15 (7.14% non-SD vs. 3.7% for SD students).
Analysis of Variance (ANOVA).

In addition to the t-test, a series of Analysis of Variance (ANOVA) tests were performed to determine if any categorical variables had a significant effect on IADIFF. Only one, Age, was found to be significant, as shown in Table 9 below:

Table 9: ANOVA: Age as Significant Variable

<table>
<thead>
<tr>
<th>IADIFF</th>
<th>Groups (years)</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Bound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 22</td>
<td>83</td>
<td>-1.6000</td>
<td>6.81652</td>
<td>.74821</td>
<td>-3.0884</td>
<td>-.1116</td>
<td>-21.88</td>
<td>10.42</td>
</tr>
<tr>
<td>23 – 29</td>
<td>12</td>
<td>.3483</td>
<td>7.92507</td>
<td>2.28777</td>
<td>-4.6870</td>
<td>5.3837</td>
<td>-19.79</td>
<td>8.33</td>
</tr>
<tr>
<td>≥ 30</td>
<td>13</td>
<td>5.2985</td>
<td>6.06787</td>
<td>1.68292</td>
<td>1.6317</td>
<td>8.9652</td>
<td>-1.04</td>
<td>17.71</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>-0.5531</td>
<td>7.16213</td>
<td>.68918</td>
<td>-1.9194</td>
<td>.8131</td>
<td>-21.88</td>
<td>17.71</td>
</tr>
</tbody>
</table>
### ANOVA

<table>
<thead>
<tr>
<th>IADIFF</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>545.849</td>
<td>2</td>
<td>272.924</td>
<td>5.798</td>
<td>.004</td>
</tr>
<tr>
<td>Within Groups</td>
<td>4942.827</td>
<td>105</td>
<td>47.075</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5488.676</td>
<td>107</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The difference among the three age groups is highly significant. No other variables were found to be significant, including developmental placement, full-/part-time status, or gender.

To isolate the difference among the age groups, a multiple comparison test (Tukey’s HSD = 6.73) was performed, as shown below, indicating that the difference between the oldest group (≥ 30) and the youngest (≤ 22) is driving the ANOVA results.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 22</td>
<td>-1.60</td>
</tr>
<tr>
<td>23—29</td>
<td>0.34</td>
</tr>
<tr>
<td>≥ 30</td>
<td>5.29</td>
</tr>
</tbody>
</table>

While this suggests that the two oldest groups have the highest performers, it should be noted that there are only 12 and 13 students, respectively, in these two groups. That, plus the fact that the groups are of unequal size, dictates caution in drawing any conclusions.

**Non-parametric analysis.**

As mentioned earlier, the distribution of IADIFF was such that some students’ scores increased over the semester, while others’ decreased, although the mean value indicated an average drop in score. To explore this further, the distribution of pre- and post-test scores was studied.
The following graph (Figure 5) shows the pre- and post-distribution of IA scores, as divided into three categories: low (≤ 69), medium (70 - 84) and high (≥ 85), categories suggested by the creators of the SmarterMeasure™ test and shows the distribution of IA scores from the pre- and post-tests for all students, regardless if they took SD 125 or not.

**Figure 5: Distribution of IA scores by Ranges for all Students**

As can be seen, there is little observable difference in the distributions of the pre and post scores. Performing a Chi-square test on these distributions substantiates the lack of observable difference with an overall $p = 0.215$, indicating that the post-test distribution is not significantly different than that of the pre-test.

Isolating the distribution to just those students who completed SD 125, results in the following similarly appearing graph (Figure 6):
A Chi-square analysis indicated that the post-test results did not differ significantly from those of the pre-test ($p = 0.871$). There appears to be very little movement among the performance categories from the pre- to the post-test results.

A similar analysis was done for the group of students who did not take SD 125, as shown in the graph (Figure 7) below:
In this case, there is more observable difference in the distributions than with the two previous groups; the movement of scores appears to be primarily associated with the lowest performing group, which increased in size from pre to post. A Chi-square analysis showed significance ($p = 0.027$), indicating that post-test results’ distribution is different than the pre-tests’, for students who did not take SD 125.

To evaluate the actual movement of students, if any, among groups, a more detailed examination of students’ scores was undertaken, which resulted in the following table (Table 10), which shows the migration of students from their pre-test to post-test groups. The highlighted values represent the percentage of students who remained in their original group.
Table 10: IA Score Distribution

<table>
<thead>
<tr>
<th></th>
<th>Post</th>
<th>≤ 69</th>
<th>70 – 84</th>
<th>≥ 85</th>
<th>Upward</th>
<th>Downward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 69</td>
<td></td>
<td>57%</td>
<td>43%</td>
<td>-</td>
<td>43%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(21)</td>
<td>(16)</td>
<td></td>
<td>(16)</td>
<td></td>
</tr>
<tr>
<td>70 – 84</td>
<td></td>
<td>23%</td>
<td>69%</td>
<td>8%</td>
<td>8%</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(25)</td>
<td>(77)</td>
<td>(9)</td>
<td>(9)</td>
<td>(25)</td>
</tr>
<tr>
<td>≥ 85</td>
<td></td>
<td></td>
<td>75%</td>
<td>25%</td>
<td>-</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(12)</td>
<td>(4)</td>
<td></td>
<td>(12)</td>
</tr>
</tbody>
</table>

Within the two lower pre-test groups (≤ 69 and 70 – 84), majorities of those students remained in the same group or migrated to higher post-test groups, although a majority of students in the highest pre-test group (≥ 85) migrated to a lower group. However, the amount of migration of this highest pre-test group is also the smallest of all groups (n = 16), thus the importance of this downward migration should not be overstated.

When the movement pattern is restricted just to those students who took SD 125, the following table (Table 11) results, which is not appreciably different than the previous one, indicating that the migration among levels is roughly the same for students who took SD 125 as it is for all students in the group.

Table 11: IA Score Distribution for SD 125 Students

<table>
<thead>
<tr>
<th></th>
<th>Post</th>
<th>≤ 69</th>
<th>70 – 84</th>
<th>≥ 85</th>
<th>Upward</th>
<th>Downward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 69</td>
<td></td>
<td>55%</td>
<td>45%</td>
<td>-</td>
<td>45%</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(16)</td>
<td>(13)</td>
<td></td>
<td>(13)</td>
<td></td>
</tr>
<tr>
<td>70 – 84</td>
<td></td>
<td>21%</td>
<td>72%</td>
<td>7%</td>
<td>7%</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(15)</td>
<td>(6)</td>
<td>(5)</td>
<td>(5)</td>
<td>(15)</td>
</tr>
<tr>
<td>≥ 85</td>
<td></td>
<td></td>
<td>75%</td>
<td>25%</td>
<td>-</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(6)</td>
<td>(2)</td>
<td></td>
<td>(6)</td>
</tr>
</tbody>
</table>
An analysis for the migration of students who did not take SD 125 (not shown here) revealed a similar pattern. Quantitative analyses did not reveal a compelling argument for any appreciable change in student attitude of persistence / grit.

**Locus of Control Pre-Post-Test Distribution: Difference of Means**

Similar analyses were performed on the Locus of Control (LC) results as were on the IA results to answer research question 2: Does the student’s mindset / locus of control measurably change from fixed to growth after taking the FYE course? Accordingly, an analysis of the difference in means between the pre- and post-test results for all students was conducted, regardless of whether they took SD 125. As indicated in Table 12 below, a significant pre-/post-test difference emerged on the LC measure.

**Table 12: Difference of Means for Locus of Control (LC)**

<table>
<thead>
<tr>
<th>Pre-Post</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>164</td>
<td>.6851</td>
<td>.11561</td>
<td>.00903</td>
</tr>
<tr>
<td>Post</td>
<td>164</td>
<td>.7490</td>
<td>.13824</td>
<td>.01080</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LC</th>
<th>Levene’s test for equality of variance</th>
<th>t-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assumption</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>Equal variances</td>
<td>4.808</td>
</tr>
<tr>
<td></td>
<td>Unequal variances</td>
<td></td>
</tr>
</tbody>
</table>

Levene’s test revealed a significant difference in the variances of the two groups (p = 0.029) and the t-test results showed a highly significant difference in the means of the pre- and post-test groups’ LC scores (p = 0.00).
In comparing the mean score values for just those students who took SD 125, we find similar results (Table 13).

**Table 13: Difference of Means for Locus of Control (LC) for SD 125 Students Only**

<table>
<thead>
<tr>
<th>Group Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre post</td>
</tr>
<tr>
<td><strong>LC</strong></td>
</tr>
<tr>
<td>Pre</td>
</tr>
<tr>
<td>Post</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LC</th>
<th>Levene’s test for equality of variance</th>
<th>t-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumption</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>Equal variances</td>
<td>2.173</td>
<td>.142</td>
</tr>
<tr>
<td>Unequal variances</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Levene’s test shows equal variances between the groups and the t-test results show a highly significant difference (p = 0.00) between the two groups of scores.

As was done for IA, the difference between the pre- and post-test results for LC was examined. The new variable, LCDIFF, was calculated as *post-test LC minus pre-test LC*. As with IA, it is distributed such that some students’ scores improved, while others’ declined (Figure 8).
As shown above, the observable likelihood that LCDIFF will be positive (improvement) is roughly comparable to that of its being negative (drop in performance). This finding will be discussed in the next chapter.

The difference in the means of LCDIFF for those who took SD 125 and those who didn’t was examined. As shown in Table 14 below, there was no significant difference between these two groups.
Table 14: Difference of Means for LCDIFF for SD 125 and Non-SD 125 Students

<table>
<thead>
<tr>
<th></th>
<th>LCDIFF</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SD(2=Y, 1=N)</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>No, didn’t take</td>
<td>56</td>
<td>.0605</td>
<td>.14628</td>
</tr>
<tr>
<td>Yes, took</td>
<td>108</td>
<td>.0656</td>
<td>.13893</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumption</th>
<th>F</th>
<th>p</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances</td>
<td>.004</td>
<td>.952</td>
<td>.219</td>
<td>162</td>
<td>.827</td>
</tr>
<tr>
<td>Unequal variances</td>
<td>.215</td>
<td>106.503</td>
<td>.830</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Levene’s test showed no difference in the two groups’ variance scores (p = 0.952). The t-test results showed no difference in the mean scores (p = 0.830). Figure 9 shows the distribution of LCDIFF for students who took and those who didn’t take SD 125. There appears to be a significant difference in the distribution of LCDIFF for students who took and who didn’t take SD 125. The largest difference in LCDIFF distribution between SD 125 and non-SD 125 students is in the following score distributions (Figure 9): 0.0 to +0.1 (41.07% non-SD vs. 30.56% SD students) and +0.1 to +0.2 (14.29% non-SD vs. 30.56% SD students).
Analysis of Variance (ANOVA).

In addition to the t-test, a series of Analysis of Variance (ANOVA) tests were performed to determine if any categorical variable had a significant effect on LCDIFF. Unlike the results for IADIFF, no factors were found to be significant in producing a difference in mean LCDIFF values between the pre- and post-test groups.

Non-parametric analysis.

The following graph (Figure 10) shows the pre- and post-distributions of LC scores, as divided into three categories: low (≤ 69), medium (70 - 84), and high (≥ 85); these categories carried over from the IA section, although they were not the ones used by SmarterMeasure™ for this subsection. The graph also shows the distribution of LC scores from the pre- and post-tests for all students, whether or not they took SD 125.
As compared to the same graph for the IA distribution, there appears to be a difference in the pre- and post-test distributions, with noticeable migration from the lower to the higher levels of performance. A Chi-square test showed that the post results are significantly differently distributed than the pre results ($p = 0.00$).

Isolating just those students who had taken SD 125 revealed the following results (Figure 11):
As depicted in the graph, the Chi-square test revealed that the post-test results’ distribution is different than that of the pre-test results, with \( p = 0.00 \).

