

THE CLIFTON STRENGTHSFINDER® AND STUDENT STRENGTHS DEVELOPMENT

A REVIEW OF RESEARCH

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Strengths Rules

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“What would happen if we actually study what is right with people?” There is a short answer to this question posed by Dr. Donald Clifton, a pioneer in the field of strengths psychology and creator of the Clifton StrengthsFinder. In the last 50 years, Gallup has learned that people and organizations grow more when they focus on what they do best rather than trying to fix their weaknesses.

Doing what you do best is not always easy. Based on Gallup’s research in North America, Europe, and Asia, only about half of the people studied take a strengths approach to school, work, and life. So, it can be hard for a student or employee to put the strengths approach into practice if every other person he or she meets believes that fixing weaknesses is the primary path to success.

The change agents who adhere to the strengths approach have worked hard to create exercises, training modules, and classes that encourage people to do what they do best. Some of these activities are brilliantly designed and executed. Others are not. Most have not been evaluated for their effectiveness.

Which strengths development programs are effective and why? That is a question we have to answer if we are to optimize the efforts of educators, managers, and leaders. This review of the literature conducted by Dr. Michelle Louis of Bethel University is a summary of what we know about strengths development and a guide to what we need to do next.

Based on my review of this paper, I have constructed a set of “strengths rules” that I encourage everyone to follow when they are designing new activities to help people do what they do best. These rules are empirically derived and based on key findings of strengths researchers from around the world:

- Knowing your strengths is not enough. Completing the StrengthsFinder is just a starting point.
- Strengths development is aimed at a personally salient goal. Strengths come to life as they help you to answer life’s “now what” questions.
- Development takes tremendous effort. You must apply your strengths in daily life.
- Strengths grow in the context of relationships, teams, and organizations.

With these rules in mind, I believe we can design more effective strengths development programs. We will only know for sure if we become more systematic in evaluating our efforts. Here are tips for determining what works:

- Specify the goals of the strengths development program.
- Base the program on the strengths rules and execute the program as designed.
- Administer validated measures before and after the program to track change.
- If possible, compare strengths development with some other program to determine added value.

With a coordinated effort, strengths practitioners and researchers can determine which programs work and why by 2020. With a more sophisticated understanding of strengths development, we will be able to accelerate our own growth and that of our families and community members, students, and employees.

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A REVIEW OF RESEARCH

INTRODUCTION

The integration of a strengths perspective into increasingly diverse types of educational environments and practices demands concomitant research that explores the effectiveness of these efforts and informs future practice. An overview of the development of the Clifton StrengthsFinder is presented, followed by a comprehensive review of research that explores the nature and impact of efforts to promote student strengths development within secondary and postsecondary education. This review concludes with a series of suggestions for future research on strengths-based initiatives.

THE STRENGTHS PERSPECTIVE

A strengths perspective is characterized by “efforts to label what is right” within people and organizations (Buckingham, 2007, p. 6) and assumes that every individual has personal qualities that can be mobilized toward desirable outcomes in many areas of life (Anderson, 2000; Saleebey, 2001). The strengths approach explores ways to empower individuals toward thriving rather than mere survival (Liesveld & Miller, 2005) and assumes that capitalizing on one’s areas of talent is likely to lead to greater success than would be possible by making a comparable investment of effort into overcoming personal weaknesses or deficiencies (Clifton & Harter, 2003). This paradigm therefore highlights the importance of intentionally choosing to focus one’s attention and energy into cultivating that which will yield the most significant growth (Shushok & Hulme, 2006), which is accomplished not by ignoring weaknesses, but by instead seeking to understand and manage areas of deficiency while optimizing effort by building on strengths (Clifton & Harter, 2003; Clifton & Nelson, 1992). Strengths-based ideology provides insight for the design of intervention programs that prompt individuals toward achieving positive goals and aims (Frey, Jonas, &

Greitemeyer, 2003), as a strengths perspective can produce “the ability to flexibly apply as many different resources and skills as are necessary to solve a problem or work toward a goal” (Aspinwall & Staudinger, 2003, p. 13) by helping people consider the personal resources they can mobilize to achieve favorable ends.

At the individual level, a strengths approach encompasses the identification of positive personal and interpersonal characteristics, along with their integration into one’s view of self, resulting in behavioral changes (Clifton & Harter, 2003). A strengths-based approach also informs current scholarship on organizational behavior by promoting the scientific community’s attentiveness to the positive dynamics and productive practices that exist at the communal or organizational level (Cameron, Dutton, & Quinn, 2003). Regardless of whether the strengths perspective is used to generate understanding and inform practice at the macro or micro level, its central aim is to pinpoint and amplify the promising characteristics of individuals, families, and communities (Saleebey, 2006). All applications of the strengths approach are founded upon the assertion that “human strengths are not secondary, derivative, illusory, epiphenomenal, parasitic upon the negative, or otherwise suspect” (Peterson & Seligman, 2004, p. 4) but that the study of strengths is legitimate in its own right as a way of cultivating wellbeing.

VARIOUS CONCEPTUALIZATIONS OF HUMAN STRENGTH

One approach to understanding strengths views them as talents that have been developed to produce consistent levels of excellent performance in a particular activity (Clifton & Anderson, 2002), and the work of researchers at Gallup is founded upon this particular definition of the terminology associated with the study of human strengths. Although researchers and practitioners adopting other understandings

of strengths have contributed in many valuable ways to contemporary research and practice, this review is focused on a description of the Gallup model of strengths and the research and applications that are derived from it specifically.

Gallup defines *talents* as “naturally recurring patterns of thought, feeling, or behavior that can be productively applied” (Hodges & Clifton, 2004, p. 257), including an individual’s patterns or tendencies when interacting with others, processing information, or navigating an environment. Because these talents are viewed as trait-like and naturally occurring, individuals often use them without conscious awareness of their presence (Clifton, Anderson, & Schreiner, 2006; Drucker, 2000). Clusters of similar talents are grouped into *talent themes*. An individual’s five most dominant talent themes are referred to within this model as *Signature Themes* (Clifton & Anderson, 2002). Signature Themes can be developed through the addition of acquired knowledge and skill to form a *strength*, which is defined as the ability to produce “consistent, near-perfect performance in a given activity” (Clifton & Anderson, 2002, p. 8). Strengths are therefore not listed comprehensively because they are specific to a particular activity or context and can be understood as specific, energizing activities one performs with excellence (Buckingham, 2007).

Clifton and Nelson (1992) propose that there are four indicators of the presence of strengths. Specifically, these authors note that individuals are intuitively drawn to activities that will facilitate strengths utilization, and so they advocate for people to cultivate an awareness of these types of “yearnings” (p. 43). A second signal that a strength may be at use is when an individual derives great satisfaction and energy from investment in an activity, experiencing a sense of engagement and timelessness called *flow* (Csikszentmihalyi, 1990). Rapid learning is another sign of a strength’s presence, and the fourth indicator of a strength in action is that “glimpses of excellence” (Clifton & Anderson, 2002, p. 52) are demonstrated when an individual attempts an activity that requires the use of a particular strength (Buckingham, 2007; Clifton & Anderson, 2002).

THE DEVELOPMENT AND INTENT OF THE CLIFTON STRENGTHSFINDER®

Four decades ago, Gallup researchers began a project focused on an empirical discovery of the components of human strength. Educational psychologist Don Clifton championed this effort, beginning with a series of projects inspired by the question, “What would happen if we studied what is *right* with people?” (Lopez, Hodges, & Harter, 2005, p. 3). Clifton held the unwavering conviction that human strength and excellence could be empirically investigated in a rigorous, widespread manner. He and his colleagues thereby developed semi-structured interview protocols designed to pinpoint the persistent thoughts, feelings, and behaviors associated with situational success in a variety of fields. Gallup subsequently conducted these interviews with more than two million individuals for the purposes of employee selection and personal development (Asplund, Lopez, Hodges, & Harter, 2009).

Clifton and his colleagues systematically reviewed the data generated by the interviews to reveal the anatomy of more than 400 types of talent, creating an initial pool of more than 5,000 items that were candidates for inclusion in a comprehensive measure of positive human qualities (Asplund et al., 2009). This information was subjected to extensive reliability and validity analyses; those items with the strongest psychometric properties were retained, providing the foundation for the 1999 launch of the earliest version of an instrument called the *StrengthsFinder*. This instrument’s first edition contained 180 item-pairs designed to assess a respondent’s top areas of talent from a set of 34 possible themes; this online instrument was the first to provide an omnibus assessment of human talent (Lopez, 2007). It was renamed the *Clifton StrengthsFinder* following Clifton’s death in 2003 (Lopez et al., 2005), and in 2006, researchers began a systematic review of its psychometric properties. Analysts recommended changes for psychometric improvements to theme reliabilities and validities; these adjustments were related to how existing items were scored as well as modifications that required either adding or removing specific items (Asplund et al., 2009).

The revised iteration of the *Clifton StrengthsFinder* contains 177 items, which is a three-item reduction from the previous version. The initial version of the instrument offered respondents a short description of their top five clusters of talent (Signature Themes), as well as suggestions for capitalizing on each, whereas the feedback for the updated version is more detailed and customized in that it is based on both theme-level and item-level data to form a more nuanced description of the respondent's unique pattern of responses (Asplund et al., 2009). Currently available in more than 20 languages, the instrument has been completed by more than eight million people worldwide (Gallup, 2012) and can be modified for individuals with disabilities to allow for greater accessibility. The *Clifton StrengthsFinder* is not designed to measure psychological illness or wellness, but exists to serve as a tool for personal development (Lopez et al., 2005). A common misconception is that the *Clifton StrengthsFinder* highlights an individual's strengths, but the developers of this instrument actually assert that it is intended to instead identify areas of inherent talent that can be deliberately developed into personal strengths. Related supporting materials pertinent for a variety of settings are also available, and these resources are designed to offer strategies for developing Signature Theme talents into strengths within the spheres of leadership, business, education, and ministry (Buckingham & Clifton, 2001; Clifton et al., 2006; Liesveld & Miller, 2005; Rath & Clifton, 2004; Rath & Conchie, 2009; Winseman, Clifton, & Liesveld, 2004). Of particular relevance to this review is the existence of *StrengthsQuest* (Clifton, Anderson, & Schreiner, 2006), which is a text containing additional information about the nature and application of *Clifton StrengthsFinder* results, tailored for students and educators.

STRENGTHS DEVELOPMENT WITHIN EDUCATIONAL SETTINGS

The underlying principles of the strengths approach have found resonance in several fields, including social work (Saleebey, 1997), organizational theory and behavior (Luthans, Youssef, & Avolio, 2007), and education (Anderson, 2004; Mather, 2010). Within the domain of education, strengths-based models have gained increased

prominence within recent years. A strengths-based educational approach is a departure from many of the deficit-based models that prevail in many contemporary circles of practice (Anderson, Cave, & McDowell, 2001). It represents a return to educational principles that emphasize the positive aspects of student effort and elevate student strengths (Lopez & Louis, 2009). A strengths-based education has been defined as one that “involves a process of assessing, teaching, and designing experiential learning activities to help students identify, develop, and apply their strengths and talents” (Anderson, 2004, p. 1). According to Lopez and Louis (2009), this approach includes several components: (a) *measurement* of strengths, achievement, and determinants of positive outcomes; (b) *individualization*, which is a personalized educational approach that considers students' goals, needs, and interests; (c) *networking* with others who can encourage strengths use and provide useful feedback; (d) *deliberate application* of strengths within and beyond the classroom; and (e) *intentional development* of strengths. The objective of strengths-based education is to aid students in applying their talents in the learning process to enable them to reach previously unattained levels of personal excellence (Anderson, 2004), thereby helping students become confident, efficacious, life-long learners whose lives are instilled with a sense of purpose (Anderson, 2000). Engaging students in a strengths development process can catalyze thriving and help students derive maximum benefit from the college experience (Louis & Schreiner, 2012).

Some contemporary writers use the term *talent development* to denote a concept that essentially embodies the strengths approach to promoting student success in that it “arranges resources and learning conditions to maximize student potential” (Kuh, Kinzie, Schuh, Whitt, & Associates, 2005, p. 77). Talent development practices are founded upon the conviction that all students are capable of learning if the educational environment adequately supports this objective by adjusting institutional policies and pedagogical practices to help students realize their potential. Following extensive research on the elements of effective educational practice, one source advocates strongly for talent development to become a central tenet in postsecondary institutions'

operating philosophies because “student success starts with an institutional mission that espouses the importance of talent development and then enacts this vision” (Kuh et al., 2005, p. 266). Institutions that embrace a comprehensive strengths-based approach conduct research to understand successful students on campus, create a campus culture that facilitates students’ discovery of personal talents and strengths, and aid students in the process of finding practical avenues for the expression of their strengths (Shushok & Hulme, 2006).

RESEARCH ON STRENGTHS-BASED EDUCATIONAL APPROACHES

Educational strategies that embody a strengths perspective are now being used in K-12 education (Austin, 2005; Gillum, 2005; Purnell School, 2007) as well as in colleges and universities across the country (Shushok & Hulme, 2006). At the postsecondary level, strengths-based approaches have been introduced into first-year student programs (Cave, 2003; Louis, 2011; Schreiner, 2004a; Stebleton, Soria, & Albecker, 2012; Tomasiewicz, 2011), subject-specific course curriculum (Cantwell, 2005; Passarelli, Hall, & Anderson, 2010), athletics (Robles, 2012), academic advising (Schreiner & Anderson, 2005; Swanson, 2006), student orientation and leadership development programs (Lehnert, 2009; Pritchard, 2009; Tanious, 2012), and other campus-based efforts to promote optimal functioning in college students (Louis & Schreiner, 2012; Schreiner, Hulme, Hetzel, & Lopez, 2007). The following section offers an account of the findings of existing research studies designed to assess the impact of the use of the *Clifton StrengthsFinder* and related strengths-based interventions within the field of education. It also describes emerging research that offers insight into the relationships that exist between the talent themes measured by the *Clifton StrengthsFinder* and other variables of interest within educational settings. The description of each research investigation includes information about the research design, methodology, participant sample, instrumentation, and central findings. Comments related to the appropriate interpretation of each study’s results and noteworthy limitations are also provided.

STRENGTHS INTERVENTION RESEARCH IN K-12 EDUCATION

Although there are no published studies that examine the use of strengths-based educational approaches with students in primary school settings, several such studies have been completed with high school student populations. Each of these investigations was conducted with students during their first year of high school, involved the use of the *Clifton StrengthsFinder* and the associated *StrengthsQuest* text (Clifton & Anderson, 2002) as a basis for the strengths curriculum, and utilized self-report measures to assess the dependent variables under investigation. The following section outlines the methodology and findings of each of these research endeavors and notes the contributions and limitations of these studies.

Research conducted by Gillum (2005) sought to determine whether teaching high school students who scored in the bottom quartile on measures of mathematics performance indicators about their strengths might have a positive effect on these students’ subsequent quality of effort in their mathematics courses and their intentional use of personal strengths. Gillum used a mixed-methods strategy that employed a quasi-experimental, pretest-posttest design with a control group, paired with a phenomenological approach to understand the experience of students who participated in the study.

The participants in Gillum’s (2005) study ($n = 103$) were enrolled in their first year of high school and had been assigned to four separate math classes based on their underperformance on statewide standardized mathematics tests. Gillum randomly designated each class to receive different types of strengths treatments. The first class of students ($n = 31$) was exposed to the *Clifton StrengthsFinder* and six 55-minute class sessions that provided instruction on how to apply their strengths. The second class ($n = 25$) completed the *Clifton StrengthsFinder* but received no supplemental instruction. The third group ($n = 21$) was not exposed to the *Clifton StrengthsFinder*, but the students in this group were instead given descriptions of each of the talent themes measured by this inventory. These students were asked to identify the five talent themes that

they believed were most personally descriptive prior to receiving six 55-minute class sessions about how to utilize these talents. The fourth class ($n = 26$) served as a control group and therefore was exposed to neither the *Clifton StrengthsFinder* nor the associated instruction. Prior to the interventions, all of the student participants were asked to complete pretest inventories that assessed quality of effort, knowledge of personal strengths, and use of strengths. The teachers of each of the four mathematics classes were also asked to complete Likert-type pretest questionnaires that prompted them to assess each student's quality of effort, attendance, and homework completion. These measures were repeated after the intervention phase of the study was complete.

To complete the qualitative portion of the study, a purposeful sample of five students from the treatment group that received both the *Clifton StrengthsFinder* assessment and the supplemental strengths training was selected for participation in semi-structured interviews. These individual interviews were conducted by the researcher immediately following the completion of the strengths training and again one month later to gain information about the students' attitudes about their strengths and whether they believed that their knowledge about their personal strengths would prompt them to improve their effort.

Gillum reported that the most favorable results occurred in the groups that received specific instruction on how to utilize their strengths, as students in these conditions expressed an increased desire to apply their strengths within and outside the classroom. They also increased the quality of their effort in their mathematics classes (Gillum, 2005). Several limitations are relevant for this particular study, including possible interference from extraneous variables due to lack of random assignment and imbalanced support of the study by participating mathematics instructors. In addition, the researcher only asked about the experience of students in one of the treatment conditions. It may have added value to the study had he also inquired about the experiences of students in the other three conditions as well. The small sample sizes generated marginal results, and the generalizability of the findings of this research is limited.

However, Gillum's study does provide preliminary evidence that effort increases in samples of underperforming high school students when these students are offered guidance related to how to utilize their strengths.

Austin (2005) conducted a controlled experimental study within the context of ninth-grade health education courses at a large suburban high school designed to assess the impact of a strengths intervention on several dependent variables. Specifically, the independent variable in this study was the curriculum type (strengths-based vs. traditional health education course curriculum), and the dependent variables included academic expectancy, academic intrinsic motivation, academic extrinsic motivation, academic efficacy, and academic achievement. Those students ($n = 255$) randomly assigned to the experimental group participated in a six-week strengths intervention that utilized the *StrengthsQuest Curriculum Guide and Learning Activities* (Anderson, 2003), while those in the control group ($n = 255$) spent an equivalent amount of time learning traditional health education curriculum. At the end of the six-week period, students were asked to complete an assessment that the researcher developed and validated for the purposes of his study (*Indicators of Academic Achievement Questionnaire*, Austin, 2004). Following this six-week time period and the completion of the assessment, the two groups rotated to ensure that all students were exposed to equivalent curriculum, regardless of treatment condition. Austin reported that students initially exposed to the strengths curriculum demonstrated higher academic intrinsic motivation and more positive academic risk-taking behaviors at levels of statistical significance. There were no significant differences between the two groups on academic expectancy and efficacy, academic extrinsic motivation, or achievement scores in mathematics and English.

There are several noteworthy limitations to Austin's (2005) study. Although the random assignment of students to condition should eliminate concerns about pre-intervention differences between the groups, Austin was not able to demonstrate the lack of differential selection conclusively because only posttest data were collected. In addition, the researcher could not control for the diffusion of treatment;

it is plausible that students in the control condition received information about the content of the experimental condition from their classmates. Finally, Austin introduced an extraneous variable by choosing specific teachers to conduct the experimental class sessions who had “positive rapport with students” (p. 39) and who were “selected due to their caring nature and ability to facilitate discussions” (p. 39), whereas the teachers leading the classes in the control condition were “not necessarily selected for their personal attributes” (p. 39), but were instead chosen based upon their credentials to teach the content of the course. Teacher style may have significantly influenced the outcome of the study, as the observed differences between groups could be accounted for by this factor alone. In addition, because both the treatment and control groups were ultimately exposed to strengths training, Austin was limited in his ability to assess differences between the groups longitudinally, which would have provided insight into the durability of any observed intervention effects.

The final study that evaluated the effect of using a strengths-based approach with high school students adopted a quasi-experimental pretest-posttest nonequivalent control group design and assessed first-year high school students’ grade point averages, their frequency of being late to class, and their involvement in behaviors which required disciplinary responses (Turner, 2004). Students in the experimental condition ($n = 76$) completed the *Clifton StrengthsFinder* and participated in two semesters of weekly 45-minute class sessions focused on using the *StrengthsQuest Curriculum Guide and Learning Activities* (Anderson, 2003) and the *StrengthsQuest* text (Clifton & Anderson, 2002). During these sessions, students participated in strengths-based learning activities in small groups of three to four individuals. Students in the control condition received training and instruction in computer word processing during the same time period. Turner reported significant differences in GPA between the treatment and the control group, with students who had been exposed to the strengths curriculum attaining better grades than students in the control condition. In addition, students in the experimental group exhibited significantly fewer behaviors that required disciplinary action and were also less likely to be late for

class than were their counterparts in the control group. Turner’s inability to randomly assign students to conditions in this study represents a significant limitation of this research. In addition, one possible confound to the findings is that students in the control condition experienced a different kind of pedagogical approach than did those in the experimental group (traditional instruction with independent work versus small-group interaction).

Turner’s research closely mirrors a study performed by researchers at Gallup several years prior (Harter, 1998, as cited in Clifton & Harter, 2003). The Gallup study involved students ($n = 1,648$) at an urban high school and utilized a time series design over a four-year period to determine whether students who had been given personal feedback on their talents as identified by the *Clifton StrengthsFinder* would demonstrate differences in GPA, tardiness, and absenteeism when compared with a control group who had not received information about their talents. In each year of this study, a group of randomly selected teachers received training from Gallup related to how to conduct a specific talent identification interview process. Following training, these teachers then provided individual and large-group feedback to ninth-grade students in the experimental condition ($n = 807$) about how to use their talents. Students in the control condition ($n = 841$) did not receive the individual consultation or the large group feedback. Students’ grades, tardiness, and absenteeism were measured at the end of the semester, and students in the treatment group were found to have a significantly lower incidence of tardiness and absenteeism and higher GPAs than students in the control group.

The control of extraneous variables such as teacher training and interview treatment fidelity was not described in this study, nor were the procedures used for students assigned to the control condition (such as whether they received any kind of individual consultation with their teachers on another topic to match the treatment of students in the experimental group). In addition, the study did not report on whether there was any examination of the teachers involved in the study to determine whether differences in their teaching style, effectiveness, or rapport with students

may have been responsible for observed group differences as opposed to the strengths treatment itself. These factors are significant concerns and inform the interpretation of the results.

STRENGTHS RESEARCH IN POSTSECONDARY EDUCATIONAL SETTINGS

In addition to the studies conducted with students enrolled in their first year of high school, research on the impact of strengths-based initiatives within higher education is also accumulating. This review describes several types of studies, including intervention studies that have included the *Clifton StrengthsFinder* as a component of a strengths-oriented initiative, using a variety of methodologies to assess the impact of the intervention on several variables related to student success. Also included is work that examines the ways in which various properties of the *Clifton StrengthsFinder* are related to other outcomes, instruments, or variables of interest in postsecondary samples.

Research on Strengths Approaches Within a First-Year Seminar Course

An extensive body of research indicates that students' first semester on campus plays a significant role in creating a tone and trajectory for the remainder of their undergraduate experience (Pascarella & Terenzini, 2005). For this reason, higher education policymakers, faculty, and administrators devote substantial attention to creating programs and practices that can facilitate a successful college transition. Among the most prevalent is the first-year seminar course, which occupies a multitude of titles and forms across campuses nationwide but generally aims to promote academic and social integration, encourage personal growth, and introduce incoming students to campus resources (Keup & Barefoot, 2005; Upcraft, Gardner, & Barefoot, 2005).

Anderson, Schreiner, and Shahbaz (2003, 2004) conducted two of the earliest studies to examine the impact of strengths-based approaches within a first-year seminar. Their research participants included students at a private liberal arts university on the west coast. The 2003 study used a one-group pretest-posttest design and exposed the student participants ($n = 611$) to the *Clifton StrengthsFinder*

and related materials over the course of six one-hour class sessions. Prior to this intervention and after its completion, students were asked to complete the *Self-Reflection Survey* (Clifton, 1997), and the data were subjected to a paired samples t test to analyze pretest-posttest gains. The results of this analysis revealed significant increases in optimism, personal strengths awareness, self-acceptance, goal directedness, self-confidence, awareness of others' strengths, and realistic expectations (Anderson et al., 2003). However, this study is limited by the lack of a control group, as the observed pretest-posttest differences may be attributed to maturation effects within the students instead of the strengths intervention itself. In addition, little is known about the reliability and validity of the instrumentation used for measuring the dependent variables.

The second study conducted by this team of researchers used a quasi-experimental pretest-posttest waiting list control group design and assigned incoming students enrolled in a required first-year seminar course to either a treatment group ($n = 588$) who received a strengths intervention that included the *Clifton StrengthsFinder* and the use of the *StrengthsQuest Curriculum Guide and Learning Activities* (Anderson, 2003) or a control group ($n = 261$) that was not exposed to the strengths activities until the last four weeks of the course, after the completion of the posttests (Anderson et al., 2004). The strengths intervention consisted of four class sessions designed to help students identify and capitalize on their strengths, small group meetings with a peer leader for strengths-based discussions, and an individual strengths coaching session with a trained faculty or staff member. These researchers used the *Self-Reflection Survey* (Clifton, 1997) to measure academic self-confidence, strengths awareness, ability to see others according to their strengths, and perception of personal ability to apply strengths to academic tasks and relationships. They found that students in the strengths treatment condition scored significantly higher on all of these variables than did students in the control group (Anderson et al., 2004). These results should be interpreted with a full consideration of the design of the study, as it is unclear whether students in the control group received the equivalent experience of meeting with a peer leader in a

small group or having individual sessions with a faculty or staff member. It is possible that the mere presence of these experiences within the curriculum, and not the strengths-based content specifically, contributed to the observed results. The aforementioned concerns about instrumentation issues apply to this study as well.

Estévez's (2005) qualitative research used a phenomenological approach to investigate the impact of a strengths-based intervention on academic engagement and perceived social capital of underprepared students enrolled in a first-year seminar course at a small midwestern college. Students in this course completed the *Clifton StrengthsFinder*; the *StrengthsQuest* text (Clifton & Anderson, 2002) was utilized to supplement the existing curriculum during four class sessions. Estévez conducted individual interviews with study participants ($n = 30$) using questions adapted from the *Self-Reflection Survey* (Clifton, 1997) and invited some of these students to participate in a focus group to gain additional information. This researcher reported several themes that emerged in the course of the interviews that lend support to the possibility that strengths approaches are associated with student success. Estévez noted that "students who engaged courses on the premises of their strengths more readily engaged the academic demands of the course" (p. 72), and these students reported elevated levels of academic motivation after learning about their personal strengths, a better understanding of how to apply their strengths to meet academic challenges, and a positive impact on their ability to form social networks. Although these results suggest a link between strengths awareness and student success, they must be interpreted tentatively because of the lack of a comparison group. In addition, the procedures used to code the qualitative data were not clearly specified, nor were measures taken to reduce confirmation bias in the interpretation of the results.

An additional study that informs the current body of knowledge related to the effect of strengths-based approaches with first-year college students is that of Cave (2003), who used a quasi-experimental pretest-posttest treatment design with a non-equivalent control group to assess the impact of a brief strengths-based intervention

on academic motivation within the context of a first-year seminar course. Cave's study was conducted at a private liberal arts college and involved 220 first-year students who were randomly assigned to first-year seminar groups consisting of approximately 12 to 15 students each. Six of these groups were non-randomly selected to be a part of the treatment condition ($n = 111$) based on the availability of faculty volunteers to lead these experimental groups, and the remaining six groups ($n = 109$) were designated as the control group. Students in the control condition utilized the college's existing first-year seminar curriculum, whereas those in the experimental condition were exposed to the *Clifton StrengthsFinder* and related materials (Clifton & Anderson, 2002) during three 50-minute class sessions in lieu of some of the traditional first-year seminar curriculum. The three class periods that utilized the strengths curriculum were conducted as large group plenary sessions instead of individual classroom sections. As this researcher hypothesized that exposing students to information about their strengths would increase their academic motivation, the *Academic Motivation Scale* (AMS; Vallerand, Pelletier, Blais, Briere, Senecal, & Vallieres, 1992) was administered at pre- and post-intervention intervals. However, after controlling for gender, degree aspirations, and pretest performance, Cave found no significant impact of the intervention on AMS scores.

The results of Cave's (2003) research should be interpreted with a full consideration of the limitations inherent to the methodology of this study. First among these is an issue of insufficient validation of the instrumentation used in Cave's research, as the original version of the *Academic Motivation Scale*, the *Eschelle de Motivation en Education (EME)*; Vallerand, Blais, Briere, & Pelletier, 1989), was originally presented in French and was validated using a sample of Canadian college students. A team of researchers seeking to validate the AMS for use in the United States reported concerns about the construct validity of this instrument (Cokley, Bernard, & Cunningham, 2001). As the AMS was initially developed to measure Canadian high school students' motivation for attending college (Vallerand et al., 1992), Cave noted that this instrument was inadequate to capture academic motivation as she operationally defined

it in her study. In addition, Cave's research design did not sufficiently control for some extraneous variables that may have influenced the results of this study. Specifically, faculty who volunteered to participate in the experimental condition may have been qualitatively different on some relevant dimensions than those who refused this opportunity. In addition, the treatment condition was administered in large group settings of more than 100 students, whereas the sessions for students assigned to the control condition were conducted in groups consisting of 12 to 15 students. Finally, Cave's study was limited because institutional dynamics caused this researcher to modify the original research design before the posttest data were collected, which meant that students in the experimental condition were not exposed to the segment of the strengths curriculum that was designed to link strengths to academic motivation, and the power of Cave's intervention was thereby reduced.