The distributions in the above graph indicate that, while the middle performing group (scores 70 – 84) remained approximately static, the percentage of lower performing students (scores \( \leq 69 \)) decreased, and the percentage of higher performing students (scores \( \geq 85 \)) increased. However, this graph does not reveal whether the lower performing students migrated to the upper level, or if some movement into and out of the middle level also occurred. To evaluate this migration, a more detailed examination of students’ scores was undertaken, represented in the following table (Table 15) which shows the movement of students from their pre-test to post-test groups.
Table 15: LC Score Distribution

<table>
<thead>
<tr>
<th></th>
<th>Post ≤ 69</th>
<th>Post 70 – 84</th>
<th>Post ≥ 85</th>
<th>Pre Upward</th>
<th>Pre Downward</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 69</td>
<td>49%</td>
<td>34%</td>
<td>17%</td>
<td>51%</td>
<td>-</td>
</tr>
<tr>
<td>70 – 84</td>
<td>26%</td>
<td>40%</td>
<td>34%</td>
<td>34%</td>
<td>26%</td>
</tr>
<tr>
<td>≥ 85</td>
<td>14%</td>
<td>21%</td>
<td>65%</td>
<td>-</td>
<td>35%</td>
</tr>
</tbody>
</table>

The highlighted cells show that the largest percentage of each pre-test group, although not always a majority, remained in the same group. However, a slight majority of the lowest group, 51%, moved to a higher group, although only 17% moved to the highest group. Thus the growth of the highest group is not entirely due to movement out of the lowest group. When examining actual total student counts (not shown here), however, it was seen that 68 students moved upward in level while only 18 moved downward. The data appear to show that students did benefit from taking the FYE course by changing their mindset from fixed to growth.

When considering the students who did not take SD 125, the results are similar. The following graph (Figure 12) illustrates the similarity.
A Chi-square analysis of these distributions showed that the post-test distribution is significantly different than that of the pre-test ($p = 0.00$).

**Multiple Linear Regression**

**Individual Attributes (IADIFF).**

To determine the predictors, if any, of IADIFF (change in the students’ motivation / research question 1), a step-wise linear regression was performed on IADIFF with the independent variables of age, sex, full-/part-time status, term GPA, enrollment in SD 125, math placement, English placement, and program of enrollment.

The following table (Table 16) shows that the regression identified one variable, term GPA, as significant ($p = 0.005$) with an overall adjusted $R^2 = 0.041$, which indicates that very little of the variance in IADIFF is explained by the independent variables.
### Table 16: Multiple Linear Regression Results: IA

#### Variables Entered/Removed

<table>
<thead>
<tr>
<th>Model</th>
<th>Variables Entered</th>
<th>Variables Removed</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Term GPA</td>
<td></td>
<td>Stepwise (Criteria: Probability-of-F-to-enter &lt;= .050, Probability-of-F-to-remove &gt;= .100).</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: IA diff*

#### Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.218*</td>
<td>.047</td>
<td>.041</td>
<td>7.12720</td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), Term GPA*

#### ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>408.904</td>
<td>1</td>
<td>408.904</td>
<td>8.050</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>8229.107</td>
<td>162</td>
<td>50.797</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8638.011</td>
<td>163</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a. Dependent Variable: IA diff*

*b. Predictors: (Constant), Term GPA*

#### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-5.354</td>
<td>1.726</td>
<td>-3.103</td>
</tr>
<tr>
<td></td>
<td>Term GPA</td>
<td>1.569</td>
<td>.553</td>
<td>.218</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: IA diff*
<table>
<thead>
<tr>
<th>Model</th>
<th>Beta In</th>
<th>t</th>
<th>Sig.</th>
<th>Partial Correlation</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>Sex(F=1)</td>
<td>.106&lt;sub&gt;b&lt;/sub&gt;</td>
<td>1.380</td>
<td>.170</td>
<td>.108</td>
<td>.992</td>
</tr>
<tr>
<td>F/PT (F=1)</td>
<td>-.079&lt;sub&gt;b&lt;/sub&gt;</td>
<td>-1.030</td>
<td>.305</td>
<td>-.081</td>
<td>.995</td>
</tr>
<tr>
<td>SD?(Y=1)</td>
<td>.011&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.148</td>
<td>.883</td>
<td>.012</td>
<td>.991</td>
</tr>
<tr>
<td>Age</td>
<td>.126&lt;sub&gt;b&lt;/sub&gt;</td>
<td>1.638</td>
<td>.103</td>
<td>.128</td>
<td>.988</td>
</tr>
<tr>
<td>Eng1</td>
<td>-.098&lt;sub&gt;b&lt;/sub&gt;</td>
<td>-1.274</td>
<td>.205</td>
<td>-.100</td>
<td>.996</td>
</tr>
<tr>
<td>Eng2</td>
<td>.140&lt;sub&gt;b&lt;/sub&gt;</td>
<td>1.826</td>
<td>.070</td>
<td>.142</td>
<td>.992</td>
</tr>
<tr>
<td>Math1</td>
<td>.013&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.170</td>
<td>.865</td>
<td>.013</td>
<td>.998</td>
</tr>
<tr>
<td>Math2</td>
<td>-.055&lt;sub&gt;b&lt;/sub&gt;</td>
<td>-.708</td>
<td>.480</td>
<td>-.056</td>
<td>.993</td>
</tr>
<tr>
<td>Math3</td>
<td>.072&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.932</td>
<td>.353</td>
<td>.073</td>
<td>.987</td>
</tr>
<tr>
<td>Prog1</td>
<td>-.125&lt;sub&gt;b&lt;/sub&gt;</td>
<td>-1.638</td>
<td>.103</td>
<td>-.128</td>
<td>1.000</td>
</tr>
<tr>
<td>Prog2</td>
<td>.142&lt;sub&gt;b&lt;/sub&gt;</td>
<td>1.867</td>
<td>.064</td>
<td>.146</td>
<td>1.000</td>
</tr>
</tbody>
</table>

a. Dependent Variable: IA diff  
b. Predictors in the Model: (Constant), Term GPA

The positive relationship between term GPA and IADIFF shows that students who are better academic performers (higher GPAs) show a greater improvement from their pre- to post-test IA scores.

While most variables were not significant, their overall directions are worth noting. \( B_{\text{Age}} > 0 \), indicating that older students’ scores were higher than younger students’; female students tended to outperform males (\( B_{\text{Sex}} > 0 \)); part time students seemed to outperform full time (\( B_{\text{F/PT}} < 0 \)); students who completed SD 125 tended to outperform those who didn’t (\( B_{\text{SD}} > 0 \)). A detailed examination was beyond the scope of this study.
The collinearity statistics of the Excluded Variables above indicate that there is no substantial multi-collinearity among the independent variables. This is in accordance with the guideline of considering a “Tolerance” statistic below 0.20 an indicator of multi-collinearity (Annmaria’s Blog, 2012). None is near that value, in fact, the closeness of the values to 1.00 indicates virtually no correlation among the independent variables. These results are comparable to a Variance Inflation Factor (VIF)-the reciprocal of Tolerance-being less than 10 and thus, concluding there is little multi-collinearity. Given the interchangeability of Tolerance and VIF, only Tolerance is shown here.

To investigate this further, the correlation matrix for all variables was calculated, as shown in the table (Table 17) that follows.
<table>
<thead>
<tr>
<th></th>
<th>IA diff</th>
<th>SD(Y=1)</th>
<th>F/PT (F=1)</th>
<th>Sex(F=1)</th>
<th>Age</th>
<th>Term GPA</th>
<th>Eng1</th>
<th>Eng2</th>
<th>Math1</th>
<th>Math2</th>
<th>Math3</th>
<th>Prog1</th>
<th>Prog2</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA diff</td>
<td>0.032</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD(Y=1)</td>
<td></td>
<td>0.094</td>
<td>0.068</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F/PT (F=1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex(F=1)</td>
<td>0.124</td>
<td>0.08</td>
<td>-0.113</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.148</td>
<td>0.035</td>
<td>-0.139</td>
<td>0.044</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term GPA</td>
<td>.218**</td>
<td>0.094</td>
<td>-0.071</td>
<td>0.088</td>
<td>0.112</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eng1</td>
<td>-0.111</td>
<td>0.189*</td>
<td>-0.06</td>
<td>0.024</td>
<td>-0.078</td>
<td>-0.061</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eng2</td>
<td>0.012</td>
<td>0.031</td>
<td>-0.032</td>
<td>-0.029</td>
<td>0.057</td>
<td>-0.088</td>
<td>.538**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math1</td>
<td>0.004</td>
<td>0.155*</td>
<td>-0.182*</td>
<td>0.167*</td>
<td>.219**</td>
<td>-0.043</td>
<td>0.079</td>
<td>0.155*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math2</td>
<td>-0.073</td>
<td>0.04</td>
<td>0.05</td>
<td>0.102</td>
<td>0.057</td>
<td>-0.065</td>
<td>0.170*</td>
<td>.222**</td>
<td>-.411**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math3</td>
<td>0.096</td>
<td>-0.04</td>
<td>-0.033</td>
<td>-0.063</td>
<td>-0.087</td>
<td>0.113</td>
<td>.155*</td>
<td>.173*</td>
<td>.296**</td>
<td>.449**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prog1</td>
<td>-0.127</td>
<td>-0.083</td>
<td>-0.077</td>
<td>-0.05</td>
<td>0.015</td>
<td>-0.009</td>
<td>0.087</td>
<td>0.014</td>
<td>0.08</td>
<td>0.041</td>
<td>-0.145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prog2</td>
<td>0.147</td>
<td>0.113</td>
<td>-0.016</td>
<td>0.12</td>
<td>0.059</td>
<td>0.021</td>
<td>-0.065</td>
<td>0.1</td>
<td>0.117</td>
<td>-0.036</td>
<td>-0.028</td>
<td>-0.314**</td>
<td></td>
</tr>
</tbody>
</table>

Table 17: Correlation Matrix for Collinearity Statistics: IA
As captured by the regression results, the correlation between Term GPA and IADIFF \( (r = 0.218) \) is significant. There are other significant correlations among the independent variables, but in no case does the Pearson's correlation coefficient, exceed 0.70, the accepted level above which multi-collinearity is to be suspected (Vogt, 2007), confirming the conclusion derived from the tolerance collinearity statistics. The significant correlations among the highlighted placement variables, show expected relationships. As the course placement categories are, for each subject, mutually exclusive, we would expect to see some correlation. Those who place into the lowest developmental level in English and math (ENG1 and MATH1, respectively) tend to be enrolled in SD 125, part-time, female, and older (the last two just for math). These correlations also make sense with the policy that it was mandatory for developmentally placed students to enroll in SD 125 and reflects the student body distribution (64% females).

**Locus of Control (LCDIFF).**

A step-wise regression of LCDIFF was performed with the same independent variables as with IADIFF (age, sex, full-/part-time status, term GPA, enrollment in SD 125, math placement, English placement, and program of enrollment) to determine the predictors, if any, of change in LC (research question 2). Two variables, Age and MATH3, were identified as contributing to a significant predictive model although, as with IADIFF, the overall predictive power of the model is low (Adjusted \( R^2 = 0.045 \)).
### Table 18: Multiple Linear Regression Results: LC

**Variables Entered/Removed**

<table>
<thead>
<tr>
<th>Model</th>
<th>Variables Entered</th>
<th>Variables Removed</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age</td>
<td></td>
<td>Stepwise (Criteria: Probability-of-F-to-enter &lt;= .050, Probability-of-F-to-remove &gt;= .100).</td>
</tr>
<tr>
<td>2</td>
<td>Math3</td>
<td></td>
<td>Stepwise (Criteria: Probability-of-F-to-enter &lt;= .050, Probability-of-F-to-remove &gt;= .100).</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Locus diff

**Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.164&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.027</td>
<td>.021</td>
<td>.13957</td>
</tr>
<tr>
<td>2</td>
<td>.238&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.057</td>
<td>.045</td>
<td>.13783</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Age
b. Predictors: (Constant), Age, Math3

d. **ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regression</td>
<td>.087</td>
<td>1</td>
<td>.087</td>
<td>4.490</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>3.156</td>
<td>162</td>
<td>.019</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.243</td>
<td>163</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regression</td>
<td>.184</td>
<td>2</td>
<td>.092</td>
<td>4.855</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>3.059</td>
<td>161</td>
<td>.019</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.243</td>
<td>163</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Locus diff
b. Predictors: (Constant), Age
c. Predictors: (Constant), Age, Math3
### Coefficientsa

<table>
<thead>
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*a. Dependent Variable: Locus diff*

### Excluded Variablesa

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<tr>
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<th>Partial Correlation</th>
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<td>.022</td>
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</tbody>
</table>

*a. Dependent Variable: Locus diff*

b. Predictors in the Model: (Constant), Age

c. Predictors in the Model: (Constant), Age, Math3
Age is a continuous variable with a positive coefficient, indicating that the older the students, the greater the improvement between pre- and post-test results (LDIFF). Math3 is a dummy variable that corresponds to those students who have placed into MTH 111, Beginning Algebra. This is the first college level math course the college offers. Those students tend to have a higher LDIFF value.