Louis (2008, 2011) conducted research to examine the relative impact of two separate strengths-based educational approaches within first-year seminar courses on several variables associated with student success. Her research was based upon the observation that many strengths-based approaches to education had largely focused on the process of helping students identify their talents and strengths while lacking sufficient emphasis on intentionally assisting students in the process of developing these unique strengths to their full potential. Louis' (2008) study contrasted this predominant talent identification approach with an alternate method for teaching students about their strengths that had a more developmental focus. Louis called her alternative approach a *strengths development intervention*, which emphasized the application and further nurturing of identified talents by investing time and energy to add the skills and knowledge needed for strengths to develop. This strengths development intervention approach highlighted students' capacity to develop their talents through intentional effort and prompted students to consider specific opportunities on campus that would allow them to fully capitalize on their strengths in college. She compared this developmental approach with a *talent identification intervention*, which focused on the identification and affirmation of students' existing talents as innate tendencies,

an approach representative of strengths programs conducted at many postsecondary institutions.

Louis used an experimental pretest-posttest waiting list control group design to compare the impact of these two strengths-based curriculum types with each other and to a traditionally implemented curriculum in a first-year seminar course, which served as the control condition. The dependent variables in Louis' research included academic engagement, hope, perceived academic control, achievement goal orientation, and mindset (implicit self-theory). Participants included first-year students ($n = 388$) at a private liberal arts institution, and assignment to curriculum type was randomly determined. Faculty assignment to condition was also randomized, and all instructors were required to attend an eight-hour training session that corresponded to their designated condition. To control for experimenter bias, these trainings were led by an independent presenter, and all faculty and student participants were blind to their condition. Data for Louis' study were collected through written pretests and posttests, which consisted of instruments with demonstrated reliability and validity in assessing the dependent variables. These assessments were completed during class two weeks before the commencement of the strengths interventions and again one week after their conclusion, and participants in both strengths conditions completed the *Clifton StrengthsFinder* preceding their engagement with the strengths activities. Louis designed the curriculum for the two strengths-based interventions and gave each instructor a detailed manual outlining the exact activities to be conducted in each of four 50-minute strengths-based class sessions, including all teaching materials such as lesson plans, lecture notes, slide presentations, and handouts. To ensure that any group differences could be attributed to the intervention content and not to pedagogical variations, activity types in the interventions were matched.

A one-way multivariate analysis of covariance (MANCOVA) conducted to examine the effect of the two strengths-based approaches on the dependent variables indicated that the strengths development group had the highest adjusted posttest mean scores across all of these variables. Univariate analyses of covariance (ANCOVAs)

conducted on each dependent measure to determine the locus of the statistically significant multivariate effect found that treatment condition significantly affected perceived academic control but not academic engagement or hope. Louis also noted that curriculum type affected students' perceived academic control, which is a construct that refers to students' perceived influence over and responsibility for their academic performance and is predictive of students' tendencies to work harder on academic tasks, obtain better grades, and remain enrolled in their classes (Hall, Perry, Ruthig, Hladkyj, & Chipperfield, 2006; Perry, Hladkyj, Pekrun, & Pelletier, 2001). Specifically, Louis found that students who had been exposed to either strengths approach had significantly higher levels of perceived academic control at the posttest than did students in the control group. After the students in control group were exposed to the strengths curriculum, their levels of perceived academic control increased significantly, reversing what had previously been a marked decline in this variable. This study also found that strengths development approaches produce more favorable student outcomes than do talent identification interventions because of the differential impact of these two approaches on mindset. Students with a growth mindset (who believe that personal attributes are malleable) persist longer in challenging situations and report higher levels of self-esteem across their college experience than do their peers with fixed mindsets (who believe that personal attributes are not amenable to change) (Robins & Pals, 2002). Participants in Louis' study who were exposed to the talent identification curriculum reported a significant shift toward a fixed mindset at the posttest whereas students in the control and strengths development conditions did not experience a significant change in mindset. Louis (2008) also examined the impact of various strengths-based approaches on achievement goal orientation, a variable that is predictive of students' academic success (Covington, 2000). *Performance goals* are aimed at demonstrating competence or avoiding negative judgments from others, whereas *learning goals* focus on increasing existing levels of ability or learning new skills (Dweck & Leggett, 1988; Elliott & Dweck, 1988) and therefore tend to be more beneficial in academic settings (Elliot, McGregor, & Gable, 1999). Louis' findings revealed that the students who experienced a talent

identification curriculum demonstrated a greater likelihood of subsequently adopting a performance goal orientation, whereas those who participated in a strengths development intervention reported a greater tendency to pursue learning goals. Achievement goal orientation remained unaltered for the control group.

These findings indicate that although strengths-based approaches can help first-year students maintain a sense of academic control, merely teaching students about their talents without providing instruction related to how to develop them may be unintentionally promoting a fixed mindset and the cultivation of a performance goal orientation, both of which are associated with less positive outcomes. This research suggests the importance of including a developmental component in strengths-based initiatives.

A limitation of Louis' (2008) investigation is that it was conducted at a single private liberal arts institution. Therefore, the research findings reported here cannot be generalized to undergraduate students at other types of institutions, as the literature reports that college outcomes are determined in part by institutional type (Pascarella & Terenzini, 2005). Furthermore, the student population at the institution at which this research was performed is not broadly representative of the American undergraduate population, as it contains a less diverse student demographic than that which is present at many other institutions across the country. This limitation also applies to the faculty participants in this study, who were primarily Caucasian. This researcher was unable to track the various groups over a long time period to determine whether the impact of the interventions was lasting because the design included a waiting-list control group, which meant that eventually all participants in the study were exposed to strengths training. In addition, Louis' study relied on self-report measures, which may be vulnerable to various types of biases and inaccuracies because of respondent concerns about self-presentation.

Tomasiewicz (2011) used a quasi-experimental design with a sequential mixed methods approach to explore participants' experiences in two separate formats of an

eight-week first-year experience course: one that included a strengths-based advising approach and another that was taught according to the institution's existing curriculum. All participants in this study had not yet identified an intended academic major and were in their first year of study at a large public university. Tomasiewicz's reported aims for the research were to focus on an exploration of how the version of the course that included a strengths-based advising component influenced participants' self-reported ability to identify and explore personal strengths as well as their thoughts regarding possible academic majors and careers. The researcher collected demographic information for all participants from an existing database, and participants were invited to complete electronic pretests one week prior to the beginning of the course and posttests one week following the eight-week study period. The pretest consisted of 34 items, 10 of which were taken from the Strengths Self-Efficacy Scale (Chaichanasakul, Tsai, Zhao, Flores, & Lopez, n.d.), and 24 of which were written by the researcher to explore student attitudes regarding their university experience. Posttests contained the same 34 items as well as some additional items to probe the impact of the first-year seminar experience, but the researcher indicated that the two groups in the study were given different versions of the posttest because the strengths group was asked to respond to some additional items such as, "At this time, have you made changes to your career or major plans as a result of your strengths development?" (Tomasiewicz, 2011, p. 73). To further explore the research questions, following the posttest a purposive sample of 14 students participated in semi-structured interviews with the researcher lasting 45-60 minutes each.

Tomasiewicz (2011) did not proactively designate a strengths group for this study, but determined after the course commencement which course instructors had voluntarily used a strengths approach through an analysis of their course syllabi. The researcher examined the syllabi for four features to determine whether he could classify the course as being strengths-based and therefore part of the treatment group. Specifically, course instructors in those sections subsequently classified by Tomasiewicz as teaching strengths-based courses (a) required that students

purchase the *StrengthsQuest* book (Clifton, Anderson, & Schreiner, 2006), (b) asked students to complete the *Clifton StrengthsFinder*, (c) assigned a reading of some type of strengths article or a portion of the *StrengthsQuest* book, and (d) included at least one lecture on the strengths-based approach. When courses included all of these elements, the researcher considered them to be strengths-based, although it is likely that there was considerable variation in the content, emphasis, and timing of these strengths-based components. One example of the kind of variation present within the strengths treatment is that the researcher offered to present a strengths lecture to students in the strengths-based courses at the preference of the course instructor, and he reportedly did so for approximately half of students in this condition. The information given to students in the remaining strengths group course sections was not specified.

Quantitative results for this study indicated that students in the strengths-based group reported thinking about their strengths less frequently than the comparison group following the intervention, which is a counterintuitive finding. However, the treatment group also reported reflecting on weaknesses with lesser frequency following the intervention than did the comparison group. Caucasian males reported greater adoption of strengths-based ideology than did members of other demographic groups, although it is important to note that the researcher used frequency distributions of student responses to single question items as opposed to scales with demonstrated reliability and validity to make the aforementioned determinations. Future quantitative research on the topic addressed in this study may benefit from the use of instruments with established reliability and validity.

A comparison of the demographic variables in the students in the strengths group versus those who did not receive strengths exposure reveals some significant pre-existing differences between the two. An example of a noteworthy difference is that 28.4% of those in the strengths-based group were classified as honors students whereas only 2.3% of those in the comparison group were in this category. The researcher did not describe the use of any statistical procedures to account for these preexisting variations. In addition, although he invited 1,135 students to participate

in the study, only 137 students completed both the pretest and posttest, which corresponds to a 12% overall response rate. This group of respondents may not adequately represent the experiences of the group of students from which they were drawn, and so the confound of a sampling bias should be considered. It is also notable that this final group of respondents was composed of more than twice as many students from the strengths condition than from the comparison group. Also, instructors voluntarily participated in leading strengths-based curriculum, which may have influenced students' experiences in some systematic way.

Tomasiewicz (2011) described the use of purposive sampling within a group of student volunteers to generate a pool of students to invite to participate in the individual interviews, but the specific criteria used to select the 14 participants were not detailed in the study other than that these students demonstrated the "highest probability of informing the research questions" (p. 71). An examination of the interview questions reveals that many of the questions inquired about topics that were not relevant to the central research questions in this investigation, such as how the students selected their university, which topics they could recall from their first-year seminar course, and which academic majors were being considered upon enrollment at the institution.

The results of the qualitative portion of this study were presented in the format of providing a description of each participant and a verbatim sample of each participant's response to one or more of the questions asked during the semi-structured interview. The researcher reported grouping students' responses into themes and then described the nature of several of these themes, but did not indicate a specific qualitative research approach that informed his procedures. It is therefore unclear what kind of protocol was used to generate the themes reported by the researcher and whether this strategy aligns with recommended practices in coding qualitative data. Tomasiewicz (2011) described a process of asking interviewees to review his notes immediately following the interviews, which could be considered as a form of member checking, but no additional strategies for ensuring the trustworthiness issues of credibility, transferability, dependability, and confirmability of the data (Lincoln & Guba, 1985) were described.

Aside from the issues previously noted, there are several other factors to consider when evaluating Tomasiewicz's (2011) study. Although the stated research questions were related to examining students' experiences with strengths-based *advising* as defined in the work of Schreiner and Anderson (2005), this author did not describe the inclusion of any strengths-based advising of this type in the strengths condition. Limited exposure to strengths-oriented materials within an academic course is a different endeavor than the process of strengths-based advising described by Schreiner and Anderson (2005), and therefore the central research questions in this study could not be addressed. Due to the potential variation among the experiences of the strengths group and the brevity of the exposure to the strengths approach, the effects of a strengths-based educational component may be more readily assessed through a more consistent and extensive strengths treatment.

Most recently, Stebleton, Soria, and Albecker (2012) examined the impact of integrating strengths-based curriculum into a required first-year experience course at a large public university. Specifically, these authors sought to understand whether multiple exposures to strengths-oriented materials would subsequently affect students' self-awareness, particularly in the area of personal strengths. To do so, they asked students to participate in approximately six hours of strengths-related activities. These included completing the *Clifton StrengthsFinder* prior to the beginning of classes, soliciting feedback from two other people about their assessment results, having brief conversations with classmates who possessed similar talent themes, discussing the nature and benefits of each of the 34 themes within a large group, completing a worksheet that required students to consider their academic tasks and which themes might be useful in completing each task, considering potential majors and their links to personal talents, and accessing the online *StrengthsQuest* resources prior to discussing a strengths action plan with an adviser. Each of these activities represented required components of the first-year experience course in which the students were enrolled.

All of the participants in the study conducted by Stebleton and colleagues (2012) were incoming first-year students

enrolled in a first-year experience course. The researchers selected one section of the course ($n = 58$) to complete 30-item pretest and posttest surveys designed to assess “confidence about personal strengths” (p. 5) using a Likert-type response format, which required students to assess their confidence in their personal ability to execute a variety of behaviors. Sample items described by the researchers include “How much confidence do you have in your ability to identify your personal strengths?” and “How much confidence do you have in your ability to accurately assess your abilities?” (Stebleton et al., 2012, p. 5). These authors did not provide a citation for the assessment tool they used or a comprehensive description of all of the questions it entailed, opting to instead highlight five items for which there were significant differences between the pretest and posttest measures. Based on the results of repeated measures of analysis of variance, Stebleton and colleagues (2012) concluded that students reported an increase in personal awareness of strengths, heightened capacity to accurately assess their own abilities, and a better sense of how to apply their strengths to help them learn more effectively, to clarify personal values within the context of an academic major or career, and to better understand how their strengths might help them develop realistic expectations for the future.

This study has several limitations, some of which the authors note in their article. Perhaps the most notable is that the study lacked a control group, and so it is possible that the observed results may be due to maturation effects or other extraneous factors, a possibility that is particularly relevant for first-year student populations during their early transition to campus life. The research relied exclusively on self-report measures, and so it is possible that students were responding to the surveys in socially desirable ways or in alignment with their assessment of the researchers’ expectations. Also, the instrument used in this study was not described with adequate specificity, and no reliability or validity information was made available to help the reader assess the practical utility of this assessment in accurately or consistently measuring the impact of the intervention. Finally, the sample size was small ($n = 58$) and consisted primarily of female, Caucasian students enrolled in one course at a single institution; this factor significantly limits

the generalizability of the findings. The researchers did not specify their rationale for selecting the particular sample group used in the study or for the format and timing of the survey administration.