While most were not significant, the variables’ overall directions are worth noting and are similar to those found in the analysis of IADIFF. \( B_{\text{Age}} \), the coefficient for a variable that is significant, is greater than 0, indicating that older students’ scores were higher than those of younger students. Female students tended to outperform males \( (B_{\text{Sex}} > 0) \); part time students seemed to outperform full time \( (B_{\text{F/PT}} < 0) \); students who completed SD 125 tended to outperform those who didn’t \( (B_{\text{SD}} > 0) \). Again, a detailed examination was beyond the scope of this study.

As with IADIFF, the collinearity statistics of the Excluded Variables above indicate that there is virtually no multi-collinearity among the independent variables (Annmaria’s Blog, 2012). This is further borne out by considering the correlation matrix, as shown in Table 19, on the next page.
<table>
<thead>
<tr>
<th></th>
<th>Locus diff</th>
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<th>Age</th>
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<th>Math2</th>
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<td>Prog1</td>
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<td>-0.077</td>
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<td>0.015</td>
<td>-0.009</td>
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<td>0.014</td>
<td>0.08</td>
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<tr>
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<td>-0.065</td>
<td>0.1</td>
<td>0.117</td>
<td>-0.036</td>
<td>-0.028</td>
<td>.314**</td>
<td></td>
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</table>
As captured by the regression results, the correlations between LCDIFF and Age and Math3 are significant ($r = 0.164$ and 0.158, respectively). Some of the same significant correlations appear as did in the analysis for IADIFF. The English and math placements are correlated with each other, and ENG1 and MATH1 are correlated, to an extent, with SD taken, full-/part-time status, sex, and age. No correlations among the independent variables approach 0.70; moreover, the two significant predictors, Age and Math3, are not correlated. As was found for the correlation matrix for IADIFF, those who place into the lowest developmental level in English and math (ENG 1 and MATH 1, respectively), tend to be enrolled in SD 125, be part-time, female, and older (the last two just for math).

**Qualitative Data: FYE Focus Groups**

Although the analyses of the quantitative results were inconclusive, qualitative data helped us respond to several of the research questions in a more descriptive and meaningful way. Focus groups were used to understand how students who took SD 125 constructed their own meaning of this experience (Merriam, 2009) and how it affected their motivation / grit. Three focus groups were held during April of 2012 with a total of 14 students who had enrolled in the FYE course the previous semester. An email invitation went out to 147 students who had taken the FYE course in the fall and had returned in the following winter semester. Follow-up phone calls were made until a sufficiently large number of students was assembled for each of the groups. Those who had not returned in the winter semester were not contacted. The groups consisted of 13 females and one male student (93% female; 7% male), with an average age of 21 (mode
of 19). The fall semester enrollments for SD 125 were 58% female and 42% male, meaning that the focus group sample was not representative of the population that enrolled in the FYE course during the fall semester. Focus group participants were offered a $20 gas card for their participation. Each session lasted approximately 90 minutes. Two of the focus groups were video-recorded, and another was not recorded due to technical difficulties but detailed notes were taken (during the session). The focus groups were transcribed by the author. The focus group invitation and questions are added in the appendix section. Questions asked of focus group participants could be categorized into the research questions, previously stated in chapter 1.

**Research Question One:** *Does the student attitude of persistence / level of “grit” increase after taking the FYE course?*

Students were asked to rate their motivation pre-and post course using a 1-10 scale, with 1 being low and 10 being high. Many responses reflected student perceptions that the course itself had a positive impact on their level of motivation:

<table>
<thead>
<tr>
<th>Student</th>
<th>Motivation went from a 3 to a 4; didn’t know what I was working on [prior to the class]; the final project helped me research career directions a lot more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Motivation went from a 3/4 to a 9</td>
</tr>
<tr>
<td>Student</td>
<td>I was probably around a 3 before, I really didn’t care because the majority of my high school classes were so easy that I didn’t have to try at all but now I’d say more towards a 7 or so. I still sometimes wait last minute until I get things done but I’m starting to get things done before they’re due and turning them in early</td>
</tr>
<tr>
<td>Student</td>
<td>I’d say before my motivation felt like a 4 or a 5, and then it was like a 7 or 8 after</td>
</tr>
<tr>
<td>Student</td>
<td>So I would say, like, before I started at like a negative 1, and now, like an 8.</td>
</tr>
<tr>
<td>Student</td>
<td>I’d say my motivation before the class was like a 5 or 6. The only motivation I had was to make my mom proud because my brother and sister are pretty much like huge disappointments. And after I actually took the class seriously, because at first I thought it was a joke, and then I actually started paying attention and seeing how much it helps, and then we did the long-term and short-term goals, and I realized what I wanted, and that in itself was motivation, and the me-project helped put it into focus, and then my motivation was about like 8 at that time.</td>
</tr>
</tbody>
</table>

Some mentioned that specific course content, e.g. the career interest inventories (Strong Interest Inventory) helped to increase their motivation. After students took the Strong Interest Inventory, a licensed professional counselor interpreted the results during a class period, and this activity helped students lay the foundation to identify career interests and to create a personalized educational development plan (EDP), which was done in a subsequent class period. The “Me-project” which many students referenced as being meaningful to them, was a student presentation at the end of the semester in which they pulled together many of the things they had learned about themselves during the course. Many times it represented their past and their future and how they envisioned their journey. One student indicated that was the most impactful activity for her: “I’d never done anything like that before. It actually made me realize ...like what I wanted to do and what I had to do in order to get that.” Identifying what one wanted to accomplish and putting together concrete steps to reach that goal helped some students persist in their studies. Others expressed that the strong relationships with the instructor increased their level of persistence / grit. Students felt they had an “accountability partner” in their SD instructors, someone whom they felt was lacking during the semester after they took SD 125 (the semester in which the focus
group was conducted). Several students requested that the college organize a follow-up event for students, so they could talk with their instructors during the following semester and get a “dose of motivation” when they most needed it. Some students indicated that as the first in their family to go to college, they came to college very motivated.

Some students expressed that it was so easy for them to get good grades in high school, that their motivation to do well in college was low, especially in their first semester. Their expectations of college and the realities they experienced, were quite different. Students expected to find an unsupportive atmosphere, one in which they had to look out for themselves, with no support or caring from their professors. Many were pleasantly surprised to find the reality quite different and said that their instructors were very willing to help them. Despite admittedly “cruising” during their senior year of high school, the students seemed to be prepared for the academic rigor in the first semester.

While some students mentioned that the instructor connection was the most powerful motivator, others attributed their increased motivation to their peers in the class. Students regularly exchanged ideas for study strategies that worked for them and discussion among peers was encouraged during this interactive class. Some instructors intentionally rotated membership in the small groups, so that students could get to know each other better. A few of the interviewed students did not perceive that the course positively impacted their motivation and believed that their level had stayed about the same:
<table>
<thead>
<tr>
<th>Student</th>
<th>Motivation has always been quite high; I have a big thirst for knowledge; I like achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Motivation stayed at 10 before and after the course</td>
</tr>
<tr>
<td>Student</td>
<td>I would say my motivation was around a 5 before. High school was easy. I tried but it was super easy to get good grades without really trying and going through the class. [SD 125] showed me different ways to do things. I’ve always been the kind of student that waits until the last minute and I do good under pressure, like my homework. I feel like it works better for me.</td>
</tr>
<tr>
<td>Interviewer</td>
<td>Would you say the 5 is still a 5?</td>
</tr>
<tr>
<td>Student</td>
<td>Probably.</td>
</tr>
<tr>
<td>Student</td>
<td>My motivation was pretty high to begin with. I graduated high school in 2005 so I came to college pretty motivated. Probably about the same.</td>
</tr>
<tr>
<td>Student</td>
<td>I was in the course, I still was the same, I don’t think I moved because I was really just motivated</td>
</tr>
</tbody>
</table>

Essentially, the feedback from the students was mixed when trying to identify whether their attitude of persistence / level of “grit” increased after taking the FYE course. For some students, there appeared to be a clear connection between the activities of the course, or the influence of the instructor or their peers to increase motivation to achieve their college-related goals. For others, it appeared that if their motivation was already high, the course did not increase it to be even higher. Also, personal goals for attending college, e.g. to provide a better life for one’s child, or to be the first in their family to go to college, provided strong intrinsic motivation for some students that was not increased by taking the course.

**Sub-question Two**

*Does the student’s perception of their time management skill / level of “grit” measurably increase after taking the FYE course?*

All FYE instructors required students to purchase and use a planner to assist them with time management. Students spoke of this skill as one they still used; in fact,
one student volunteered to show her current planner to me to demonstrate its current usefulness to her. Another student commented that that was the most important skill that she still relied upon. Student comments reflected what they learned in regards to time management:

<table>
<thead>
<tr>
<th>Student</th>
<th>Time organization was stressed [in class]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>I’ve been using my planner a lot more; I never used one in high school, it helps me remember my homework</td>
</tr>
<tr>
<td>Student</td>
<td>I always think I have time for things but I am extremely forgetful, I found the use of the planner helps</td>
</tr>
<tr>
<td>Student</td>
<td>Forcing us to use a planner really helped</td>
</tr>
<tr>
<td>Student</td>
<td>I use my phone a lot. Not exactly for my homework but I use it for like when I have class, when I have work or if important school things come up I’ll write it in my phone over my planner. I’ll use that as my planner.</td>
</tr>
</tbody>
</table>

One student commented that she believed the use of the planner for her class was excessively detailed. She did not believe that so many details ought to be recorded in the planner (and then checked by the instructor). Other students mentioned that they continued to use procrastinating behaviors, even after taking the class and learning how to manage their time more wisely and efficiently. Being introduced to the skill of time management was not enough to change behaviors, at least not in the semester after they took the course.

In summary, several students commented on their new skill of using a planner to manage their time. Some continued to use that skill and that method to help keep them on track for obligations, such as projects, exams, and work. There were several positive comments about how valuable this skill was. At the same time, some students admitted that they “fell off the wagon” with using a planner and reverted back to “doing things
just before they’re due.” The average first-semester GPA for the sample was 2.95, indicating that students were close to a “B” average. Subsequent GPA was not part of the study. The average GPA for SD 125 in fall or winter 2011-12 was 2.95, indicating the grade earned in FYE did not appear to be a significant factor in increasing or decreasing overall GPA. Further examination of GPA was beyond the scope of this study.