Research Examining the Use of Strengths Approaches Within Subject-Specific Academic Courses

Although most of the research on the use of strengths approaches within a college course has occurred within the context of a first-year seminar course, there are also a limited number of studies that examine how a strengths curriculum influences the learning experience in other types of postsecondary courses. This type of research will be reviewed in the following section.

In a study comparing a strengths-based approach to a traditional method of teaching an introductory college-level public speaking course, Cantwell (2005) sought to discover whether these two teaching methodologies would result in different levels of academic engagement and proficiency in desired course-specific learning outcomes. To do so, Cantwell used a quasi-experimental, pretest-posttest nonequivalent control group design and randomly designated those students enrolled in one section of a public speaking course ($n = 29$) as the treatment condition, whereas students enrolled in another section of the same course ($n = 26$) served as the control group. In the experimental condition, four class sessions were devoted to a strengths-based intervention that involved exposing students to the *Clifton StrengthsFinder* and the use of the *StrengthsQuest* text (Clifton & Anderson, 2002). In addition, the instructor of this section employed a strengths-based approach to offering feedback to student coursework, emphasizing what students were doing well and encouraging them to consider how to capitalize on their strengths in completing the assignments associated with the course. The students in the control group were not exposed to any of the strengths materials, but instead were taught according to a traditional public speaking curriculum that had been used in previous semesters. To assess academic engagement at pre- and post-intervention stages, Cantwell used the *Academic Engagement Index* (Schreiner, 2004b). Attainment of desired learning

outcomes was measured by objective in-class examination scores as well as independent raters' use of *The Competent Speaker Speech Evaluation Form* (Morreale, Moore, Taylor, Surges-Tatum, & Hulbert-Johnson, 1993) to assess public speech delivery skills. Students' previous knowledge of course content, pre-existing public speaking skill level, and academic engagement were measured during the first week of the course as a pretest so that this information would enable the researcher to use these variables as covariates in the data analysis. As Cantwell taught both sections of the public speaking course used in this study, this researcher took extensive measures to control for extraneous variables in the research design by videotaping the class sessions and asking a blind independent rater to assess the uniformity of her demonstrated classroom behaviors and attitudes using an instrument drawn from a resource designed to evaluate faculty work (Braskamp & Ory, 1994). This analysis indicated that there were no notable differences in Cantwell's behaviors or attitudes across conditions.

A MANCOVA revealed that students in the experimental condition reported significantly higher levels of academic engagement at the end of the semester than did their counterparts in the control condition, and students exposed to the strengths materials also attained higher levels of proficiency in course-relevant outcomes, as evidenced by significantly higher scores on objective examinations and independent evaluations of their public speaking skill.

Although the findings of Cantwell's (2005) research lend initial support to the notion that there is a link between the use of strengths-based interventions and subsequently elevated levels of academic engagement, care should be taken to interpret these results appropriately, given the nature of the research. Cantwell made substantial efforts to control for confounding variables in her work. However, one potential limitation to this study is that the instrument used to measure academic engagement in this research had received limited use at the time it was utilized in this study, and there was no test-retest reliability information available for this instrument at the time Cantwell's study was conducted. The other limitations of this research include a small sample size and limited generalizability.

These concerns indicate that additional research should be conducted to confirm whether academic engagement is bolstered by a strengths approach in other settings with larger samples of students and with various faculty teaching the strengths-based course content.

Within the context of an outdoor and adventure education course, Passarelli, Hall, and Anderson (2010) sought to understand whether a strengths-based educational approach might enhance desired educational outcomes such as personal growth, interpersonal skill development, and enhancement of positive group dynamics. To do so, they integrated a strengths perspective into the pre-departure and international travel experiences associated with a three-week undergraduate ecotourism course for two consecutive years. The course was preceded by three two-hour sessions designed to introduce participants ($n = 58$, representing the combined number of participants over two years) to the strengths approach by asking students to complete the *Clifton StrengthsFinder* and review their results (session one), to read about the strengths approach (session two), and to define personal Signature Themes independently before discussing common themes in small groups (session three). At the time of departure for the course, students were asked to identify strategies for developing some of their Signature Themes. On the first day of the course, students participated in an activity that prompted them to learn about their classmates' Signature Themes. In a written journal, participants reflected on their progress in developing their strengths by employing the strategies they had previously defined. At the course's conclusion, students were required to write a paper describing their effectiveness in developing personal strengths and reflecting on the extent to which the awareness of their strengths had contributed to personal growth. Passarelli and colleagues noted that in addition to these formally required strengths-oriented activities, informal dialogue on the topic of strengths occurred spontaneously throughout the ecotourism experience. At the conclusion of the course, students completed two surveys designed to assess their personal growth and the extent to which they were aware of their personal strengths. The first survey was an unnamed nine-item questionnaire, which the authors used to assess the degree of personal growth

associated with the study abroad experience. The second survey was the *Assessment of Strengths Awareness Program Survey* (Anderson, 2003), a 45-item instrument that contains Strengths Awareness and Strengths Application subscales. The authors subsequently computed mean scores for personal growth, strengths awareness, and strengths application based on students' responses to the assessments; they also subsequently calculated correlation coefficients between these variables. Following these analyses, the researchers conducted what they described as a "thematic analysis" (p. 127) of the final papers that students wrote for the course during year one ($n = 30$), seeking to locate information about how the awareness and use of strengths contributed to participants' personal growth.

Passarelli and colleagues concluded that personal growth was significantly correlated with strengths awareness and strengths application, although they did not provide an effect size for this result. They also described three themes that emerged from the review of students' final papers describing how strengths use influenced personal growth. The themes they noted included mindful learning, enhanced relationships, and overcoming physical challenges, and the authors offered one or two examples of how each of these themes was reflected in the papers by providing illustrative quotations or anecdotes.

A contribution of this study is that it sought to examine the use of a strengths-based approach in a novel educational setting. However, in addition to the small sample size used in this research, there are several methodological concerns that limit the accuracy and reliability of the findings reported by Passarelli and colleagues. The study lacked a comparison group and was conducted using a posttest only format, which prohibits an analysis of how the exposure to a strengths-based approach affected relevant outcomes. Neither of the survey instruments used in this study has been shown to be reliable or valid, meaning that the researchers are not able to know with any degree of certainty what these instruments assess or how accurately they do so. Although a common practice in social science research, the exclusive use of self-reports is potentially problematic for several reasons; most relevant to this study may be a social desirability bias. Social desirability

refers to the tendency for participants to adjust personal responses to align with what they perceive will be viewed favorably by others, which may have been a factor in shaping students' responses to the surveys assessing personal growth administered at the conclusion of the course and the final papers they wrote related to their reactions to the strengths approach used in the course.

The thematic analysis procedure was not described in the article, and so it is unclear as to whether the authors used proper qualitative methods to reach the conclusions they have described. Specifically, no information is provided regarding how the authors approached their review of participants' written reflections, whether there was any systematic process they used to analyze the written data, or whether they attended to the important issues of trustworthiness in their analysis. The authors noted that they phrased the assignment for the paper in a way that may have "led the students to discuss the ways in which the strengths component was beneficial rather than how it was possibly detrimental" (p. 130), which indicates that the responses may not have captured the fullness of participants' experiences with the strengths program. The participants were asked to submit their papers as a course requirement and for a grade, which introduces the likelihood that students were responding to the demand characteristics inherent in the study and not based on their authentic personal reflections. Passarelli and colleagues noted that three of the 30 students reflected that they did not find the strengths component to be beneficial, but no further information or analysis of this group of students is provided. Collectively, these concerns must all be considered when forming an assessment of the extent to which the results of this study can be viewed as descriptive of the impact of a strengths-based approach within outdoor and adventure education.

Strengths Interventions With Postsecondary Student Samples Occurring in Settings Outside of the Classroom

In addition to the studies describing the impact of strengths approaches that were infused into students' coursework, there is also a body of research that has specifically targeted

postsecondary samples but has sought to understand their strengths-related experiences outside of the context of a first-year seminar or other academic course. These studies are described in the following section.

One such investigation is that of Swanson (2006), who conducted an investigation with 156 first-year college students at a liberal arts college to assess the impact of three types of advising experiences on student retention, integrating a process of exposing students to their *Clifton StrengthsFinder* results as a part of one of the treatment conditions. In Swanson's investigation, all participants completed the *Myers-Briggs Type Indicator* (MBTI; Consulting Psychological Press, 2003) in alignment with the current practice of the institution at which the study was conducted, and then students were randomly assigned to one of three groups. The control group met with a faculty member to determine a class schedule for the spring semester, as was the traditionally implemented advising method. The first treatment group was asked to meet with a faculty advisor for two 30-minute sessions to build a relationship and for the advisor to assist in the student's social integration into the campus community. The second treatment group was required to complete the *Clifton StrengthsFinder* and to meet with a strengths-trained member of the institution's student affairs staff for two 30-minute advising sessions in which the results of the *Clifton StrengthsFinder* were interpreted and discussed in relation to the student's academic plans. Attrition data were collected for the students involved in the study at two intervals: at the conclusion of their first semester of college and again following their spring registration for the following academic year, which was understood as a measure of the students' intent to re-enroll at the same institution in subsequent semesters. Swanson (2006) found that students who had been randomly assigned to the condition in which the *Clifton StrengthsFinder* was utilized in the advising process had significantly higher retention rates than the other two groups.

A noteworthy potential confound to Swanson's study is that two groups of participants (those in the control group and those assigned to the first treatment condition) met with faculty members, whereas the students assigned

to the second treatment condition in which the *Clifton StrengthsFinder* was utilized met with members of the institution's student affairs staff. It is therefore plausible that the difference in advisor type may have produced the results observed by Swanson and not the content of the advising sessions themselves. In this study, students reported for their scheduled meetings with faculty advisors at a significantly lower rate than did those students who were randomly assigned to meet with student affairs staff. This observation may indicate that there were non-equivalent student groups involved in the study despite random assignment or that the faculty and student affairs advisors employed different protocol for recruiting students to the advising sessions. In addition, the faculty advisors were not given specific directions regarding the preferred content of the advising sessions, whereas the student affairs professionals conducted meetings that were more clearly prescribed in terms of content. These differences between treatment conditions may have influenced the results of Swanson's study and indicate that the findings should be interpreted cautiously.

Williamson (2002) assessed the impact of a strengths intervention on first-year students' intent to re-enroll at their institution as well as on their GPA. To do so, Williamson selected a convenience sample of 80 students enrolled in first-year English courses at a private, liberal arts college and randomly assigned them to treatment ($n = 32$, after attrition) and control ($n = 40$) conditions. The treatment in the experimental condition consisted of exposing participants to their *Clifton StrengthsFinder* results, two 60-minute strengths training sessions conducted in large groups, a brief individual consultation, and a small group discussion facilitated by the researcher. The control group did not receive information about using their strengths. At the end of the semester, Williamson measured participants' intent to re-enroll for the following year, the number of credit hours they earned, and their first-semester GPA and found that students in the experimental condition had earned a significantly greater mean number of credit hours than had the students in the control group and that students who had been exposed to the strengths condition also demonstrated significantly higher GPAs than did those in

the control condition. There were no significant differences found between the two groups with respect to their intent to re-enroll, although Williamson noted that the retention rate for the treatment group was 97%, compared with 87% for the control group. The small sample size in this study limits the generalizability of the findings, but this research provides initial evidence to suggest that strengths-based approaches may positively influence academic achievement in first-year students. However, it is also important to note that the participants in the experimental group received unique treatment (such as an individual consultation), which was not mirrored in the control group. Because the groups were not treated in an equivalent manner, it is possible that the observed differences in the dependent variables can be attributed to these variations in students' experiences as opposed to the strengths approach itself. Also, because there was no pretest administered in this study, it cannot be determined whether the groups were equivalent on relevant variables prior to the intervention.

The final study reviewed in this section varies slightly from the others in that its participants are not first-year college students exclusively. However, this research is categorized in this portion of the review because it explores the impact of various types of strengths approaches that are not integrated into the curriculum for a particular academic course. Hodges (2002, as cited in Clifton & Harter, 2003) conducted a study involving 150 undergraduate business students at a public university. Students participated in one of three conditions to assess the impact of different degrees of exposure to information about personal strengths on *State Hope Scale* (Snyder, Sympson, Ybasco, Borders, Babyak, & Higgins, 1996) scores. Students in the first group were given the *Clifton StrengthsFinder* and written feedback that identified their Signature Themes of talent. A second group of students was given the same intervention as those in the first group but was also allowed to access an online learning program that allowed them to learn more about their talents. The third group of students was given all of the previously noted information and also received a 30-minute personal telephone consultation with a trained strengths consultant. Following a pre- and post-administration of the *State Hope Scale* (Snyder et al., 1996), the researchers determined that students in the third group reported a

significantly greater increase in state hope than that of the first group. One limitation to this study is the lack of a control group.

Research on Strengths Within a Leadership Context

Brodersen (2008) conducted a study with a correlational design to assess whether certain characteristics of peer leaders who were functioning in a strengths counselor role were predictive of their effectiveness in providing strengths counseling for students enrolled in a first-year seminar course. Participants in Brodersen's research included first-year students at a private liberal arts institution in the western United States ($n = 472$) enrolled in a 10-week first-year seminar course, and the upperclass peer leaders ($n = 68$) who volunteered to assist in the course with strengths-based counseling related to the *Clifton StrengthsFinder* had attended training for this role. First-year students in the study took the *Clifton StrengthsFinder* and were subsequently exposed to four class sessions designed to help them understand their assessment results and consider how to mobilize their identified talents to achieve academic success. Brodersen indicated that students met with an assigned peer leader in small group and individual settings throughout the semester as a requirement of the course, but did not provide details on the nature or the frequency of these meetings other than to note that this individual's purpose was to help the first-year students better understand their strengths. This researcher asked the peer leaders to complete self-report surveys at the conclusion of their pre-course training session inquiring about their academic and career self-efficacy, perception of the adequacy of their preparation to serve as strengths counselors, and their personal level of strengths awareness, as these were the predictor variables in the study. The four criterion variables included first-year students' cumulative GPA at the end of the academic year, self-reported strengths awareness and academic self-confidence, and their subjective ratings of the effectiveness of their peer leader. Data collection occurred via the use of pretest and posttest surveys, and hierarchical multiple regression analyses were conducted to determine which predictor variables were associated with each of the outcomes identified as important in the study.

Brodersen (2008) found that the effect size of each regression analysis was small, indicating that only a small portion of the variation in the first-year student outcomes measured in this study could be explained by the combination of predictor variables. In addition, the only characteristic of peer leaders that was a significant positive predictor of their effectiveness was their self-reported comfort with their level of preparation to be strengths counselors. Although this characteristic was not predictive of first-year students' academic confidence or cumulative GPA after two semesters, it did positively predict changes in first-year students' strengths awareness. Contrary to what this researcher hypothesized, peer leaders' strengths awareness was a negative predictor of changes in first-year students' strengths awareness, meaning that when peer leaders had higher levels of self-reported strengths awareness, first-year students reported less change in strengths awareness between the pretest and posttest measures of this variable.

The results of Brodersen's (2008) research underscore the importance of peer leaders' comfort in conducting strengths counseling if students are to grow in their own understanding of personal strengths and would seem to suggest that it is imperative to provide adequate training for strengths counselors to encourage these outcomes, but the design of the study does not allow for this assertion. This conclusion cannot be made based upon the data because Brodersen did not measure the impact of the peer leader training sessions on peer leaders' comfort with their level of preparation to conduct strengths counseling, and so an empirically based link cannot be made between strengths training and peer leaders' comfort in providing strengths counseling. A limitation of the correlational design type is that it does not permit conclusions related to causation, and the lack of a control group in this study means that any observed change between the pretest and the posttest measures given to the first-year students could be due to factors other than the strengths-based course content. Brodersen noted that there was a lack of variation in the students' ratings of the effectiveness of their peer leaders and also emphasized that peer leaders' self-ratings of several of the predictor variables were consistently high. This type of data trend is commonly observed with the use of self-

report scales, and it indicates that the data in this study may be biased by a social desirability effect.

Wisner (2008, 2011) conducted a correlational study to examine the extent to which students' awareness and practice of personal strengths (described in this study as *strengths ownership*), various qualities of psychological capital (including hope, resiliency, optimism, and self-efficacy), and several demographic factors were predictive of effective leadership practices. The participants in Wisner's study included college students ($n = 153$) who had previously completed the *Clifton StrengthsFinder* and who also occupied leadership roles within student development programs at five private, religiously affiliated institutions. In the context of this study, effective leadership practices were defined as the five competencies or behaviors outlined in Kouzes and Posner's (2002) Leadership Challenge Model, which is based upon transformational leadership theory. To measure this criterion variable, the *Student Leadership Practices Inventory* (SLPI; Kouzes & Posner, 2006) was completed by each student (self-form) and by two peer followers and one organizational advisor (observer-form) for each participant. The SLPI measures five types of leadership practices: modeling the way, inspiring a shared vision, challenging the process, enabling others to act, and encouraging the heart (Kouzes & Posner, 2002), and provides a scale score for each of these as well as a total score. The 24-item *PsyCap Questionnaire* (Luthans, Youssef, & Avolio, 2007) was used to assess the predictor variables of hope, self-efficacy, optimism, and resiliency, as each of these constructs is measured in a subscale of this instrument. Strengths ownership was assessed by extracting seven items from the *Strengths Impact Measure* (Gallup, 2006) that were related to awareness and use of strengths. Students also provided demographic information including gender, academic major, class level, academic performance, race and ethnicity, and first-generation student status.

Following hierarchical regression analysis, Wisner (2008) concluded that strengths ownership did not significantly predict total SLPI scores or any of the five effective leadership practices she examined. Her study revealed that the PsyCap quality of hope was the strongest predictor of overall leadership behaviors as reflected in total SLPI

scores. Self-efficacy was a significant predictor of scores on the SLPI subscales of encourage the heart and inspire a shared vision, and optimism was a significant, although less powerful, predictor of the SLPI subscales of enable others to act and encourage the heart. She also noted that gender was the only demographic variable that was significantly predictive of effective leadership practices, such that males in her study had significantly lower SLPI scores, a finding which deviates from reported SLPI norms that indicate similar scores across gender.

The correlational design of this study does not allow conclusions regarding causality. Wisner's findings were limited by a lack of variability in the form of uniformly high scores across her sample in the leadership effectiveness and strengths ownership scale scores, which limited the predictive value of the strengths ownership variable. Finally, although Wisner's sample was drawn from several sources, these were all private, faith-based, liberal arts institutions. Therefore, a sample of including other institutional types and a more diverse representation of leadership roles and demographic characteristics is necessary to generalize the results of this research beyond the institutions participating in this study.

Another study that integrated both the *Clifton StrengthsFinder* and the *Student Leadership Practices Inventory (SLPI)* (Kouzes & Posner, 2006) was conducted by Lehnert (2009), whose methodology and findings regarding the relationship between strengths and leadership effectiveness varied considerably from Wisner's (2008). Lehnert (2009) implemented a quasi-experimental study with a randomized control group and a pretest-posttest design to examine the extent to which strengths-based leadership development would influence students' tendencies to exhibit effective leadership behaviors as reported by themselves and two observers, comparing these results with those of a control group that received the university's traditional leadership training. Participants in this research included students occupying formal leadership positions ($n = 120$, but reduced to $n = 95$ after attrition) at a Midwestern university who had completed the *Clifton StrengthsFinder*. The assessment results from the *Clifton StrengthsFinder* were not used as an independent variable in

the study but instead provided information that participants in the treatment group used within the context of the intervention. Lehnert used a stratified random sampling procedure to equalize the number of men and women in the treatment and control groups, citing literature indicating that gender may affect leadership practices as rationale for this approach. As previously indicated, exemplary leadership practices were measured in this study using the *Student Leadership Practice Inventory (SLPI)* (Kouzes & Posner, 2006), including the self-assessment format as well as the format for observer ratings.

Participants in the strengths intervention group completed six online strengths development modules that were created in accordance with a strengths development programming framework offered by Gallup (2008). Students in the control group engaged in six standard leadership development learning modules that were not related to strengths, but were instead based on a workbook developed by Kouzes and Posner (2002). The time period for the intervention was six weeks. Lehnert controlled for gender, years of leadership experience, and completed leadership courses when conducting her analysis of whether leadership training type influenced participants' and observers' reported posttest values (in addition to self-observed averages) on each of the leadership practices measured by the SLPI. Results indicated that students who engaged in the strengths intervention reported significantly greater gains on all five dimensions of effective student leadership practices measured by the SLPI than did those in the control group, thus providing initial support for the effectiveness of strengths-based leadership development programming.

Lehnert (2009) took several steps to reduce the impact of confounding variables, which increased the credibility of her findings. However, one possible confound to the results of the study becomes apparent when examining the training modules associated with this research, as the modules for the strength development sessions were slightly more extensive than those for the traditional leadership training, consisting of more reflection questions to which students were prompted to respond. It is possible that the observed differences between the conditions may have been a result of time on task and not the intervention content itself. Lehnert

noted that one limitation of her research is that it did not assess the relative distribution of *Clifton StrengthsFinder* themes within the treatment and control groups, and hypothesized that it was possible for the mere prevalence of various themes within each group to exert an effect on the dependent variable. Also, because members of the control group were exposed to their *Clifton StrengthsFinder* results prior to the pretest, the experience of having personal strengths awareness may itself be considered an intervention. Future researchers may therefore consider eliminating *Clifton StrengthsFinder* completion as a precondition for participation in their research, instead opting to administer this assessment as a part of the intervention and not offering it to those in the control condition. Future research on the effectiveness of strengths-based leadership programming may be conducted on other types of campuses and with various student samples to provide a more complete understanding of how strengths approaches affect student leadership development.

The social change model of leadership (SCM, Higher Education Research Institute, 1996) has emerged as a predominant model for student leadership development within higher education. This model was developed for use with undergraduate populations and targets interpersonal development, interpersonal competence, and civic engagement through a values-based approach that emphasizes positive social change (Komives, Dugan, Owen, Slack, Wagner, & Associates, 2011). Researchers have recently begun to examine whether integrating a strengths approach to student leadership development based on the social change model might facilitate these intended educational outcomes.

To that end, a recent study by Tanious (2012) used a quasi-experimental, pretest-posttest, non-randomized control group design to investigate the extent to which a mindful strengths development intervention would affect engaged learning and socially responsible leadership values among undergraduate students enrolled in elective leadership courses. Tanious also sought to examine whether leadership efficacy was a mediating variable in the development of socially responsible leadership values. Participants were enrolled in one of four leadership courses at a private liberal

arts university in the western United States. Those assigned to the treatment condition courses ($n = 23$) were exposed to 10 hours of a mindful strengths development curriculum during class over a period of four weeks. Over the same time period, students in the two control condition courses ($n = 22$) participated in 10 class hours that used a traditional leadership curriculum.

In Tanious' (2012) study, mindfulness was measured via the *Langer Mindfulness Scale* (Langer, 2004), a 21-item instrument that measures four domains of mindful thinking: novelty seeking, engagement, novelty producing, and flexibility. The 10-item *Engaged Learning Index (ELI)*; Schreiner & Louis, 2011) assesses participants' psychological and behavioral engagement in the learning process. Tanious also used a revised version of the *Socially Responsible Leadership Scale (SRLS-R3)*, Dugan & Komives, 2010), an instrument that assesses the eight values defined in the social change model of leadership development (Higher Education Research Institute, 1996). Finally, the *Leadership Efficacy Scale* (Dugan & Komives, 2010) was used to measure the intermediate variable of efficacy for leadership.

Tanious administered pretests before the commencement of the study and posttests at the conclusion of the four-week intervention period and again at the end of the semester. The second posttest was not included in the final analysis because a significant number of students did not complete this measure.

Faculty in the control condition taught students about processes of change relevant to leadership and did not include information about mindfulness or strengths. The mindful strengths intervention was developed in accordance with mindfulness theory, which notes that a mindful approach to life is a focus on the present moment that prompts individuals to notice new stimuli (Langer, 1989). It is characterized by openness to new information, an ongoing creation of new mental categories, and an increased awareness of multiple perspectives (Langer, 1989). The topics addressed in the four sessions included the mind of the leader, restoring curiosity and creativity through mindfulness, developing mindfulness, and strengths

and mindfulness. Each class session in this intervention contained a lecture, associated activities or group work, and a brief homework assignment. In addition, participants in the mindful strengths intervention completed the *Clifton StrengthsFinder* between the first and second intervention sessions.

The results of paired sample t-test indicated that the differences in pretest and posttest engaged learning scores were not statistically significant for the control or the treatment group, and an ANCOVA revealed that there were no significant differences between the groups in levels of engaged learning. Similar analyses were conducted to explore the effects of the treatment condition on socially responsible leadership values, and the results indicated no effect for treatment condition. Collectively, these results indicate that the mindful strengths intervention did not produce a significantly different result than did the control condition in engaged learning or socially responsible leadership values. However, the results indicated that leadership self-efficacy did function as a mediating variable for the development of some of the socially responsible leadership values examined in this study.

One possible confound in Tanious's study is that the mindful strengths interventions were conducted by one faculty member whereas the two control conditions were each led by different faculty. Another limitation is that the instruments measuring mindfulness, socially responsible leadership values, and engaged learning used in this study all relied exclusively on self-reports, which can be associated with several potential concerns. Tanious also noted that her sample size was small and consisted entirely of students who had self-selected into an elective leadership course, which may have affected the nature of her findings as well as their external validity. Finally, because the data indicated that there were no significant changes in mindfulness from pretest to posttest in the treatment group, the mindful strengths intervention did not increase mindfulness in a measurable way. Tanious attributes this finding to the demographic and developmental characteristics of the particular sample of students in her study and alternatively to insufficient strength of the mindfulness component of the strengths intervention.

Although the social change model of leadership emphasizes the importance of values growth in individual, group, and societal domains, the researchers in another recent study that used this model (Lane & Chapman, 2011) specifically focused on the individual values of the social change model, which include consciousness of self, congruence, and commitment (Higher Education Research Institute, 1996). The model suggests that the development of these values requires increased self-knowledge (Komives, Dugan, Owen, Slack, Wagner, & Associates, 2011), and so a strengths-based development approach was considered as a potentially useful strategy for promoting this outcome. In their correlational study, Lane and Chapman (2011) considered whether strengths self-efficacy (i.e., the degree to which individuals believe that they can employ personal strengths effectively) and hope were related to the individual values of the social change model. A secondary research question was whether previously identified predictor variables of student engagement, race, gender, and community service were related to the individual values of the social change model within their particular sample. To answer these questions, Lane and Chapman (2011) invited undergraduate students enrolled in 10-week leadership seminars at a private institution in the southwestern United States to respond to a 130-item questionnaire comprised of several scales. These included the *Strengths Self-Efficacy Scale* (SSES; Zhao, Tsai, Chaichanasakul, Flores, & Lopez, 2010), the individual values scales extracted from the second revision of the *Socially Responsible Leadership Scale* (SRLS-R2; Tyree, 1998), the *Adult Trait Hope Scale* (Snyder, Harris, Anderson, Holleran, Irving, Sigmon, Yoshinobu, Gibb, Langelle, & Harney, 1991), and a version of Gallup's workplace engagement questionnaire (Harter, Schmidt, Killham, & Agrawal, 2009) adapted for use in higher education and intended to assess student engagement in that setting. Each of the participants ($n = 155$) had also previously completed the *Clifton StrengthsFinder*.

Lane and Chapman (2011) calculated correlations between the individual values of the social change model (consciousness of self, congruence, and commitment) and the variables of student engagement, hope, strengths self-efficacy, gender, race, and average number of weekly community service hours. Strengths self-efficacy, hope,

and student engagement were positively related to the combined individual values of the social change model, whereas gender, race, and weekly community service hours demonstrated weak correlations with the individual values of the social change model.

The correlational nature of this study does not permit causal inferences to be made about the effectiveness of the *Clifton StrengthsFinder* in promoting desired outcomes or the impact of the use of a strengths-based approach within student leadership development. The statistical analyses and findings for this particular study are not presented as clearly as they might be, which complicates the interpretation of the findings. In addition, the sample for this study consisted of undergraduates who self-selected into optional co-curricular leadership seminars, and among those students, only a subset responded to the surveys associated with this research, indicating that selection bias may be a factor to consider in this study. Finally, as Lane and Chapman (2011) note, future researchers might consider using a measure of student engagement that is more well-established in higher education in terms of reliability and validity.