**Sub-question Three**

*Does the student perception of willingness to seek help / level of “grit” measurably increase after taking the FYE course?*

Through various lessons and applications, instructors stressed the need for students to learn “interdependence” and when to ask for help. Some instructors stressed this through a fun exercise, such as a “scavenger hunt” to find services and people on campus. All of the faculty uniformly assigned students to select one additional class in which they would apply the principles they learned in SD 125 (during the same semester that they were enrolled in SD 125). This “lab application” class gave students practice in asking for help, talking with their instructor, gauging how well they were performing and what specific steps they could take to improve. Some students believed that their grades were higher during the semester in which they were enrolled for SD 125 because of the chance to immediately practice the skills they were learning in their other classes. Student comments indicated the course helped them increase their willingness to seek help:

<table>
<thead>
<tr>
<th>Student</th>
<th>The course gave me confidence; I don’t allow myself to struggle anymore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>The instructor kept saying over and over they are here for us; without the students they do not have a job</td>
</tr>
</tbody>
</table>

138
<table>
<thead>
<tr>
<th>Student</th>
<th>Without taking this class I would’ve had a harder time with the English instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>I learned employing interdependence; previously I wanted achievement all to myself</td>
</tr>
<tr>
<td>Student</td>
<td>When the other people [guest speakers] came in it was like saying there is more to this college than just this classroom, there are other people, there are resources, there are a lot of resources.</td>
</tr>
<tr>
<td>Student</td>
<td>We were talking about different professors and how to, I don’t know, like reach an agreement and adjust to different teaching methods. Which I think is really important because you know at least in my school I had the same teachers for 4 years. I had the same history teacher for 4 years. I went to a small school. So, the stuff that was taught, it was really helpful because having a new teacher and the teaching methods change...</td>
</tr>
</tbody>
</table>

Several students discussed their increased use of the Writing Center and the professional math tutor after they were introduced to these free services in their FYE course. Many students said they did not know what to expect when they first visited these support services, which made them feel anxious about accessing them. The value they felt they received but also the apprehension with which they approached these services initially was evident in the following comments:

<table>
<thead>
<tr>
<th>Student</th>
<th>Actually, I was scared to go to the writing center but then I went ‘cause I was failing English, and it actually really does help. You pretty much just sit there, and if you have questions you ask her. She’ll go over your paper with you and suggest things. I thought it was helpful.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>And so, at the beginning, when we wrote our first paper, I got a D. Then, we wrote our second paper. And I went to the Writing Lab once. I got a C. Each time I visited the writing lab more, I got a B, and now I’m working towards an A. She just sent me back my paper in my email today, and she said, looking like an “A.” And I was like so excited. I jumped up in bed. Because I’ve been really, really working hard, and it’s like each time I visited the Writing Lab I did better and better.</td>
</tr>
</tbody>
</table>
Sub-question Four

*Does the student attitude of procrastination / level of “grit” measurably decrease after taking the FYE course?*

While students were honest about their continued tendencies towards procrastination, and that they had not changed after the course, many indicated that they had learned the value of time as well as some concrete strategies to get things done earlier than was their habit before. Similar to the time-management findings previously reported, one might assume that students were satisfied with their current performance and were able to manage their academic responsibilities as well as they desired, even though they did not consistently use their time wisely. Recall that the average first-semester GPA was 2.95. Student comments demonstrated that they were aware of their tendencies towards procrastination, and that the course helped them try new behaviors and helped to keep them “in check”:

<table>
<thead>
<tr>
<th>Student</th>
<th>I can’t possibly waste time anymore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Still a procrastinator but don’t always wait until the last day; I have papers done days before they’re due</td>
</tr>
<tr>
<td>Student</td>
<td>Definitely a lot better</td>
</tr>
<tr>
<td>Student</td>
<td>Still procrastinate a little bit but not as much; I just set times for myself; I put in the effort right now, so I don’t have to retake it</td>
</tr>
</tbody>
</table>
In sum, it appears that the FYE course helps make students aware of time as a valuable commodity, and while they have a tendency to slip back to procrastinating behaviors, they also have learned new skills and tools to keep them on schedule and to get things done well in advance of when they are due. Frequent interactions with instructors, encouraged through the SD 125 class, could have played a role in students staying on task with their projects, as instructors would very likely have requested to see updates of papers and other class projects throughout the semester, forcing the student to continuously work on his / her assignments and not wait to do it all at the last minute.

**Research Question Two: Does the student mindset / locus of control measurably change from fixed to growth after taking the FYE course?**

This question was answered earlier in the chapter, in the quantitative analysis section. To further clarify what is meant by “locus of control,” the following definition is provided by Smartermeasure:

Locus of Control is a measure of the degree to which you feel that you are in control of what happens to you. A person with high (internal) locus of control believes that their experiences are controlled by their own skill or efforts. (SmarterMeasure score report)
The questions that made up this subset to measure “locus of control” were:

Q. 5  I think some people are naturally more intelligent than others.

Q. 14  I feel that chance has a lot to do with being successful.

Q. 17  I agree that school success is mostly a result of one’s socio-economic background.

Q. 24  I feel that if I set realistic goals I can succeed no matter what.

For the overall “IA” section, students who scored between 0 and 69 received “Red/low,” between 70 and 84 received “Green/medium,” and between 85 and 100 received “Blue/high” (Tara Boozer, personal communication, November 27, 2012).

Relating the “locus of control” questions back to the work of Dweck, one could make the observation that a larger number of students in the pre-test had the “fixed” mindset, in which one believes one’s condition is static, despite any amount of effort put forward. Students with this mindset tend to believe that their fates are almost pre-determined and putting forth effort equates to pursuing something that is not right for them. They believe that when something is right for them, it should come easily. In SD 125, using Downing’s vocabulary, this belief is also called the “victim” mentality. The quantitative analysis showed an increase in LC scores for all students, regardless of the FYE enrollment. Students who have a high locus of control, subscribe to the belief that their experiences result from their efforts and that the more effort they put in, the better their results. Dweck calls this the “variable / growth” mindset while Downing calls this the “creator” mentality. In much of Dweck’s recent work and the work of the Stanford lab (PERTS), college students are taught that the mind is like a muscle that can expand
with training (PERTS, 2012). One of the goals for the PERTS training, as listed on their website is as follows:

A second component teaches students that they can grow their intelligence and abilities through effort. It challenges the belief that "I could never be good at this, no matter how hard I tried." Students work through an online module that explains that intelligence is malleable. When students realize they can increase their intelligence and abilities through effort, they can become more personally invested in their success (PERTS, 2012).

North Central participated in a pilot study for the PERTS research in the fall 2012 semester with students enrolled in SD 125. The results of that study were not available for review at the time this dissertation was written. Further discussion of the potential impact of PERTS for North Central students occurs in chapter 6.

**Research Question Three: Do the current curriculum and objectives of the course effectively address these student motivational skills?**

Two lead faculty members were interviewed to understand how the curriculum addressed the issues of motivation / grit. The *On Course* textbook has a chapter dedicated to motivation as well as a chapter on locus of control. The latter was just added with the newest edition and presents Dweck’s theory of fixed vs. growth mindset. Throughout the textbook, concepts are introduced which address motivation and grit, e.g. “victim” vs. “creator”; internal and external goals; and time management. One professor commented that the locus of control information was not presented until chapter 7, which was later than preferred. Earlier exposure could help students have at least an awareness of this important concept. Students in SD 125 receive a large amount of personalized feedback, and there is regular one-on-one communication with the
faculty member. A minimum of three one-on-one conferences with students are
scheduled throughout the semester. These meetings serve as a form of motivation and
provide personal relevance for each student. Faculty also mentioned the “Me-project”
as a tool to motivate students; the “Me-project” is an end-of-semester project in which
students present their preferred futures, while telling the story of their lives so far.
Students also mentioned this in the focus groups as a personally relevant assignment. A
component that is currently missing from the class is in the area of professionalism, i.e.
the connection between the world of work and academic pursuit. Resumes and
interview skills could be added to the course to provide this type of relevance and could
be easily paired with the existing component of the Strong Interest Inventory.

Both faculty expressed their observations that some students who are directly
out of high school do not perform well in SD 125. Adult students, veterans or students
who have been in the world of work for even a short time, seem to return to college
with a desire to find out how they can get the most out of college. If students do not
have the determination to do well in college, this one class will not be the silver bullet.
There are a lot of potential distractions for new students, as they understand and
appreciate their new sense of independence and some are not ready to commit to being
academically engaged students. One of the professors likened the SD 125 class to a
vitamin: It can only be absorbed by the body when the body has a need for it;
otherwise, it goes to waste.
Summary

Chapter 4 presented the results of various quantitative and qualitative analyses of whether an FYE course has demonstrable impact on student motivation / grit. A pre-motivation / grit score was established and compared with a post-score for students who took and did not take the FYE course. Quantitative data showed no increase in IA score after one semester; though the qualitative data showed that many students expressed significant changes in motivation after taking the FYE course. Students improved in areas such as interdependence, knowing when to reach out for assistance, time management and utilizing peer and faculty support. Locus of control, a subset of the IA section, also increased for all students in the sample, not just the ones who took SD 125. This indicates that after one semester, students tended to have a growth mindset rather than a fixed mindset. Following Astin’s IEO model, stepwise regression was also performed on both the IA and LC outcomes to determine if any variables contributed to the change in motivation / grit. For IA, age was a significant variable, meaning that as students got older, their scores tended to increase at post-test. For LC, term GPA and a level of math placement (into Beginning Algebra) were predictors of the change in LC score. The possible explanations for these outcomes will be discussed thoroughly in the next chapter.
CHAPTER 5
Analysis and Discussion

North Central Michigan College sought to assess the impact of its FYE course since the class was first offered in the Fall of 2009. Quantitative data, such as retention, persistence and performance in FYE and other courses was and continues to be regularly studied⁸. Qualitative data that included focus groups, surveys, and meetings with faculty and advisors to discuss what was and was not working helped to inform course improvement. The college’s efforts to assess the FYE course could be compared to Merriam’s (2009) description of analyzing data, “analysis begins with the first interview, the first observation, the first document read. Emerging insights, hunches, and tentative hypotheses direct the next phase of data collection, which in turn leads to the refinement or reformulation of questions” (p. 164).

This dissertation is a natural extension of the data that had already been collected starting in 2009 and aims to add a level of richness and specificity to more fully understand the impact of the FYE course for different types of students. A mixed methods approach was used to lead to a greater understanding of not just the “what”

⁸ Most recent quantitative data demonstrated that the retention after one semester for students who successfully completed SD 125 was at least 10 percentage points higher than other developmentally placed students who did not enroll in SD 125, and over 50 percentage points higher than those who took and failed SD 125. After four semesters, the difference between the students who passed SD 125 and the other two groups was about 5 percentage points.
but the “why” of the findings. Friedman & Marsh (2009) stated that “more research is needed to determine what specific aspects of the first-year seminar make the greatest contribution to specific outcomes” (p. 40). This study aimed to identify these aspects, particularly in relation to student motivation and attitudes. While individual stories abound about how the course impacted and sometimes transformed the lives of students, it is ultimately a large investment in resources on the part of the college as well as the students to offer this course in the volume that is needed to support a mandatory policy. If demonstrating positive impact on a majority of students is elusive, then one must continue to adjust the design, content, and delivery of the course.

The author’s hypothesis was that there would be positive change between the pre-and post-test scores for students who took the FYE course, especially when measuring locus of control and motivation through attributes such as level of persistence, time management, procrastination, and willingness to seek help. As was discussed in the literature review, study-after-study showed the positive impact of the FYE course on academic and non-academic outcomes. Cuseo (1997) commented on the promise of the FYE course to have a long-lasting impact on students’ educational outcomes by stating: “the freshman seminar represents such a course, one which focuses on the development of student competencies and skills that are likely to withstand the ‘test of time’, an oft-cited criterion used to assess the true value of an educational experience” (p. 10).

The importance of motivation, grit, and a growth mindset is also well-established in the literature. In addition to the previously cited work of Dweck at Stanford University
and Duckworth at Penn State University, who have extensively studied grit / perseverance and locus of control, many others, previously mentioned in chapter 2, have stressed how important these factors are in child, adult, and student development. Williams and Williams (n.d.) studied five key ingredients for improving student motivation: the student, the teacher, the content, the method / process, and the environment and concluded that “motivation is probably the most important factor that educators can target in order to improve learning” (p.2). They also added that “very little if any learning can occur unless students are motivated on a consistent basis” (p.2).

In a 2006 article by Shushok and Hulme, the authors cited Chip Anderson, who stated that “the truth is that more students leave college because of disillusionment, discouragement, or reduced motivation than because of lack of ability or dismissal by school administration” (p.5). MacCann, Duckworth, and Roberts (2009) found that studies of “conscientiousness” typically include attributes such as, industriousness, perfectionism, tidiness, refraining from procrastination, control, cautiousness, task planning, and perseverance. They stated that “conscientiousness is often found to predict academic outcomes” (p. 451). The authors went so far as to suggest that:

If there is limited time in an academic readiness training program, a program teaching students that effort and hard work pays off (e.g. Blackwell, Trzesniewski & Dweck, 2007) may ultimately be more successful than a (sic) program that teaches effective organization of learning materials (p. 455).

This study was designed to evaluate the effects of an FYE course on student motivation / grit and selected student attitudes. To answer research question 1, there was no impact on student motivation / grit after taking the FYE course, judging from the
quantitative data. Qualitative data was more positive in favor of the impact of the FYE course, especially for students who began at a low level. To answer research question 2, locus of control did increase for all students after one semester of attendance. This positive finding indicates that all students, regardless of their enrollment in the FYE course, increased their thinking from “fixed” to growth” showing that they see greater connections between working hard and achieving one’s goals. To answer research question 3 about the effectiveness of the curriculum in addressing motivation / grit, it is premature, both since this data is inconclusive and the mandatory policy has not been in effect for a long enough period of time. The findings were discussed in the previous chapter, and now we turn to an analysis of these findings.