Finally, one study sought to examine the interplay between strengths and leadership with a different population in higher education. Specifically, Xaver (2008) was interested in how institutional (as opposed to student) leaders in higher education use personal strengths and integrate the strengths approach into their leadership roles. This researcher used a qualitative case study approach with purposive sampling to explore this issue through interviews with educational leaders at several institutions across the United States. The participants in her research ($n = 24$) were nominated by Gallup as those who had been “working with strengths for several years and cite significant change at their institutions” (Xaver, p. 48). In this sense, Xaver’s sample consisted of individuals who were likely very supportive of the strengths approach and practice and who were familiar with Gallup’s approach to strengths-based education. Among this sample, some ($n = 6$) were executive leaders such as presidents, chancellors, and provosts; others ($n = 6$) were classified as second-tier executives such as deans and vice presidents; a third group ($n = 6$) consisted of mid-level leaders such as divisional and program chairs; and a final group ($n = 6$) were

described as individuals without a formal leadership position who had advocated for or initiated a strengths approach at their home institutions. The researcher conducted one telephone interview with each participant and asked the same 10 questions of each, which included topics such as how each individual supported the use of strengths within his or her organization, the extent to which the leader identified strengths in colleagues, how the leader used strengths to create a shared vision, and other similar topics. The total length of time reported for all 24 interviews was 28 hours total, and audio recordings of the interviews were transcribed by a third party for further analysis. Xaver described a process of grouping her data into similar themes for summary in her final report of the findings, but did not provide the kind of detailed written record of exactly how she approached this endeavor that would allow a reader to independently assess the accuracy of this process.

As opposed to generating a series of themes that represented a meta-analysis of the responses to the overarching research question, Xaver (2008) presented some of the ideas she heard in response to each interview question. Xaver’s findings were presented in several selected verbatim quotations to each of the 10 questions she asked during the interview as well as some of the responses generated in response to the final open-ended question regarding whether there were further ideas that each participant wanted to discuss. She provided written predictions of how participants might respond to several of the questions before conducting the interviews, and many of the themes she subsequently noted in her results align with these predictions. Because Xaver did not report taking steps to increase the credibility or confirmability of her findings, such as triangulation strategies or member-checking techniques, it is possible that she may have unconsciously favored information that aligned with her preconceived hypotheses about the usefulness of a strengths approach (confirmation bias). Social desirability bias is also a potential confound to this study, as several of the interview questions implicitly communicated an expectation that the participants were regularly integrating a strengths approach into their work, prompting them to describe the ways they used strengths in various domains of their professional lives. This approach is contrasted with

framing the interview questions in a way that refrained from assuming foreknowledge of participants' attitudes or behaviors. In addition, if the individuals were aware that they were nominated by Gallup for participation in the study, then they may have perceived Xaver to be an associate or representative of Gallup. Whether or not this assumption was accurate, it is a factor that may have influenced the participants' responses.

Research Designed to Understand the Nature of the Strengths Development Process

Janowski (2006) sought to gain an understanding of the process by which students transition from identifying their strengths with the *Clifton StrengthsFinder* to intentionally applying them, a process this researcher termed *capitalizing on personal strengths*. Janowski asked the directors of strengths-based programs at three universities to nominate students ($n = 8$) who fit three specific criteria for participation in the study; these criteria included participation in strengths-based programming at the institution at which the student was enrolled, the ability to recall and identify personal Signature Themes of talent as indicated by the *Clifton StrengthsFinder*, and identification of one area in which personal strengths are actively applied (social, academic, or occupational). The researcher then conducted a one-on-one semi-structured telephone interview with each participant to solicit demographic information, a description of the strengths-based program in which each student had participated, students' Signature Themes as identified by the *Clifton StrengthsFinder*, details about how students had applied and capitalized on their strengths, and the benefits they perceived from doing so. Following the interview, participants completed the *Five Factor Online Personality Inventory* (Buchanon, Johnson, & Goldberg, 2005) to assess personality along five dimensions, including extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. Transcribed interviews were reviewed by the researcher and an external auditor to increase the trustworthiness of the findings. Janowski noted that theoretical sampling, the process of returning to participants following the conclusion of the interview to clarify and probe more deeply about selected topics, did not occur through follow-up interviews but

was instead solicited via an email inquiry to participants to determine whether they had any additional comments or questions.

Janowski concluded that the participants reported that an ability to capitalize on their strengths depended on three elements: perceived social support, previous experiences of success, and the reinforcement of the benefits of their strengths. This study provides some description of factors that play a role in prompting students to mobilize their strengths in various settings. However, because the researcher interviewed only seven undergraduate participants and one graduate student, it is possible that this small sample size was not sufficient to ensure the attainment of informational redundancy recommended for qualitative research of this type (Lincoln & Guba, 1985) or to make determinations of which findings are rare versus which are more representative of the group being studied. In addition, Janowski's sample consisted entirely of Caucasian students with one exception, and was largely comprised of individuals who reported adherence to the Christian faith, a cumulative GPA of 3.5 or greater, high levels of certain personality traits (extraversion, agreeableness, and conscientiousness, as measured by the *Five Factor Online Personality Inventory*), and who came from intact families. The sample was not representative of the demographic diversity present in the undergraduate population across the country, and this factor limits the transferability of the reported results. The interview protocols used by Janowski in this study were not specified in the research report, making it difficult to independently assess the extent to which the findings result from a thorough investigation of the strengths capitalization process. Although basic descriptions of the data coding process and the measures taken to promote trustworthiness of the findings are provided, these components of the research are not described in sufficient detail to address questions about these important elements inherent to the grounded theory method.

Robles' (2009, 2012) qualitative study used a phenomenological approach to explore elite athletes' reactions to their exposure to the *Clifton StrengthsFinder* and to gain an understanding of these athletes' perceptions of how they personally utilize their Signature Themes of

talent. The purposeful sampling procedures used by this researcher to obtain participants for the study included extreme case, criterion, and snowball sampling procedures, and resulted in a group of female athletes who resided in southern California and who also had elite athlete status in the sport of women's fastpitch softball ($n = 16$). For the purpose of the study, elite status was defined as identifying an athlete eligible for competition at the national, international, or Olympic level, or who is a professional sports person. Although this research was not conducted in a postsecondary setting per se, the majority ($n = 10$) of the participants in the study were categorized as current collegiate players. The athletes in Robles' study represented a variety of player positions, ranging in age from 18 to 46 years.

Participants began by completing the *Clifton StrengthsFinder* and reviewing their Signature Theme descriptions as identified by the inventory. Robles (2009) then asked participants a series of 28 open-ended questions over the course of two individual interview sessions to gain an understanding of their perceptions regarding their *Clifton StrengthsFinder* results and the strengths approach, and to further explore each participant's view of herself as an elite athlete. During the interview process, the researcher guided participants through activities designed to increase their understanding of their Signature Themes of talent, to establish a ranking of the personal relevance of each theme, and to articulate the meaning of these themes in their own words. In addition to these exercises, Robles asked a series of questions that prompted each participant to articulate whether her Signature Themes of talent have been relevant in her role as an athlete in the past and present, and to share her thoughts on whether the strengths approach could be useful in collegiate athletic settings or used to influence athletic team dynamics. The researcher also sought the opinion of an expert reader in her study and triangulated data from multiple sources to increase the trustworthiness of the research findings.

Robles (2009) highlighted six predominant themes that emerged from the analysis of the various data sources. These include the observations that elite athletes tend to use achieving and/or relational strengths in their pursuit of

athletic excellence, associate their high performance with one central theme of talent, intentionally mobilize their strengths to overcome various types of obstacles, and adopt an optimistic stance. In addition, Robles noted that the athletes found unique ways to capitalize on their Signature Themes to cultivate team/coach relationships, assume various leadership roles, and set personal goals. Finally, the elite athletes in Robles' study perceived the strengths approach as having a positive impact on women's athletic teams through providing a means for increasing team cohesion, developing greater understanding of individuals, and establishing respect among teammates and coaches.

As Robles' (2009) research was phenomenological in nature, its most significant limitation is the lack of transferability of its findings. The results of this research are descriptive of the experience of the participants in this particular study and are not applicable to other populations, such as athletes in general, female athletes, elite athletes, or athletes in other sports. Additional research with other types of athletes should be conducted to gain a more detailed understanding of the impact of the *Clifton StrengthsFinder* and the strengths approach for the diverse groups of athletes. In addition, it is possible that participants' responses to Robles' questions may have been influenced by their perceptions that the researcher was hoping for a certain type of response to the questions posed in the study.

Pritchard (2009) conducted a qualitative study that utilized a constructivist approach and a grounded theory methodology to explore the personal experiences of students following an encounter with a strengths-based intervention. Pritchard's research participants included a sample of student mentors ($n = 12$) at a public research university in the United Kingdom who attended two days (approximately 10 total hours) of strengths-based training. These students completed the *Clifton StrengthsFinder*, received their results, and then attended educational sessions over the course of two consecutive days designed to help them understand and apply their Signature Themes of talent. In the days immediately following the intervention, Pritchard conducted a semi-structured interview with each participant, inquiring about students' reactions to their Signature Themes, the nature of their educational

experiences, and the impact of the strengths intervention. Following the initial interview, participants were asked to engage in online journaling over a period of approximately four months, responding to three discussion prompts posted by the researcher at approximately evenly dispersed intervals throughout this time period. These online journaling prompts were intended to elicit students' ongoing written reactions to the strengths intervention and to inquire about the degree to which they were reflecting upon and using the information presented during the strengths intervention. Sixteen weeks after the completion of the two-day strengths training, the researcher conducted a second interview with each participant to inquire about any remaining impact of the initial intervention and to ask students to elaborate on several themes that emerged from the online journals. Data from the interviews, the online journals, and the researcher's field notes were analyzed using Strauss and Corbin's (1990) model of engaging in open, axial, and selective coding processes to develop an emerging theory.

Participants in Pritchard's (2009) study noted that they perceived that exposure to the strengths-based training produced immediate, short-term positive personal and relational effects such as increased confidence and self-efficacy, learning epiphanies, and heightened appreciation for others' strengths. The intensity of these effects was positively mediated by factors such as the participant's degree of resonance with the Signature Themes noted on his or her *Clifton StrengthsFinder* report, the level of psychological reframing from a negative association with a particular talent theme to a positive association, and the projection of the use of personal strengths in the future. Negative mediators of the initial intervention effect included previous exposure to a deficit-based approach to education and skepticism of the accuracy of a web-based instrument in assessing individual uniqueness and talent. Nearly all students in Pritchard's study reported that the initial impact of the intervention had diminished at the four-month interval, but the strength of this effect was varied, as some participants asserted that the strengths-based training and perspective had been of sustained value and relevance in their lives, whereas a portion of the participants noted that the long-term impact of the strengths training

was negligible or nonexistent. Pritchard noted that several factors were associated with students retaining a significant effect from a strengths intervention after four months, including continued reframing of innate traits from perceived weaknesses to strengths, effort to progress from talent identification to strengths development, and regular use of terminology associated with the *Clifton StrengthsFinder* in personal vocabulary. Finally, the factors that were negative mediators of the long-term intervention effect include lack of ongoing curricular follow-up or training beyond the initial intervention, and personal factors such as distraction or lack of persistent interest in sustained engagement with the results generated by the *Clifton StrengthsFinder*.

Pritchard's (2009) findings provide insight into the dynamics of students' reactions to a strengths-oriented educational program and note several factors that may contribute to either a sustained or a depreciating strengths intervention effect. The researcher cautions that the student interviews focused on gaining information about the personal impact of a strengths-based educational intervention and did not explore the influence of extraneous factors such as gender, race, and socio-economic status in shaping the reported results. Pritchard's study was conducted with paid student mentors of middle-class standing, and with the exception of one student, all participants in Pritchard's study were Caucasian. This type of selection bias could result in missing themes or concepts in the data and therefore has limited transferability to other populations. It is also notable that only a portion of the participants in Pritchard's research engaged in the online journaling portion of the study, creating the possibility that the written thoughts of this subgroup of participants were not representative of the perceptions of the entire group under investigation.

Research on Correlates of Clifton StrengthsFinder® Themes Within Postsecondary Samples

Another group of researchers has focused on understanding more about the *Clifton StrengthsFinder* as an instrument as opposed to assessing the impact of a program integrating

its use. Schenck (2009) explored the relationship between *Clifton StrengthsFinder* talent themes to personality profile and vocational interests. Personality profiles were generated using the *Myers-Briggs Type Indicator* (MBTI; Consulting Psychological Press, 2003), and vocational interests were measured according to the *Strong Interest Inventory* (SII; Consulting Psychological Press, 2005). This researcher sought to understand the relationship between *Clifton StrengthsFinder* themes and both gender and academic program. Participants in this study included students from master's-level programs in either counseling and career development ($n = 65$) or organizational performance and change ($n = 99$), and were predominantly female (130 of 164 total). Schenck's study was non-experimental, utilizing archival data. When numerical values were provided by an assessment (such as for each of the general occupational themes within the *Strong Interest Inventory*), these values were used in the subsequent analyses; categorical data were recoded into a numerical format in all other cases. For example, the researcher assigned sequential numerical values for each of the 16 possible personality types indicated by the *Myers-Briggs Type Indicator* strengths profiles for each participant in the study, and the *Clifton StrengthsFinder* themes were subsequently recoded from nominal data to dichotomous numerical values to indicate either the presence or absence of each talent theme from that individual's five most predominant themes. Dichotomous variables for gender and academic program were created in a similar fashion. Descriptive analyses including frequency and strength of occurrence were conducted to determine the relationship between talent themes to gender and academic program, as well as talent themes to personality traits and type. For vocational interests, analyses were conducted to determine the mean and standard deviation of each general occupational theme (as measured by the SII) for when a CSF talent theme was present versus when a talent theme was absent from the Signature Themes profile.

Schenck's (2009) extensive findings on relationships among academic program, vocational interests, gender, and personality type are not summarized here, as they are not germane to the purposes of this particular review. However, her findings describing how *Clifton StrengthsFinder* themes

are related to the other variables in her sample are provided. Schenck found that all of the individuals in her sample who had the *Clifton StrengthsFinder* Signature Theme of Communication or Woo were extraverted, and all those with the Signature Themes of Analytical and Significance preferred the sensing personality trait. Other similar pairings existed between the theme of Analytical and the thinking personality trait, as well as with the Discipline and Significance themes and the judging personality tendency. In addition to these frequently occurring pairs, Schenck also described a variety of CSF themes and personality traits that never coincided in her sample. However, she noted that in spite of these trends of co-occurrence (or lack thereof), she did not find similar patterns between the magnitude or clarity of various personality traits as measured by the MBTI and corresponding Signature Themes, which Schenck described as providing evidence that "the nature of the attraction between certain personality traits and strengths may be more complex than just occurrence or clarity alone would indicate" (pp. 146-147). Regarding relationships between the general occupational types measured on the *Strong Interest Inventory* (Consulting Psychological Press, 2005) and *Clifton StrengthsFinder* Signature Themes, Schenck noted that there were not discernible patterns of interaction, explaining that perhaps this finding was indicative that talent themes can be applied across vocational endeavors. Finally, Schenck reviewed the frequency distributions for the most prevalent *Clifton StrengthsFinder* themes by gender and academic program and found that CSF themes were not equally distributed by gender and academic program. Schenck noted some differences between these categories as well as a few slight trends in the data but was not able to describe a definitive pattern that encapsulated the relationship between gender, academic program, and CSF theme distribution.

Schenck's (2009) study provides some initial information regarding how *Clifton StrengthsFinder* results may be related to variables such as vocational preference, personality profile, gender, and academic discipline, but the results should be interpreted cautiously and viewed as a description of the researcher's particular sample as opposed to being applicable to other populations. Schenck's

small sample ($n = 164$) drawn from a single institution and only two graduate areas of academic study with a strongly disproportionate number of females limited the conclusiveness and generalizability of her findings. This researcher's initial exploration of her study sample revealed personality trait preferences that deviated significantly from the established nationally representative sample, which is likely to have influenced the results of the study as a whole. In addition, because the ipsative aspects of *Clifton StrengthsFinder* do not permit norm-referencing, Schenck was somewhat impaired by the nature of the inventory results available to her and the inability to assess the magnitude of strength for each of the talent themes for a particular individual — as an absolute value or in reference to others. The categorical nature of much of the data in this study limited the type of statistical analyses that could be performed as well as the richness and sophistication of the findings. Furthermore, Schenck's procedure of coding each participant's *Clifton StrengthsFinder* themes as a dichotomous variable does not align with Gallup's assertion that each of the 34 themes measured by the *Clifton StrengthsFinder* exist in degrees within an individual as opposed to being either strictly present or absent. The practice of coding non-Signature Themes as "absent" is not reflective of the reality that these themes simply exist in lesser degrees or are not among the most dominant for that particular individual.

Another study that may have relevance within the domain of career counseling and advising is one in which researchers sought to determine the relationships between the 34 *Clifton StrengthsFinder* themes and indicators of Holland's (1997) six vocational personality types (Carson, Evans, Gitin, & Eads, 2011). This research was conducted within the context of a larger study of 1,747 undergraduate students enrolled in introductory legal education courses at an online university, and among those, a subset of students ($n = 117$) formed the sample for this study after having completed another inventory called the *Kuder Career Search* (KCS, Zytowski, n.d.). The KCS contains six career cluster subscales that provide a measure of vocational personality, which the researchers indicate correspond to Holland types, although the KCS subscales are given different names.

Although not entirely clear from the description offered by Carson and colleagues (2011), it appears that the career clusters from the KCS were used as a proxy for Holland vocational types in this study, although no clear rationale is provided for this choice. The initial portion of the research generated a distribution frequency ranking of the 34 *Clifton StrengthsFinder* themes in the larger student sample ($n = 1,747$) and an exploratory factor analysis consisting of a principal components analysis followed by varimax rotation was then performed, resulting in a set of 11 clusters that the authors believe represent higher-order structures of talent as measured by the *Clifton StrengthsFinder*. The researchers then correlated these structures as well as the individual *Clifton StrengthsFinder* themes with the KCS career clusters from the smaller study sample ($n = 117$).

Results indicated that some relationships do exist between *Clifton StrengthsFinder* themes and vocational personality types as measured by the KCS, as each of the six career clusters were related to at least one of the 11 CSF factors generated in this study. However, the results of this investigation are limited by some features of the research. Specifically, the sample was drawn from a single institution and consisted exclusively of students who were in one area of academic study. The sample was predominantly female (79% in the larger sample for the first portion of the study and 82% in the smaller sample subset), thereby limiting generalizability. Although the use of the KCS in this study may be a valid approach, Carson and colleagues did not present sufficient information regarding the reliability and validity of this instrument or provide clear explanation or evidence regarding how it maps onto Holland types.

Another recent publication describes the results of two studies conducted in tandem (Sutton, Phillips, Lehnert, Bartle, & Yokomizo, 2011) designed to better understand the variability within *Clifton StrengthsFinder* results across two samples of students and the correlation between CSF themes and variables associated with learning and academic success. Specifically, these researchers examined trends and variability in collective *Clifton StrengthsFinder* results of two distinct student samples assessed at the same institution annually over a period of two consecutive years and also sought to understand the relationship between *Clifton*

StrengthsFinder theme groups and academic self-efficacy, GPA, and standardized test scores. In these studies, the four-dimensional classification of the *Clifton StrengthsFinder* themes described by Hayes (2001) was used to group the 34 themes into categories: striving, relating, thinking, and impacting. These groupings were used as a way to cluster themes into types for subsequent analysis, as described in the following section.

In the first of the two studies, Sutton and colleagues (2011) retrieved archival data from a student database at their home institution and examined these data for correlations between variables of interest in the study. Specifically, the researchers extracted GPA, ACT and SAT scores (using a procedure verified by previous research to convert SAT scores into equivalent ACT scores in their sample), gender, age, accumulated college credits, and students' Signature Themes from the *Clifton StrengthsFinder*. In addition, they created an index for each student ($n = 512$) that served as a descriptor of that individual's Signature Theme profile in terms of how it was distributed among the four dimensions of striving, thinking, relating, and impacting. This index was created by assigning one point for each Signature Theme that appeared in each category, meaning that each individual case had five total points distributed among the four categories and no more than five points in any single category. The researchers reported the frequency of each of the 34 *Clifton StrengthsFinder* themes among the sample and calculated correlations between each of the four strengths theme dimensions, converted ACT scores, and GPA. Following the calculation of correlation coefficients, a backwards multiple regression analysis was performed to determine which of the variables that were significantly correlated with GPA might be useful predictors. This procedure was repeated in a second study ($n = 344$), which varied only in that participants in this sample were members of the subsequent class year who were asked to complete a measure known as the *Academic Self-Efficacy Scale (ASE)*; Chemers, Hu, & Garcia, 2001) so that researchers could assess whether academic self-efficacy made a significant contribution to explaining academic performance beyond that accounted for by general ability. The frequency and distribution of Signature Themes among the samples in the two studies were then compared.

Sutton and colleagues (2011) found that in both samples the two most frequently occurring themes included Belief and Adaptability, and that both samples also included Developer as one of the five most prevalent themes. Upon further analysis, the researchers noted that the top 10 themes were identical in both samples, although the rank order of prevalence among these themes varied between the two groups. The authors concluded that these data provided "reasonable evidence that the [*Clifton StrengthsFinder*] was, on average, a stable measure of strengths themes" (p. 33) for the students on their particular campus. Significant positive correlations were noted between the *thinking* category of *Clifton StrengthsFinder* themes and converted ACT scores; significant negative correlations were found between the *impacting* category and GPA in both studies. As expected, academic self-efficacy provided significant additional predictive value for GPA beyond that of converted ACT scores alone.

This study was conducted at a single institution over a relatively short time period with a more homogenous racial and religious composition than is present at many postsecondary institutions, which means that the results are contextualized and therefore should not be considered as descriptive of other samples. Although the researchers assert that their study provides initial evidence for the stability of Signature Themes on their own campus from one year to another, it is important to be aware that this conclusion is based on two separate samples of data and does not indicate the extent to which themes are stable within a particular individual over time (test-retest reliability). This work by Sutton and colleagues is the first published study to use the four-dimensional model (Hayes, 2001) of *Clifton StrengthsFinder* themes as predictors of other variables, and additional work in this area can help to determine the validity of this approach as well as that of the specific procedure used within this study to create an index for each participant.

DIRECTIONS FOR FUTURE RESEARCH

As strengths-based approaches gain prominence in educational settings, it is critical to build upon existing knowledge by conducting investigations aimed at addressing the multitude of questions that have yet to be answered

regarding strengths-based approaches in education. Continued research is needed to develop an increasingly refined and empirically informed approach to strengths-based education. Several authors (e.g., Anderson, 2004; Lopez & Louis, 2009) have highlighted some of the distinctive principles inherent to the strengths approach within the educational context, and yet ongoing work is necessary to delineate the most effective methods by which these principles can be actualized. Much of the existing research focuses on the overall impact of strengths-based interventions, but it is critical to also consider which aspects of these approaches are most efficacious in producing desired outcomes and the mechanisms by which they exert their effect. Research findings of this type would inform practitioners seeking to optimize the content and structure of strengths-based programs.

Several methodological considerations should inform future research. Controlled intervention studies with experimental or quasi-experimental designs utilizing instruments with demonstrated reliability and validity could be particularly helpful in empirically assessing the impact of strengths initiatives. There is a need for more intervention studies that are skillfully designed with a careful consideration of the outcomes or goals of the program informing the creation of each component of the intervention. As this review highlights, this type of research may be able to address some of the unanswered questions that remain from existing work that is correlational in nature, lacks a control group for comparison, or has been conducted using instruments that are not well-established. In addition to quantitative research efforts, studies that are qualitative in nature may generate valuable insights related to how students respond to distinct aspects of strengths-oriented activities as well as which specific thoughts or emotions are elicited by the messages embedded within various strengths approaches. Finally, little is known about the long-term impact of exposure to strengths-based programs or how to extend the duration of the known positive effects. Time-series designs and other approaches that lengthen the time

horizon for the examination of individuals who experience strengths programs could be useful in adding to the current understanding of whether these initiatives influence student success in an enduring way.

As Gallup continues to advocate for educational approaches that challenge students to develop their strengths, it is necessary to better articulate and understand what this process entails and the various forms it might take. For example, there are fruitful possibilities in research that examines how strengths differentially manifest in various contexts and constellations (Biswas-Diener, Kashdan, & Minhas, 2011). It would also be helpful to understand the most effective strategies by which educators might encourage students' transition from merely identifying strengths to proactively developing them in more sophisticated ways that enhance the quality and not merely the quantity of strengths use and application (Louis, 2011).

Pascarella (2006) asserts that the ever-expanding diversity of the American population compels educational researchers to devote heightened attention to routinely examining the conditional effects in addition to the general effects of interventions, as it is possible that the same intervention may differ in the magnitude or direction of its impact for students with different characteristics or traits. This assertion means that further research should be conducted to examine the impact of strengths-based approaches on more diverse student populations enrolled in varying types of secondary and postsecondary institutions. Much of the existing research involves traditional-aged college students and lacks racial and ethnic diversity.

In addition, future investigations should assess the ideal timing of exposure to strengths-based interventions based upon the desired outcomes of such programs. This type of research should consider the ways in which the students' developmental levels during each phase of their educational career may shape their response to strengths-based approaches. Researchers could also consider designing and assessing strengths interventions tailored to strategically

target critical issues faced by students as they progress along a developmental course.

Finally, it would also be useful to consider initiating investigations that assess the impact of strengths interventions beyond the individual student's self-perceptions by examining whether students' exposure to strengths-oriented training produces any measurable impact on their relationships, their ability to engage in perspective-taking, their appreciation for diverse backgrounds and perspectives, and their contribution to community, among other outcomes. Researchers could also consider conducting studies to examine the more broad-based impact of strengths interventions at the campus or community level.

REFERENCES

- Anderson, E. C. (2000, February). *Affirming students' strengths in the critical years*. Paper presented at the National Conference on the First Year Experience, Columbia, SC.
- Anderson, E. C. (2003). *StrengthsQuest: Curriculum outline and learning activities*. Princeton, NJ: Gallup.
- Anderson, E. C. (2004). *What is strengths-based education?: A tentative answer by someone who strives to be a strengths-based educator*. Unpublished manuscript.
- Anderson, E. C., Cave, S., & McDowell, S. (2001, October). *Why become strengths-based? An academic and theological context for strengths programming*. Paper presented at Eastern College, National Conference on Identifying and Developing Student Strengths, St. Davids, PA.
- Anderson, E. C., Schreiner, L. A., & Shahbaz, P. (2003). *Research and evaluation of strengths counselors in a New Beginnings course*. Unpublished raw data, Azusa Pacific University, Azusa, CA.
- Anderson, E. C., Schreiner, L. A., & Shahbaz, P. (2004). *Research and evaluation of strengths counselors in a New Beginnings course*. Unpublished raw data, Azusa Pacific University, Azusa, CA.
- Aspinwall, L. G., & Staudinger, U. M. (2003). A psychology of human strengths: Some central issues of an emerging field. In L. G. Aspinwall & U. M. Staudinger (Eds.), *A psychology of human strengths: Fundamental questions and future directions for a positive psychology* (pp. 9-22). Washington, D.C.: American Psychological Association.
- Asplund, J., Lopez, S. J., Hodges, T., & Harter, J. (2009). *The Clifton StrengthsFinder 2.0 technical report: Development and validation*. Princeton, NJ: Gallup.
- Austin, D. B. (2004). *Indicators of Academic Achievement Questionnaire*. Unpublished instrument.
- Austin, D. B. (2005). The effects of a strengths development intervention program upon the self-perceptions of students' academic abilities. *Dissertation Abstracts International*, 66(05A), 1631-1772. (UMI No. AAT3175080)
- Biswas-Diener, R., Kashdan, T. B., & Minhas, G. (2011). A dynamic approach to psychological strength development and intervention. *The Journal of Positive Psychology*, 6(2), 106-118.
- Braskamp, L. A., & Ory, J. C. (1994). *Assessing faculty work: Enhancing individual and institutional performance*. San Francisco, CA: Jossey-Bass.
- Brodersen, D. (2008). Predictors of peer leader success as strengths counselors in a first-year seminar. *Dissertation Abstracts International*, 69(03A), 890-1131. (UMI No. AAT3308536)
- Buchanon, T., Johnson, J. A., & Goldberg, L. R. (2005). Implementing a five-factor personality inventory for use on the internet. *European Journal of Psychological Assessment*, 21(2), 115-127.
- Buckingham, M. (2007). *Go Put Your Strengths to Work*. New York, NY: The Free Press.
- Buckingham, M., & Clifton, D. O. (2001). *Now, Discover Your Strengths*. New York, NY: The Free Press.
- Cameron, K. S., Dutton, J. E., & Quinn, R. E. (Eds.). (2003). *Positive organizational scholarship: Foundations of a new discipline*. San Francisco, CA: Berrett-Koehler.