**Question 1: Does the Student’s Attitude of Persistence / Level of “Grit” Increase after Taking the FYE Course?**

1. Does the student’s perception of their time management skill / level of “grit” measurably increase after taking the FYE course?

2. Does the student’s perception of their willingness to seek help / level of “grit” measurably increase after taking the FYE course?

3. Does the student’s attitude of procrastination / level of “grit” measurably decrease after taking the FYE course?

Quantitative statistics for the Individual Attributes (IA) scores showed no improvement after attending college for one semester. The variables that were controlled, including sex, placement, enrollment status (full-/part-time) and type of program did not impact the results significantly. For a very small subgroup of students in this sample, aged 30+ (n=13), there was a significant relationship between increase in IA
scores and age. Qualitative feedback, overall, showed a marked improvement for many students. For a few, who rated themselves as having a high level of motivation prior to coming to college, focus group data showed that the FYE course did not appear to increase their motivation. This is in contrast to the quantitative data, which demonstrated that first-term GPA was a significant predictor for IA increase, i.e. students with higher first-term GPAs also had greater IA change. While Locus of Control (LC) did increase after one semester of attendance, it did not increase as expected. It increased almost equally for students who took and did not take the FYE course, indicating that simply attending college for one semester impacted the increase in score. When multiple linear regression was done with the sample and included overall first-semester GPA, age 1 (19-22) and math placement (MTH 111: Beginning Algebra) were the only significant variables.

**Quantitative data: Inflated pre-test scores.**

It was expected that the post-test scores for the IA section would increase, especially for those who took the FYE course. The Locus of Control (LC) did increase but equally for all students in the sample, with no significant differentiation among students who did and did not take the FYE course. One possible explanation for the lack of change in IA scores and the lack for some and gain for others (as described in chapter 4) is that students entered with an inflated sense of their abilities and attitudes that were corrected after one semester. In Arum and Roksa’s (2011) book titled *Academically Adrift*, the authors discussed the impact of the recent cultural change that emphasizes the importance for all students to attend college after high school. Students who are
more or less prepared are advised to go to college, whereas previously, some students were not recommended to further their education in a college setting. When counselors and other respected adults are advising students to attend college, these students most likely have the expectation that they will do reasonably well. Interviews with the lead FYE faculty confirmed their perception that many students come to college assuming they can take on more than they can handle, e.g. working full-time and taking a full load of classes. Taking a more careful look at some of the questions that make up the IA section, one could imagine that some students assessed themselves in a more conservative manner after they actually experienced one semester of college. The responses were given using a Likert-scale, with 1 for “not like me at all” and 4 for “very much like me.” Some examples of those questions that may have gotten a lower self-assessment at the end of their first semester are as follows:

<table>
<thead>
<tr>
<th>I am concerned about being successful in this program.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have always completed the courses that I started.</td>
</tr>
<tr>
<td>I feel that if I set realistic goals, I can succeed no matter what.</td>
</tr>
</tbody>
</table>

It is feasible that students “reset” their expectations about how easily they believed they would experience success in college after most of their first semester was completed. Perhaps enrollment in the FYE course demonstrated to them a lack of student skills of which they were previously unaware. Arum and Roksa (2012) described today’s college students as “academically adrift”: 
Many students come to college not only poorly prepared by prior schooling for highly demanding academic tasks that ideally lie in front of them, but – more troubling still – they enter college with the attitudes, norms, values, and behaviors that are often at odds with academic commitment. Barbara Schneider and David Stevenson have described the prevalence of ‘drifting dreamers’ with ‘high ambitions, but no clear life plans for reaching them’. These students ‘have limited knowledge about their chosen occupations, about educational requirements, or about future demand for these occupations’. They enter college, we believe, largely academically adrift (p. 3).

Over 80% of students in the sample placed into one or two levels below college-level English. Students in the FYE course are exposed to the Strong Interest Inventory and start to make connections about possible careers and the education that might be required for those careers. Frequent comments and observations from multiple advisors indicate that there are many students who do not seem to have connected their career goals with the academic qualifications required to achieve those goals. Students are typically enrolled in other courses, which may also challenge their sense of academic preparedness. Shushok & Hulme (2006) reported that “top achievers tend to set goals slightly above their current level of performance” and “low achievers often set very, very high goals” (p. 5). It is then conceivable that students’ motivation scores in fact decreased (very slightly) after the pre-test as they processed new information about their careers, about their strengths in relation to those careers and experienced their first semester of college.

A majority of the students in the focus groups expressed a positive change in their motivation after taking the FYE course. North Central is a small college (with less
than 3,000 students), and many of the recent high school graduates who enroll
attended very small high schools, with graduating classes ranging from smaller than 10
to as large as 250. The small college size encourages students to not feel anonymous
and to turn to someone for help. However, many faculty lament the fact that students
do not come and see them during their scheduled office hours. So, while this important
skill is taught, practiced and rewarded during SD 125 in a small, supportive environment,
it is unclear if it will have a lasting impact on student interaction with faculty.

Recent articles have highlighted that many students, particularly first-generation
students, view their professors as vastly superior to them and would not consider
talking to them (DeParle, 2012). For students who have no role models for self-
advocacy, much less in an environment that is unfamiliar to them, the FYE course has
the potential to teach them this valuable skill.

**Challenges with self-reported data.**

Student self-reported data can be problematic for those hoping to use or study
the data; and are, according to Arum and Roksa (2012), “susceptible to inflated self-
perceptions of one’s own performance” (p. 27) and could explain why some students’
scores increased and some decreased. While one might think students are in the best
position to evaluate themselves, students in the college environment are used to being
assessed as part of their coursework. These assessments are usually worth points
towards their grade. When an assessment is voluntary, or not officially part of a class
experience, it is possible that it is not taken seriously. Shechtman, DeBarger, Dornsife,
Rosier, and Yarnall (2013) also reported that “people are not always valid assessors of
their skills” (p. ix). The collection of data was done carefully, using existing data when available and accessing it from the student information system. When it was not available, as in the case of the post-test score, the author collected it in a controlled environment. The pre-test Smartermeasure™ scores were already stored in the student information system, as the test was a requirement for all new students prior to registration. While students were required to take several sections of the Smartermeasure™, only the scores for the “Individual Attributes” subtest made up the pre-test motivation / grit score. The test was available on a secure portal but could be taken on any computer / device with Internet access. The results of the test were used only to inform the advising and orientation process with no other mandatory requirement. Students could have scored in the low / red ranges for all of the tests and could still be enrolled for any course, given prerequisites were met. This knowledge could have led some students to give an inaccurate picture of their attitudes and abilities at the time of the pre-test. Additionally, some informal student feedback indicated that they had taken the test on a device, such as a Smartphone, putting into question their level of concentration at the time they were engaged in responding to the questions. The same could be true for the post-test, which was collected by the author in a paper-and-pencil format between the 14th and 16th week of the students’ first semester. It was determined that it would be very difficult to encourage students to take the test on their own time, so the author requested permission from several instructors to administer the test in class. Students were extremely compliant after the purpose of the study was explained, but they could have provided data that was not
reflective of their true attitudes. An inaccurate pre-test score or an inaccurate post-test score – or both - could help to explain the disappointing quantitative results.

**No effect on motivation after one semester.**

As has been discussed, quantitative data showed no gain for IA measurements. When reviewing the actual distributions of the pre-and post-test IA and LC scores, it was found that a majority of students in the lowest and middle range stayed within those ranges, confirming there was no appreciable movement in that trait between pre-and post-tests. In another study conducted by Wang (2012), pre-college academic motivation was compared with motivation at the end of the first year for approximately 4,500 students at 19 institutions. For about 50% of students in the sample, academic motivation did not increase. The lack of gain in motivation in the North Central study could have been exacerbated by the fact that there was an abbreviated time-span between the pre-and post-test, (about 15 weeks), making it perhaps unrealistic to expect a significant (or any) increase in student motivation. Returning to Duckworth’s definition of “grit,” it is “maintaining effort and interest over years” (Duckworth et. al., 2007, p.1088). This helps to demonstrate the long-term focus for the concept of “grit,” which may not be measurable after only one semester. Rutshow, Cullinan, and Welbeck (2012) expanded this notion when they stated, “even when a program is well implemented, the impact of a one-semester intervention on students’ achievement may be modest” (p. 4). Interviews with the lead FYE faculty confirmed this observation. They expressed the belief that many at-risk students enter college after experiencing 18 years
of barriers related to schooling, their families or personal lives. One course alone cannot combat 18 years of experience.

It is also possible that some students were not optimally challenged in the FYE course, and so the lack of increase in motivation could have been due to boredom. Hyers and Joslin (1998) found that FYS achievement and standardized test scores did not correlate; the few students who earned an “F” in the FYE seminar had the highest average SAT score. Previous negative student feedback about the course included a lack of connection with the personally reflective, soul-searching content of the “On Course” curriculum. There was some discussion with the lead FYE faculty about whether students placed into certain levels of developmental math should be captured under the mandatory policy, as they believed their needs were not as high as students who placed into developmental English. The latter typically struggle with reading and writing skills, as well as critical thinking and more general, college-student skills. In Fall of 2012, the math department redesigned the sequencing of math courses and left only one truly developmental course in the mix. That means that this issue has resolved itself and students being identified as having to take the FYE course are the very students we believe most need this experience.

Qualitative data, on the other hand, showed some significant gains and students were able to articulate how much they believed their levels of motivation increased, and, in particular, how these gains were tied to the content and structure of the FYE course. On Course objectives clearly include outcomes directly geared towards increasing student motivation, e.g. “successful students. . . discover self-motivation,
finding purpose in their lives by discovering personally meaningful goals and dreams” (Downing, S., 2011). Other course objectives include gaining “self-awareness,” mastering “self-management,” and employing “interdependence” (Downing, S., 2011). In the previous chapter, some of the student focus group comments were presented, such as “the course gave me confidence,” or “I don’t allow myself to struggle anymore,” showing a clear connection between the course and a perceived increased level of motivation.

**Pre-post-test tool misaligned with study.**

The difference between the quantitative data which showed no increase for IA and the qualitative findings in which many students expressed gains in motivation directly tied to the FYE course could point to a possibility that the SmarterMeasure™ as a tool to study the effects of the FYE course on motivation was not appropriate. SmarterMeasure™ objectives, while certainly tied to student motivation and student attitudes, especially in the IA section, appear on the surface to be able to measure a change in student motivation and was also selected, because the pre-test scores were readily available. If it did accurately measure change in student motivation, though, it would seem that the qualitative and quantitative data would show more similar results. In an Achieving the Dream study conducted by Rutshow, Cullinan, and Welbeck (2012) on the impact of an FYE course at Guilford Technical Community College, researchers found that “Guilford’s student success course had a positive impact on student’s self-management, interdependence, self-awareness, interest in life-long learning, emotional intelligence, and positive engagement in college among students with low levels of
these attributes” (p. 3). Guilford Technical Community College also adopted the On
Course curriculum and had a similar implementation plan as North Central. Therefore, it
seems plausible that North Central might find similar results and the tool selected to
measure any change in motivation / grit was not well aligned with the study.

Lack of student engagement.

Reflecting on the responses from the qualitative data on several issues, such as
student attitudes towards time management or procrastination, which indicate that
students only temporarily adopted strategies that they admitted worked, makes one
wonder why students choose the behaviors they do. When they have discovered a
strategy that improves their academic performance, why do they not make it part of
their permanent “toolbox”? One possible explanation is that students’ academic
performance was adequate in their eyes, and they chose not to apply a skill that had
admittedly helped them in the previous semester. Perhaps expected academic rigor in
their courses did not require anything more than getting things done “just-in-time” or
doing “just-enough.” North Central’s 2012 CCSSE (Community College Survey of Student
Engagement) results indicated that student effort and academic challenge were well
below the top-performing community colleges. Student effort for North Central
students was 50.2 vs. 57.3 for the top-performing colleges; academic challenge was 46.1
vs. 57.1, leading one to think that there is room for improved academic engagement at
this college.

Arum and Roksa (2012) discussed a culture prevalent among today’s college
students in which they do not strive for academic stimulation, much less perfection but
demonstrate quite opposite behaviors, i.e. getting away with as little work as possible to get the credential necessary for employment:

Consistent with other studies, we find that students are not spending a great deal of time outside of the classroom on their coursework: on average, they report spending only 12 hours per week studying (...). Even more alarming, 37 percent of students reported spending less than five hours per week preparing for their courses. The limited number of hours students spend studying is consistent with the emergence of a college student culture focused on social life and strategic management of work requirements (p. 69).

It appears that the rule-of-thumb requirement of two hours of study-time for every hour of class-time is no longer applicable for some students. If students are not fully engaged in their role as college students, and are not striving to maximize their learning and development, it is unlikely that there would be an increase in their motivation / grit score. First-semester GPA for the sample was 2.95, however, indicating that students managed to pass most of their classes. This reinforces the CCSSE findings that academic challenge and student effort are at less-than ideal ranges at North Central.

**The faculty role in increasing motivation.**

Arguably, faculty have a critical role in setting the standards for high expectations for their students on any campus. In the previously cited work of Chambliss (2012), he found that motivation was an “outcome of college” (p. A28). Chambliss found that faculty did have an impact on student levels of motivation and students could point to a “critical conversation” when they believed this spark occurred. In follow-up
conversations the author had with Chambliss, it was believed that these critical
cmoments or conversations could be especially important during the first year and could
happen within an FYE course. Student comments (from focus groups) enforced the
strong positive opinion they held towards their FYE instructor, whom they also referred
to as their “accountability partner.” While information about college expectations is
undoubtedly covered in most marketing materials and new student orientations, the
“rubber hits the road” when students experience first-hand what level of effort it will
take to do well in a class. Unfortunately, prevailing student attitudes, discussed in Arum
and Roksa’s work (2012), seem to suggest that students are not necessarily seeking out
the most challenging professors and are, therefore, not in an optimal condition to be
motivated. In Rebekah Nathan’s book, titled My Freshman Year (cited in Arum & Roksa,
2012), student recommendations to their peers included comments, such as, “Take
Professor Jones, the man to see when you need an ‘A’ or “I loved 101. It was sooo fun!
And sooo easy!” (p. 76). With these comments as a backdrop, it might be more easily
understood when Arum & Roksa (2012), citing the work of George Kuh, calls the current
climate on many college campuses a “disengagement compact,” i.e.

“I’ll leave you alone if you leave me alone.” That is, I won’t make you work too
too hard (read a lot, write a lot) so that I won’t have to grade as many papers or
explain why you are not performing well. The existence of this bargain is
suggested by the fact that at a relatively low level of effort, many students get
decent grades-B’s and sometimes better (p. 5).
The idea of such a “compact” is especially confounding when one considers that students, on average, report studying less than two hours per day (Arum & Roksa, 2012). Grit is defined by striving for “optimally challenging” goals (Shechtman, et al., 2013), “those that are within the student’s range of proximal development—not too difficult and not too easy. Students will find goals worthy of pursuit when the goals resonate with their personal values and interests“ (p. vii). If students lack intrinsic motivation / grit to be challenged and are not extrinsically encouraged to perform at a higher level than they have before, it is entirely possible that their motivation level was stagnant.

**Quantitative data: Lack of social integration.**

Another possible explanation for these findings could be that when the post-testing was conducted (towards the end of the first semester), students felt no one was paying close attention to how they were doing and with the anticipated absence of an “accountability partner” (their FYE instructors) they chose an attitude of “just enough.” This is in line with Tinto’s (1994) theory of attrition tied to student integration. Through academic and social integration, students form a strong connection with the college that helps them persist until their goals are achieved. Social integration can happen through personal relationships established with faculty or staff on campus. According to the faculty at North Central, very few students take advantage of instructor office hours, which could explain why their level of interdependence (measured by the IA score) did not increase. During one recent orientation program for new students, one instructor was so vehemently trying to make the point to students that he wanted to see them
during his office hours that he got down on his knees and begged them to come! On average, students in Arum and Roksa’s (2012) sample saw a faculty member once per month outside of class and some (9%) never saw a faculty member outside of the class. Establishing social integration seems hardly possible with this low number of interactions. North Central’s 2012 CCSSE data showed a score for student and faculty interaction of 52.6 vs. 58.4 for top-performing colleges. Chapman and Pascarella (1983) found that the opposite of Tinto’s model was true for community college students: “persisters in 2-year colleges had significantly less (emphasis in text) informal contact with both faculty and peers than did those who withdrew” (p. 319). The combined findings of these studies help to demonstrate that the concept of social integration requires further definition that is applicable to community college students.

It is possible, perhaps at a smaller college such as North Central, that faculty and students can connect well within the normal class-time due to smaller class sizes. But it does seem counter-intuitive that students would not take advantage of the personal relationships they may have formed in class to talk with their instructors outside of class. Chapman and Pascarella’s (1983) study perhaps simply highlighted what we know of community college students: they are balancing many roles, and college is just one of them. When they are not in class, many are working- sometimes multiple jobs, taking care of kids, and handling life’s stresses, demonstrating a high level of “grit” elsewhere in their lives. Many do not have the luxury of staying on campus to talk with professors outside of class. While not a focus of this study, it could be particularly important for first-generation students to learn and practice this skill of interdependence – knowing
when and how to ask for help - early in their college careers. The students in the focus
groups appeared to have learned this important skill, demonstrated by their frequent
use of resources, such as the Writing Lab and tutoring. The comment made by one of
the students, stands out in emphasizing this point:

Student: And so, at the beginning, when we wrote our first paper, I got a D.
Then, we wrote our second paper. And I went to the Writing Lab once. I got a C.
Each time I visited the writing lab more, I got a B, and now I’m working towards
an A. She just sent me back my paper in my email today and she said, looking like
an “A.” And I was like so excited. I jumped up in bed. Because I’ve been really,
really working hard and it’s like each time I visited the Writing Lab I did better
and better.

Quantitative data: Sample size and number of variables

The sample of current students was carefully controlled to include only first-time
students in fall or winter of 2011 - 2012. Many new students to North Central who did
not meet this criterion (e.g. former dual enrolled students or transfer students) were
excluded. The variables of age, sex, enrollment status, program and placement levels
were selected based on previous research on FYE courses (Tinney & Dillon (n.d.); Glass &
Garrett (1995); Fidler (1991); Green (1998); Schnell & Doekkott (2003); Montgomery,
Jeffs, Schlegel & Jones [2009]), as was described in Chapter 3. The low R² score
suggested that the generalizability of the findings was low (Vogt, 2007). When
narrowing down sub-groups, it became difficult to make practically relevant analyses,
e.g. the size of the group of adults who were aged 30+ was only 13.
For future research, it would be ideal to have a larger sample size or to decrease the number of variables to the ones that were found to be most significant, in the case of this study, age, first-term GPA and math placement. According to Vogt (2007), it is better to err on the side of more variables than fewer in regression, as he argues “if you leave something out, not only do you miss the opportunity to collect information about it, you also run the very great risk that your estimates for the variables you do include will be biased upward” (p. 168). In analyzing the data, it would have been helpful to have students’ high school GPA to add to the list of independent variables (input) and it may have predicted an increase in motivation more than anything else. However, high school transcripts are not regularly collected as part of the admissions process and it was deemed too much of a barrier to collect them for this research. Vogt (2007) aptly described the reality of conducting research when he expressed that, “one of the criteria researchers use to ‘decide’ what to include is to ‘choose’ to include information that is readily available to them. The world is not set up for the convenience of researchers” (p. 168).

**Question 2: Does the student’s mindset / locus of control measurably change from fixed to growth after taking the FYE course?**

While IA scores universally did not increase in this sample of students; LC scores did, regardless of FYE enrollment. An increase in LC score at post-test demonstrates that students in this sample increased their way of thinking from “fixed” to “growth” after one semester of attending college. This indicates that students felt they were more in control of their futures, and believed they could reach their goals through hard work and industriousness. The specific questions that resulted in a sub-score for LC were:
This could be explained by the notion that all students in the sample had experiences with other students and faculty / staff in their first semester that showed them that intelligence is not immutable and that many people succeed through hard work / determination. Stories of how personal challenges were overcome simply to enroll in college abound at North Central and other community colleges.

The FYE faculty were also consulted about this finding. They believed that the integration of a regularly scheduled panel of North Central faculty and staff who talk about their real-life successes and failures (in SD 125) helps to demonstrate to students how hard work pays off and that there is a way to overcome barriers. They also expressed that this result could be a positive indicator showing that most North Central faculty are able to introduce the concept of the growth mindset in their classes. This is arguably not done in an explicit manner but certainly in a relevant manner for the students. It could even be related to the On Course training that a large majority of full-time and several part-time faculty have had.

**Question 3: Do the current curriculum and objectives of the course effectively address these student motivational skills?**

Conversations with the two lead faculty helped to inform the answer to this final research question. The current policy to mandate that developmentally placed students
take SD 125 has been in place for two years. It is perhaps premature to consider changing this policy, especially given the likely possibility that the Smartermeas re as a tool was not aligned well with this study. It is not, however, too early to ensure that the most critical components that have the potential to impact student motivation / grit are adequately addressed in this course.

**The limited impact of one course.**

The author’s hypothesis placed a heavy expectation for one course to make a measurable difference in students’ lives. Arguably, students in an associate degree program would have taken around 20 courses and the compilation of those courses, in total, would help to make a well-rounded graduate. It is possible, that too much expectation was placed on one course, after only one semester. Berlin, G. in Rutschow, Cullinan and Welbeck (2012) stated that: “While success courses may provide a positive benefit to students’ understanding of college and its expectations, such courses may need to be more limited or integrated within larger structural changes in developmental education to improve students’ academic progress” (p. v). North Central has recently adopted the Lumina “Degree Qualifications Profile” (DQP) as its assessment platform. The following outcomes are addressed in each of the degree / certificate programs: broad, integrative knowledge, specialized knowledge in a focused area of study, intellectual skills, applied learning, and civic learning (North Central Michigan College 2012-13 catalog). While individual courses can and certainly do address many of these outcomes, the intent is that students would be able to demonstrate significant learning
in the five outcomes at the time of earning a degree. One FYE course, on its own, cannot do it all.

Variables impacting individual attributes / locus of control scores.

When ANOVA was used to study categorical variables, the only significant variable in IA score was age. For students who were aged 30+ who had taken the FYE course, IA scores increased when measured at the time of post-test. Given that there were only 13 students in the age group, one must be cautious in interpreting the data. Also, in stepwise regression for LDIFF, age was a significantly positive variable in predicting an increase on locus of control, indicating that as students got older, their mindset tended to change more from “fixed” towards “growth.” While it is premature to identify age as a significant variable from this study alone due to the small number of students affected, it is not unusual for adult students to show a higher intrinsic motivation than traditional-aged students (e.g. Williams & Williams, n.d.; Glass & Garnett, 1995). A combination of life experiences, the desire to act as a role model for one’s children, the realization of the value of education, and other factors all can play a role in adults being more focused on their studies compared to students right out of high school. The FYE course, particularly using the On Course text with its personally reflective curriculum, could be a good match for some adult students to gain the confidence and motivation to do well in college. FYE faculty strongly confirmed this finding and indicated that it is the younger student, right out-of-high-school, who sometimes struggles with being successful in the class. The older students seem to want
to seek out answers about how they can be successful students, and fully engage themselves in the class.

GPA and one level of math placement (Beginning Algebra) were significant predictors for LCDIFF. This finding matches that of the study done by Cho, Jaggers, Karp, Jenkins and Edgcombe (2010) in which they found that students were placed into one step below college-level math benefitted the most from a success course. It also corresponds to the findings by Miller, Janz, and Chen (2007) who concluded that students of all abilities benefitted from taking an FYE course. It is not surprising to find GPA as a predictor for IA change, though this is somewhat in contrast with the qualitative data that revealed that some students with a higher pre-course motivation level did not perceive that the course helped to increase their motivation. This finding demonstrates the challenging reality that many community colleges face: the students who most need support and are least likely to achieve success in college can be the most difficult to reach through our interventions. Even small improvements with this highly at-risk group are sometimes noteworthy.

In a meta-analytic review conducted by Robbins, Lauver, Le, Davis, Langley, and Carlstrom (2004) of psychosocial factors affecting college success, they found that good instruction had no impact on students with low locus of control (GPA). Castiglia (n.d.) found similar results when she studied differences in student motivation between students with high and low GPAs. Students with higher GPAs were motivated to a greater degree by learning the subject matter (73%) than students who had lower GPAs (50%). The reverse was true for the effects of a professor on their motivation; 56% of
students with higher GPAs found motivation through the professor, while 72% of those with lower GPAs did so. Chapman and Pascarella (1983) added that “social needs were prized most by students with low grade point averages; self-actualization needs by accelerated degree students” (p. 11). These findings help to demonstrate the challenging task community college faculty assume:

The faculty member attempting to build motivational factors into his or her course will find himself or herself as befuddled as the manager in a business setting who attempts to motivate all of his or her employees by using the same strategies. A ‘one size fits all’ motivational tool will fail in academia as surely as it has failed in the world of business (Chapman & Pascarella, 1983, p. 8).