- Cantwell, L. (2005). A comparative analysis of strengths-based versus traditional teaching methods in a freshman public speaking course: Impacts on student learning and engagement. *Dissertation Abstracts International*, 67(02A), 478-700. (UMI No. AAT3207574)
- Carson, A. D., Evans, K., Gitin, E., & Eads, J. (2011). Mapping StrengthsQuest themes to Holland's vocational personality types. *Journal of Career Assessment*, 19(2), 197-211. doi: 10.1177/1069072710385653
- Cave, S. L. R. (2003). The effects of strengths education on the academic motivation of first-year college students. *Dissertation Abstracts International*, 64(02A), 417-570. (UMI No. AAT3082036)
- Chaichanasakul, A., Tsai, C., Zhao, R., Flores, N., & Lopez, S. (n.d.) *Development and evaluation of the Strengths Self-Efficacy Scale (SSES)*. Unpublished manuscript.
- Chemers, M. M., Hu, L., & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology*, 93(1), 55-64.
- Clifton, D. O. (1997). *The Self-Reflection Survey*. Princeton, NJ: Gallup.
- Clifton, D. O., & Anderson, C. E. (2002). *StrengthsQuest*. Washington, DC: Gallup.
- Clifton, D. O., Anderson, C. E., & Schreiner, L. A. (2006). *StrengthsQuest* (2nd ed.). New York, NY: Gallup Press.
- Clifton, D. O., & Harter, J. K. (2003). Investing in strengths. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 111-121). San Francisco, CA: Berrett-Koehler.
- Clifton, D. O., & Nelson, P. (1992). *Soar With Your Strengths*. New York, NY: Dell.
- Cokley, K. O., Bernard, N., & Cunningham, D. (2001, July). A psychometric investigation of the AMS using a United States sample. *Measurement and Evaluation in Counseling Development*, 34(2), 109-119.
- Consulting Psychological Press. (2003). *Myers-Briggs Type Indicator: Form M*. Mountain View, CA: Author.
- Consulting Psychological Press. (2005). *Strong Interest Inventory*. Mountain View, CA: Author.
- Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual Review of Psychology*, 51, 171-200.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: HarperCollins.
- Drucker, P. (2000). Managing knowledge means managing oneself. *Leader to Leader*, 16, 8-10.
- Dugan, J. P., & Komives, S. R. (2010). Influences on college students' capacity for socially responsible leadership. *Journal of College Student Development*, 51, 525-549.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256-273.
- Elliot, A. J., McGregor, H. A., & Gable, S. L. (1999). Achievement goals, study strategies, and exam performance: A meditational analysis. *Journal of Educational Psychology*, 91(3), 549-563.

- Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54, 5-12.
- Estévez, E. F. (2005). The role of strengths-based case management strategies in the promotion of social capital and academic success of underprepared students. *Dissertation Abstracts International*, 66(08A), 2852-2975. (UMI No. AAT3185052)
- Frey, D., Jonas, E., & Greitemeyer, T. (2003). Intervention as a major tool of a psychology of human strengths: Examples from organizational change and innovation. In L. G. Aspinwall & U. M. Staudinger (Eds.), *A psychology of human strengths: Fundamental questions and future directions for a positive psychology* (pp. 149-164). Washington, D.C.: American Psychological Association.
- Gallup. (1999). *Clifton StrengthsFinder*. Washington, D.C.: Author.
- Gallup. (2006). *Strengths Impact Measure*. Omaha, NE: Author.
- Gallup. (2008). *A framework for strengths programming*. Lincoln, NE: Author.
- Gallup. (2012). Gallup Strengths Center. Retrieved from <https://www.gallupstrengthscenter.com/>
- Gillum, W. M. (2005). The effects of strengths instruction on under-performing high school students in mathematics. *Dissertation Abstracts International*, 66(01A), 86-238. (UMI No. AAT3185052)
- Hall, N. C., Perry, R. P., Ruthig, J. C., Hladkyj, S., & Chipperfield, J. G. (2006). Primary and secondary control in achievement settings: A longitudinal field study of academic motivation, emotions, and performance. *Journal of Applied Social Psychology*, 36, 1430-1470.
- Harter, J. K., Schmidt, F. L., Killham, E. A., & Agrawal, S. (2009). *Q¹² meta-analysis: The relationship between engagement at work and organizational outcomes*. Washington, DC: Gallup University Press.
- Hayes, T. L. (2001). Appendix: A technical report on StrengthsFinder. In M. Buckingham & D. O. Clifton, *Now discover your strengths* (pp. 247-258). New York, NY: Free Press.
- Higher Education Research Institute (1996). *A social change model of leadership development: Guidebook version III*. College Park, MD: National Clearinghouse for Leadership Programs.
- Hodges, T. D., & Clifton, D. O. (2004). Strengths-based development in practice. In P. A. Linley & S. Joseph (Eds.), *International handbook of positive psychology in practice: From research to application* (pp. 256-268). New York, NY: Wiley.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Odessa, FL: Psychological Assessment Resources.
- Janowski, K. (2006). A theory of capitalizing on personal strengths. *Dissertation Abstracts International*, 67(04A). (UMI No. AAT3215161)
- Keup, J., & Barefoot, B. (2005). Learning how to be a successful student: Exploring the impact of first-year seminars on student outcomes. *Journal of the First-Year Experience & Students in Transition*, 17(1), 11-47.
- Komives, S. R., Dugan, J. P., Owen, J. E., Slack, C., Wagner, W., & Associates (2011). *The handbook for student leadership development* (2nd ed.). San Francisco, CA: Jossey-Bass.

- Kouzes, J. M., & Posner, B. Z. (2002). *The leadership challenge* (3rd ed.). San Francisco, CA: Jossey Bass.
- Kouzes, J. M., & Posner, B. Z. (2006). *The Student Leadership Practices Inventory* (2nd ed.) San Francisco, CA: Wiley and Sons.
- Kuh, G.D., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates. (2005). *Student success in college: Creating conditions that matter*. San Francisco, CA: Jossey-Bass.
- Lane, F. C., & Chapman, N. H. (2011). The relationship of hope and strength's [*sic*] self-efficacy to the social change model of leadership. *Journal of Leadership Education*, 10(2), 116-137.
- Langer, E. J. (1989). *Mindfulness*. Reading, MA: Addison Wesley.
- Langer, E. J. (2004). *Mindfulness Scale*. Worthington, OH: IDS Publishing Corporation.
- Lehnert, A. B. (2009). The influence of strengths-based development on leadership practices among undergraduate college students (Doctoral dissertation). Retrieved from Dissertation Abstracts International. (UMI No. 3377758)
- Liesveld, R., & Miller, J. A. (2005). *Teach With Your Strengths*. New York, NY: Gallup Press.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Lopez, S. J. (2007, April). *Positive psychology on campus*. Presentation at the Noel Academy for Strengths-Based Leadership and Education Positive Psychology on Campus Symposium, Azusa Pacific University, Azusa, CA.
- Lopez, S. J., Hodges, T., & Harter, J. (2005). *The Clifton StrengthsFinder technical report: Development and validation*. Princeton, NJ: Gallup.
- Lopez, S. J., & Louis, M. C. (2009). The principles of strengths-based education. *Journal of College and Character*, 10(4), 1-8.
- Louis, M. C. (2008). A comparative analysis of the effectiveness of strengths-based curricula in promoting first-year college student success. *Dissertation Abstracts International*, 69(06A). (UMI No. AAT 3321378)
- Louis, M. C. (2011). Strengths interventions in higher education: The effect of identification versus development approaches on implicit self-theory. *The Journal of Positive Psychology*, 6(3), 204-215.
- Louis, M. C., & Schreiner, L. A. (2012). Helping students thrive: A strengths development model. In L. A. Schreiner, M. C. Louis, & D. N. Nelson (Eds.) *Thriving in transitions: A research-based approach to college student success* (pp. 19-40). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing the human competitive edge*. New York, NY: Oxford University Press.
- Mather, P. (2010). Positive psychology and student affairs practice: A framework of possibility. *Journal of Student Affairs Research and Practice*, 47(2), 156-172.
- Morreale, S. P., Moore, M. R., Taylor, K. P., Surges-Tatum, D., & Hulbert-Johnson, R. (1993). *The competent speaker speech evaluation form*. Annandale, VA: Speech Communication Association.

- Passarelli, A., Hall, E., & Anderson, M. (2010). A strengths-based approach to outdoor and adventure education: Possibilities for personal growth. *Journal of Experiential Education*, 33(2), 120-135.
- Pascarella, E. T. (2006). How college affects students: Ten directions for future research. *Journal of College Student Development*, 47, 508-520.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research* (Vol. 2). San Francisco, CA: Jossey-Bass.
- Perry, R. P., Hladkyj, S., Pekrun, R., & Pelletier, S. (2001). Academic control and action control in the achievement of college students: A longitudinal field study. *Journal of Educational Psychology*, 93, 776-789.
- Peterson, C., & Seligman, M. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press; Washington, D.C.: American Psychological Association.
- Pritchard, G. M. (2009). *A grounded theory of the factors that mediate the effect of a strengths-based educational intervention over a four-month period* (Doctoral dissertation). Retrieved from Dissertation Abstracts International. (UMI No. 3376400)
- Purnell School. (2007). *The Affinities Program: Discovering strengths in girls for whom success has been elusive*. Retrieved from http://www.purnell.org/page/why_purnell/affinities_program
- Rath, T., & Clifton, D. O. (2004). *How Full Is Your Bucket?* New York, NY: Gallup Press.
- Rath, T., & Conchie, B. (2009). *Strengths-based leadership*. New York, NY: Gallup Press.
- Robins, R. W., & Pals, J. L. (2002). Implicit self-theories in the academic domain: Implications for goal orientation, attributions, affect, and self-esteem change. *Self and Identity*, 1, 313-336.
- Robles, A. M. (2009). *The perceptions of strengths-based play, team cohesion, relational capacity, and group dynamics: Voices of elite athletes* (Doctoral dissertation). Retrieved from Dissertation Abstracts International. (UMI No. 3356907)
- Robles, A. M. (2012, May). Voices of elite athletes: Perceptions through a strengths-based philosophy of sport. *Journal of Performance Psychology*, 1-37.
- Saleebey, D. (1997). The strengths approach to practice. In D. Saleebey (Ed.), *The strengths perspective in social work practice* (2nd ed., pp. 49-57). New York, NY: Longman.
- Saleebey, D. (2001). *Human behavior and social environments: A biopsychosocial approach*. New York, NY: Columbia University Press.
- Saleebey, D. (2006). Introduction: Power in the people. In D. Saleebey (Ed.), *The strengths perspective in social work practice* (4th ed., pp. 1-24). Boston, MA: Pearson.
- Schenck, P. M. (2009). *Analyzing the relationship of strengths to personality preferences and vocational interests utilizing Clifton StrengthsFinder, Myers-Briggs Type Indicator, and Strong Interest Inventory* (Doctoral dissertation). Retrieved from Dissertation Abstracts International. (UMI No. 3401033)
- Schreiner, L. A. (2004a). *Affirming students' strengths: A campus-wide approach to student success and retention* (Report to the Fund for the Improvement of Post-Secondary Education P116B00306). Washington, D.C.: U. S. Department of Education.

- Schreiner, L. A. (2004b). *Academic Engagement Index*. Unpublished instrument.
- Schreiner, L. A., & Anderson, E. C. (2005). Strengths-based advising: A new lens for higher education. *NACADA Journal*, 25(2), 20-27.
- Schreiner, L. A., Hulme, E., Hetzel, R., & Lopez, S. (2007). Positive psychology on campus. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (2nd ed.) (pp. 569-578). New York, NY: Oxford University Press.
- Schreiner, L. A., & Louis, M. C. (2011). The Engaged Learning Index: Implications for faculty development. *Journal on Excellence in College Teaching*, 22(1), 5-28.
- Shushok, F., & Hulme, E. (2006). What's right with you: Helping students find and use their personal strengths. *About Campus*, 11(4), 2-8.
- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., Yoshinobu, L., Gibb, J., Langelle, C., & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60(4), 570-585.
- Snyder, C. R., Simpson, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the State Hope Scale. *Journal of Personality and Social Psychology*, 70, 321-335.
- Stebbleton, M. J., Soria, K. M., & Albecker, A. (2012). Integrating strength-based education into a first-year experience curriculum. *Journal of College and Character*, 13(2), 1-8.
- Strauss, A. & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Sutton, G. W., Phillips, S., Lehnert, A. B., Bartle, B. W., & Yokomizo, P. (2011). Strengths assessment, academic self-efficacy, and learning outcomes in a Christian university sample. *Journal of Psychology and Christianity*, 30(1), 28-36.
- Swanson, J. E. (2006). Success in the first year: Impact of alternative advising on students at a liberal arts college. *Dissertation Abstracts International*. (UMI No. AAT 3246327)
- Tanious, C. M. (2012). *Mindful strengths development: Leveraging students' strengths for 21st century learning and leadership*. Unpublished doctoral dissertation, Azusa Pacific University, Azusa, CA.
- Tomasiewicz, R. (2011). *The efficacy of a strengths-based approach in a university 101 course with undecided students*. Unpublished doctoral dissertation, University of Illinois, Urbana, IL.
- Turner, J. L. (2004). *StrengthsQuest counseling applied to high school freshmen*. Los Angeles, CA: CASP Scientist-Practitioner Grant.
- Tyree, T. M. (1998). *Designing an instrument to measure socially responsible leadership using the social change model of leadership development* (Doctoral dissertation). Retrieved from Dissertation Abstracts International, 59(06), 1945. (AAT 9836493)
- Upcraft, M. L., Gardner, J. N., & Barefoot, B. O. (Eds.). (2005). *Challenging and supporting the first-year student: A handbook for improving the first year of college*. San Francisco, CA: Jossey-Bass.
- Vallerand, R. J., Blais, M., Briere, N. M., & Pelletier, L. G. (1989). Construction et validation de l'Eschelle de Motivation en Education. *Revue Canadienne Sciences du Comportement*, 21, 323-349.

- Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briere, N. M., Senecal, C., & Vallieres, E. F. (1992). The academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52(4), 1003-1017.
- Williamson, J. S. (2002). *Assessing student strengths: Academic performance and persistence of first-time college students at a private church-affiliated college*. Unpublished doctoral dissertation, University of Sarasota, New York.
- Winseman, A. L., Clifton, D. O., & Liesveld, C. (2004). *Living Your Strengths* (2nd ed.). New York, NY: Gallup Press.
- Wisner, M. D. (2008). Psychological capital and strengths ownership as predictors of effective servant leadership (Doctoral dissertation). Retrieved from Dissertation Abstracts International. (UMI No. 3348323)
- Wisner, M. D. (2011). Psychological strengths as predictors of effective student leadership. *Christian Higher Education*, 10(3-4), 353-375.
- Xaver, C. A. (2008). Exploring strengths-based leadership in higher education: A case study (Doctoral dissertation). Retrieved from Dissertation Abstracts International. (UMI No. 3320550)
- Zhao, R., Tsai, C., Chaichanasakul, A., Flores, L. Y., & Lopez, S. (2010, August). *A validity and reliability study of the Strengths Self-Efficacy Scale*. Poster presented at the 118th annual meeting of the American Psychological Association, San Diego, CA.
- Zytowski, D. G. (n.d.). Kuder Career Search with Person Match technical manual (v. 1.2). Retrieved from www.kuder.com/downloads/kcs-tech-manual.pdf

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