High school and college grades are used in many selective programs / colleges to predict future academic performance. According to Sawyer (2010) who wrote in a recent ACT report, “high school GPA by test score interactions are important in predicting academic success” (p. ii). The concept of GPA could also be broadened beyond simply demonstrating academic performance to demonstrating certain social skills and attitudes. According to Sawyer (2010), “college grades are also composite means of cognitive ability and academically relevant behavior” (p. 1). It may be this “academically relevant behavior” that is highlighted by the increase in IA score for students with higher GPAs. This finding suggests that it was the students with the lowest level of needs who benefitted from the course the most by increasing their motivation.

**Effect of mandatory policy.**

The mandatory policy for SD 125 first took effect in the fall of 2011, the first semester of the data collection for this study. In that first semester, and even today,
several students challenged the policy. When it first took effect, the people with whom
students were interacting, from advisors, to front-line staff to instructors, were not
speaking with one voice about the importance of this course. Since the policy only
affected developmentally placed students, it was not simple, at first, to talk about the
course in a very positive light for some of the staff. Instructors were somewhat
ambivalent as they saw the need to make something important “stick” with a policy that
consistently applied the same treatment to all students but they were also somewhat
anxious about working with students who were forced to take the class. Even today,
some instructors talk about having to persuade poorly motivated students at the
beginning of the semester about the value of the course. Instructors indicate that some
students come around, and some do not. The fact that some students had to take the
course and were perhaps negatively skewed towards it could have limited any gain they
could have, had they approached the course with an open mind. In one of the focus
groups, one student expressed this perception, emphasizing the fact that some students
resented having to take the course, “after I actually took the class seriously, because at
first I thought it was a joke, and then I actually started paying attention and seeing how
much it helps.”

Summary
Quantitative data showed no impact on student motivation / grit as measured by
the pre-post IA score, though many students reported that their motivation levels
increased through qualitative feedback. Locus of control did increase for all students,
suggesting that students’ mindsets changed from fixed to growth after one semester of
college attendance. A number of possible explanations were discussed for the disappointing quantitative results. Three general scenarios were that either (1) the tool which was used to measure motivation could have been misaligned, so as to not pick up any actual increase between pre-and post-test, or (2) motivation decreased very slightly after students re-evaluated themselves (and scored themselves lower at post-test) after experiencing their first semester of college or (3) a lack of motivation could be attributed to a low level of academic and social engagement. Many times the quantitative and qualitative data were at odds with each other. Much of this difference was attributed to a misalignment of the tool (Smartermeasure™) that was selected to conduct both the pre- and post-test. A different measurement tool, perhaps more closely tied with the course outcomes, could provide future researchers a more focused lens with which to study the effects of FYE on student motivation / grit. Advisors, faculty, students, and administrators should carefully review this information and evaluate, from their own perspectives, the value that this course adds to student success measures, including motivation. While it was the author’s goal to more clearly understand the components of the FYE course and impact on student motivation, the answer is yet elusive. Further investigation will need to occur, perhaps using a different pre-post-test tool, a more focused set of variables including high school GPA and/or a larger sample of students. Additional recommendations for future studies will be discussed in the next and final chapter.
CHAPTER 6

Conclusions and Recommendations for Future Work

“It is time that closer attention was paid to affective life in the classroom” (Weiner, 1979)

This study aimed to further advance knowledge of the effects of FYE courses, particularly on student motivation / grit and to more clearly understand answers to the following questions:

1. Does the students’ perception of their persistence / level of “grit” increase after taking the FYE course?

2. Does the student’s mindset / locus of control measurably change from fixed to growth after taking the FYE course?

3. Do the current curriculum and objectives of the course effectively address these student motivational skills?

While many previous studies have focused on how the FYE course impacted academic outcomes, such as grade point average, persistence / retention and graduation rates (e.g. Zeidenberg, Jenkins, & Calcagno, 2007; Miller, Janz, & Chen, 2007) there were fewer that also studied the impact of an FYE course on student attitudinal factors / engagement (e.g. Fidler, 1991; Davis-Underwood & Lee, 1994; Barton & Donahue, 2009; Mills, 2010). While outcomes, such as persistence, GPA, and graduation,
could be used as proxies for motivation, there were none, to the author’s knowledge, that specifically focused on motivation / grit.

This study was unable to demonstrate significant gains in student attitude towards persistence / grit for FYE students, as measured by a pre-and post-test for “Individual Attributes” (a Smartermeasure™ product), rejecting the author’s hypothesis. There was a gain in “Locus of control” after one semester, a measure of fixed vs. growth mindset (Dweck). This increase was not limited to FYE-only students but was demonstrated by all new students after one semester. Qualitative data showed strong gains for many students in self-confidence and motivation, use of resources, and sense of connection with faculty and peers. With the lack of significant findings and mixed results for quantitative and qualitative measures, it was premature to make an evaluation of the effectiveness of the curriculum. Additional data must be gathered to establish clearer answers. These findings were unexpected, particularly in light of other studies cited in chapter 2 which used the *On Course* curriculum and demonstrated positive gains (e.g. Brazosport College, Aurora University, Baltimore City College). Also, the limited studies of student affective skills previously discussed, showed increases in behaviors, such as networking with peers and faculty, time management, and active and collaborative learning for students who took an FYE course (e.g. Keup & Barefoot, 2005; Mills, 2010; Barton & Donahue, 2009), results which were similar to the qualitative findings but not the quantitative data of this study.

Many AtD colleges aimed their initiatives at their most at-risk students in the first year. North Central was one of these colleges and put a tremendous amount of
effort into advising new students, putting in place intentional programs, such as
mandatory orientation and early alert, and training its faculty on using tools, such as
reading apprenticeships and the On Course (OC) success strategies. The FYE course,
using the On Course curriculum was one of the college’s efforts to increase success for
developmental students. The curriculum was selected because of its potential for
students to dive deeper and not simply teach them new study skills but to change the
behaviors in their lives that may prevent them from enjoying academic and personal
success. While short-term success was initially a result of the college’s efforts, long-term
success remained elusive. In large part due to this, the author became interested in the
study of motivation / grit over the last few years and desired to determine if there was
applicability with the FYE course, i.e. could it be demonstrated that the current FYE
course, with its OC curriculum, showed measurable changes in student motivation /
grit? This study was not able to definitively affirm an increase in motivation for FYE
students with the measures that were used. Other studies using the OC curriculum were
able to demonstrate gains in student success factors, such as at Baltimore City
Community College (increase in persistence and success in content course), Brevard
Community College (increase in persistence and retention), and Cuyahoga Community
College (increase in student confidence levels) (On Course, 2012). However, there were
some studies that did not find a significant positive connection between taking an FYE
course and increased student success measures. For example, Hendel (2001) found no
impact on retention or student satisfaction (comparing FYE to non-FYE students),
McElroy (2006) found no impact on course completion rate of developmental English
and reading courses and Schrader and Brown (2008) found no impact on student
knowledge, attitudes, and behaviors.

While this study was unable to definitively demonstrate an increase in student
motivation / grit tied to enrollment in an FYE course, further examination is suggested
with the following specific recommendations:

- Explore the impact of an FYE course as an early alert system: Hyers and Joslin
  (1998) found that

  “a logistic model using only FYS grade is as good (emphasis in text) at
  predicting persistence (to the sophomore, junior, and senior years) as
  models constructed with other first-semester achievement variables, and
  clearly better (emphasis in text) than those based on SAT and/or high
  school rank” (p. 19).

The FYE course sets up a microcosm of the college student experience and
students can experiment with new strategies, trying, failing, and being
redirected or trying and succeeding, in a supportive atmosphere. One of the
weaknesses of current early alert systems is that faculty have to report students
in a separate system or to a separate administrator, usually adding another step
to their busy schedules, hurting participation rates. If the FYE course was
identified as the early alert system for new students, struggling students could
be identified and get the assistance they needed, while faculty could more
closely monitor and support the very students who were most in need. Assigning
mid-term grades in the FYE course could provide early feedback to students
about their performance and could be tied to required actions (e.g. tutoring) to
increase students’ chances of success. Studying the effect of an FYE course as an early alert mechanism is a potential area for future study.

- Focus on what type of student most gains from an FYE course (and in what way), with particular emphasis on comparing the positive effects of different curricula. Many of the previous studies do not indicate which curriculum was used or whether there might be additional strategies that were being leveraged to increase first-year student success. Many studies (e.g. Schnell & Doetkott, 2003; Fidler, 1991) focused on traditional-aged students, which do not reflect the varied student populations found at community colleges. Mills (2010) found that different types of students equally gain from an FYE course: “older students, underprepared students and college-ready students may gain from different success course experiences” (p.282). Cho, Jaggers, Karp, Jenkins, and Edgcombe (2010) found that women gained the most by taking an FYE course as well as students who were one level below college algebra (i.e. moderately at-risk). The latter finding complements what this study was able to demonstrate, as well. Strumpf and Hunt (1993) found that taking an FYE course significantly impacted retention and academic success especially for Black students. First-generation students continue to be a high-risk group for college success (DeParle, 2012) and understanding the impact an FYE course might have on this sub-population is important. Further refining the understanding of what type of curricular approach addresses the needs of certain types of students would be a valuable addition to the FYE body of literature.
• Extend the study of social integration specific to community college students: Tinto (1994) advanced a model of student retention that showed the importance of academic and social integration. Chapman and Pascarella (1993) found that social integration was not a significant factor in retaining community college students. Other FYE studies, such as Barton and Donahue (2009), Keup and Barefoot (2005) and Davis-Underwood and Lee (1996) demonstrated gains in social integration by tracking the frequency of faculty and peer contacts; use of services and attendance at campus events. Social integration could be intentionally embedded within an FYE course through assignments, such as interviewing a student or meeting with a faculty member. Gaining a clearer understanding of how social integration impacts community college students, with particular emphasis on how an FYE course impacts the sense of social integration would extend the current research available on FYE. Reaching out to former FYE students no longer enrolled at the college (i.e. drop-outs) may also illuminate reasons the FYE course did not sufficiently meet the social integration needs of certain types of students. These students are more difficult to reach but can shed valuable insight into what did and did not work within the FYE course.

• Study the effect of professional development for faculty on mindset and subsequent ability to increase student motivation: Faculty members have a critical role in teaching, guiding and inspiring their students. As Dr. Chambliss (2012) stated, faculty can and do have a role in increasing motivation for students. Tying that role back to the fixed vs. growth mindset theory, Dweck
explained how instructors view their students when they themselves approach their work with a fixed vs. growth mindset:

For the educator with a fixed mind-set, learning is the students’ responsibility. If students don’t have what it takes, so be it. But for the educator in a growth mind-set, learning is a collaboration in which the teacher has great responsibility (p. 28).

Lessons learned from the original 26 AtD colleges were that there must be significant investment in professional development to change institutional culture (Rutshow, Richburg-Hayes, Brock, Orr, Cerna, Cullinan, Kerrigan, Jenkins, Gooden & Martin, 2011). The importance of professional development for faculty on the concept of mindset seems to have great promise and is a potential area for further examination. Adopting the growth mindset was found to be especially powerful for at-risk students, the very students who are likely to attend community colleges. Dweck (2010) found that, “every group seemed to benefit from holding a growth mind-set, but the stereotyped groups gained the most” (p. 29).

- Extend the study of motivation for community college students by further collaborating with the data collection efforts through Stanford University’s PERTS (The Project for Education Research That Scales) study: Stanford University has been conducting studies to determine the impact of teaching students how to acquire a growth mindset using a control group and experimental group design. The experimental groups learned how the brain was like a muscle and that intelligence can be increased. The control group learned
how the brain works but was not taught that intelligence can be increased. Data from several middle schools showed promising results, measured by increases in GPA for students in the experimental group (Perts, 2012). If the results can be extended to college-aged students, it seems that the PERTS experiment could be an effective tool to increase student success with the ability to bridge the demographic gaps that are inherent in our community colleges. North Central was one of the pilot colleges for the PERTS study in the fall of 2012.

- Study the First-Year Experience as a comprehensive and holistic array of services and experiences, not simply as a stand-alone course: If more students were intentionally taught to adopt and practice the “incremental” traits that are described below by Blackwell, Trzesniewski, & Dweck (2007), success rates may increase. One of the vehicles to teach these strategies could include an FYE course with a consistent curriculum or a comprehensive First-Year Experience program.

  Relative to entity theorists, incremental theorists have been found (a) to focus more on learning goals (goals aimed at increasing their ability) versus performance goals (goals aimed at documenting their ability; see e.g., Dweck & Leggett, 1988); (b) to believe in the utility of effort versus the futility of effort given difficulty or low ability (e.g., Hong, Chiu, Dweck, Lin, & Wan, 1999); (c) to make low-effort, mastery-oriented versus low-ability, helpless attributions for failure (e.g. Henderson & Dweck, 1990); and (d) to display mastery-oriented strategies (effort escalation or strategy change) versus helpless strategies (effort withdrawal or strategy perseveration) in the face of setbacks (e.g. Robins & Pals, 2002)” (p. 247).
FYE instructors commented that it was not until the fall of 2012, one year after the data collection occurred, that they introduced specific lessons to increase LC, and the results were not available at the time this study was conducted. Expecting one course, such as the FYE course, to have short-and long-term gains for numerous types of outcomes is perhaps unrealistic. “While success courses may provide a positive benefit to students’ understanding of college and its expectations, such courses may need to be more limited or integrated within larger structural changes in developmental education to improve students’ academic progress” (Rutshow, Cullinan, & Welbeck, 2012, p. v). This study’s finding that “grit” did not increase for FYE students could simply confirm that it was not a concept that was stressed in the curriculum. This lack of focus on “grit” could help to explain why there were short-term positive gains for students who took the FYE course but not longer-term gains. Studying colleges that have embraced a holistic, systemic change for first-year students could provide rich material for further study.

• Study the impact of a common curriculum delivered through an FYE course: If an FYE course is taught with a common curriculum, it provides the chance to offer a consistent experience to new students. This, in itself, is valuable to both the institutions and the students, beyond the common measures of student achievement. Without the FYE course as an anchor in the student experience, there are several variables that determine what type of experience students might have, e.g. student enrollment status (full-/part-time), location, and timing.
of courses (on-campus or off-campus or daytime or evening), or reliance on
advisors prior to registering. Depending on the student characteristics, it can
mean students have widely varied experiences in their first year. Some of this
variability can be controlled if all students took an FYE course. The ways in which
a common curriculum in the first semester / year impacts student success
measures is an area for future study. This would be a time-series comparison
(Cuseo, 1997) in that student success prior to implementing the common
curriculum would be compared against success after implementation.

- Improve alignment of quantitative and qualitative data: In this study, the
quantitative and qualitative data did not always complement each other and
occasionally had contrasting results. Future researchers are encouraged to
continue a mixed methods study to incorporate student voices into the findings
but to strive for stronger alignment of quantitative and qualitative outcomes.
The many pointed responses students provided through focus groups could be
instructive for adjusting the FYE curriculum to embed certain high-impact
activities, e.g. the use of resources, such as the Writing Center, into course
expectations. It was possible to apply the mechanics of Astin’s IEO model to a
single-institution study, despite the fact that the statistical results were
unsatisfactory. Padgett & Keup (2011) discussed the need to tie FYE assessments
more closely with FYE objectives, beyond traditional measures of “retention,
satisfaction and grade point average” (p.62). This study may have not been
sufficiently tied to the objectives of the *On Course* curriculum, providing an
explanation for the inconclusive results. Researchers interested in replicating this study are encouraged to collect a larger sample of students or limit the number of selected variables to try to increase the significance level of the findings. Also, alternative pre-and post-testing methods, e.g. “Your First College Year” (YFCY) (Keup & Barefoot, 2005), Duckworth’s Grit scale (2009) or surveys specifically designed to study motivation / mindset may result in a better fit to measure change in motivation / grit. Future researchers interested in a pre-post-test design might also consider administering the pre-test shortly after students have begun their coursework (not prior to, as was done in this study). This timing could help to mitigate any sense of over-confidence students may have because of not understanding college expectations.

What has been learned from the first few years of Achieving the Dream (AtD) is that it has proven extremely difficult to “move the needle” on long-term retention and graduation rates, especially for developmentally-placed students, the focus of AtD strategies. Berlin (2011) wrote in a preface to an evaluation of AtD’s first five years, “increasing student achievement and persistence levels in the colleges remain a huge challenge” (xi). Student issues are complex and can vary from institution to institution, meaning that an initiative that works at one, doesn’t automatically work at another. Many times, the battles that students face are greater than what colleges are able to handle. The author urges others interested in this field to continue pursuing this important issue. The responsibility of community college leaders is to create the
structure and set of experiences for all students that allow them to succeed. The FYE course appears to have a role in that success and has the potential to be used effectively to increase motivation / grit and a growth mindset. Despite the lack of significant findings in this study, the area of FYE continues to be a rich source of further examination and would greatly benefit from focused efforts by others, especially those interested in community college research.
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APPENDIX
A: Smartermeasure™ “Individual Attributes” Assessment
Smartermeasure™ “Individual Attributes” Assessment

This section measures items such as time management, procrastination, persistence, academic attributes, locus of control, and willingness to ask for help. There are no "right" or "wrong" answers. Indicate the answer choice which best describes how you really are, not how you may feel you should be or how you may feel the school would like for you to be.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Not like me at all</th>
<th>Not much like me</th>
<th>Somewhat like me</th>
<th>Very much like me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I usually get things done without having to be directed by others.</td>
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<tr>
<td>2.</td>
<td>Considering my personal and professional schedule, I can commit at least 7-10 hours per week to study. Note: The amount of expected study time per course may vary significantly depending on the school and the specific course.</td>
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<td>3.</td>
<td>I am likely to delay working on an assignment until it is almost due/near the deadline.</td>
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<td>4.</td>
<td>When I have an assignment or chore I don't like, I typically start working on that task and keep at it until it's done.</td>
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<td>5.</td>
<td>I think that some people are naturally more intelligent than others.</td>
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<td>6.</td>
<td>I usually finish things I start.</td>
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<td>7.</td>
<td>Other than work-related activities, I can plan what I do and when I do it.</td>
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<td>8.</td>
<td>I have never dropped out of an academic program (high school or college).</td>
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<td>9.</td>
<td>I have already thought about how I will need to change my schedule to fit this course in.</td>
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<td>10.</td>
<td>I am comfortable reading for more than 30 minutes at a time.</td>
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<tr>
<td></td>
<td>Statement</td>
<td>Not like me at all</td>
<td>Not much like me</td>
<td>Somewhat like me</td>
<td>Very much like me</td>
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<tr>
<td>11</td>
<td>I am interested in taking college courses to earn a specific degree.</td>
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<td>12</td>
<td>I am willing to spend significant time and energy to participate in an online course.</td>
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<td>13</td>
<td>I need to have someone set deadlines for me to get things done.</td>
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<td>14</td>
<td>I feel that chance has a lot to do with being successful.</td>
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<td>15</td>
<td>I like to figure things out on my own.</td>
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<td>16</td>
<td>I often have trouble getting things done on time.</td>
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<td>17</td>
<td>I agree that school success is mostly a result of one's socio-economic background.</td>
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<td>18</td>
<td>I am concerned about being successful in this program.</td>
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<td>19</td>
<td>If faced with a problem I couldn't solve, I would ask the instructor for help.</td>
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<tr>
<td>20</td>
<td>I am able to express myself well in writing.</td>
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<tr>
<td>21</td>
<td>I usually get things done ahead of time.</td>
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<td>22</td>
<td>When I don't understand something, I am hesitant to ask the instructor for help.</td>
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<td>23</td>
<td>I have always completed the courses that I started.</td>
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<td>24</td>
<td>I feel that if I set realistic goals, I can succeed no matter what.</td>
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</table>
APPENDIX
B: Student Consent Form
Dear Student:

As part of a doctorate study through Ferris State University, I am collecting data on whether there is a change in student skills with enrollment (or not) in SD 125, the First-Year Experience. Some of you are currently enrolled in the course.

The data I am currently collecting may be used for this research to determine the impact of the SD 125 course and may be used for continuous improvement of the course. It will be matched with your original “Smartermeasure” scores (if available) and then put into an aggregate format. All data will be used anonymously, without any connection to individual respondents.

This test should take no more than 5-7 minutes. Your participation is voluntary and there is no connection to your course grade.

If you have recently taken this test in another class, there is no need to retake it now.

Thank you.

____________________________________
Student Name (please print)

____________________________________
NCMC ID # (for matching with original Smartermeasure score)

I have read the above explanation and agree to participate in the study.

____________________________________
Student Signature
APPENDIX
C: Instructor Request
Sample Email Request to Instructor to conduct Post-test Smartermeasure Survey

As part of my dissertation study, I am collecting pre-and post-test scores for students who are enrolled (and not) in SD 125, the First-Year Experience. I am specifically looking to see if there are differences in their student skills of willingness to seek help, time management, and motivation.

I am hoping to administer a very brief paper-and pencil survey to your students (part of the Smartermeasure test) prior to the end of the semester. I have received institutional approval to conduct this survey. It should take no more than 10-15 minutes.

I would like to come to your class in Petoskey on Wednesday, December 7 at 8 pm (CJ 101 A) If this is a bad date or time for you and your students, please let me know. Thank you for your assistance.
APPENDIX
D: Student Request
Sample Email to Student Inviting to Participate in Focus Group

Hi,

As a former student of SD 125 (First Year Experience), I invite you to a focus group session to learn more about your experience in the course you took last fall. I will ask you a few questions about the content you found most valuable, the skills you still use today and a few other items. If you participate for the length of the focus group (approximately 90 minutes), we will give you a $20 gas card.

Please let me know you’ll be able to attend by confirming with Laurie Cornett, lcornett@ncmich.edu and don’t forget to tell us which session we should plan to see you. Thank you;

Naomi DeWinter
Dean of Student Services
231.348.6618
ndewinter@ncmich.edu
APPENDIX
E: Faculty Interview Questions
Faculty Interview Questions

1. How do you make sense of the data that there was no change in IA between pre-test and post-test?

2. Discuss contrast between qualitative and quantitative data
   a. Procrastination/ time management was identified as an important skill but students did not adapt as habit
   b. Interdependence/ use of resources also appeared to increase from qualitative data

3. How do you make sense of the data that LC went up for all students?

4. Which types of students typically show stronger gains in SD 125?
   a. Is it your experience that adult students show stronger gains in SD 125?

5. How did the mandatory policy affect incoming student motivation?

6. What behaviors do students portray who do not connect with the course and consequently, do not perform well in the course?

7. In stepwise regression, significant variable for IA was term GPA, i.e. stronger students had more gain in IA....does your experience validate this finding?

8. Which parts of the curriculum do you believe specifically address motivation/ grit?

9. Do you believe any significant content is not addressed sufficiently in the course?
APPENDIX
F: Student Focus Group Questions
SD 125 Focus Group Questions

1. How did SD 125 change or help you more clearly define your academic/ personal goal?

2. What skills/ knowledge do you still use which you learned in SD 125?

3. What aspect of SD 125 helped you the most (while taking it)? (the prof, the other students, the guest speakers, the book/ content)

4. Which module/ chapter most helped you? (show them the chapters in the book, also discuss Me- project)

5. Which of the study skills most helped you in your other classes?

6. The data we are collecting shows that students do better in their classes in the semester in which they take SD 125 but that after that, the gains disappear. Why do you think that is?

7. What would most help you now?

8. How does part of your current success tie into something you learned in SD 125?

9. Rate your motivation as a student prior to taking SD 125 and afterwards. Was there any difference?

10. How has SD 125 changed your habits of procrastination (if applicable)? Give an example.

11. In retrospect, explain your expectations about college last fall (when you were a new student) and do you think they were on target?

12. How have your time management skills improved after taking SD 125? (ask about planner use)

13. How did SD 125 give you the skills to interact with your instructors more frequently?

14. How do you gauge when to ask for help of others?

15. Is there anything else that would help us understand how SD 125 affected you as a student?