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# Learning from Failure: An Action Research Case Study on Developing Growth Mindset Through Academic Risk-Taking in an Athletic Training Program

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Learning from Failure: An Action Research Case Study on Developing Growth Mindset Through
Academic Risk-Taking in an Athletic Training Program


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## Approval Page

This dissertation was submitted by Sarah B. Rabe under the direction of the persons listed below. It was submitted to the Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.


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"Our heroes in history were not modest little women." –Renee Rabinowitz

**Abstract**

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The employment of academic risk-taking and growth mindset instructional practices in
educational fields, though supported in literature, is limited and not commonly documented in
the classroom.  The purpose of this action research case study was to determine the impact of
facilitation of growth mindset through modification of instructional practices in athletic training
clinical courses at an Institution of Higher Learning.  Constructive failure and growth mindset
theories supported the mixed-methods research approach and the modification of instructional
practices made during the study.  Data were collected through growth mindset and academic
risk-taking instruments and through semi-structured survey questions.  The data analysis was
performed through thematic coding and descriptive statistics.  The findings of this case study
revealed that even small adjustments to instructional practices generated improvements in
participant views of their abilities and responses to challenging situations.  When participants
were provided with immediate feedback during applied decision-making activities, they reported
the feedback helpful and supportive in critical thinking.  Allowing small choice in challenging
situations provided ownership for the participants, which in turn resulted in the selection of
challenging activities.  Small classroom adjustments to allow for formative participation
opportunities where accuracy was not the focus were successful at providing participants with
supportive environments where learning was not feared, and knowledge was the primary

objective. The researcher suggests applying the instructional methods utilized in the present research study, such as academic risk-taking activities through formative activities where the focus of the outcome is to increase learning rather than accuracy.

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## Chapter 1: Introduction

Jones (2012) stated, "To have ideas is risky. To act on ideas is even riskier" (p. 1).

Creativity, originality, imagination, inspiration, inventiveness; these are characteristics educators

attempt to develop in students and employers seek in employees. No one "becomes smart,

creative, self-confident, and respectful of others without taking risks—remaining open to

possibilities and acting on them" (Jones, 2012, p. 2). The future needs individuals with these

characteristics, and parents and educators play an essential role in the cultivation of such traits in

students. The current educational system does not support an instructional foundation where

students feel comfortable developing learning abilities in an environment of trust; rather, the

system supports a foundation where students are judged and are often led to believe intelligence

and ability are fixed. Students and instructors focus on the score or performance and not the

learning process, perpetuating this problem (Clifford, 1991; Dweck, 2006; Maneesri, 1990).

Students in today's society often portray a fixed mindset by believing intelligence is an inherited

trait, rather than believing it is "impossbile to foresee what can be accomplished with years of

passion, toil, and training" (Dweck, 2006, p. 7). Students need to understand that with work and

effort, hard tasks are possible. In this understanding, students portray a growth mindset.

**Growth and Fixed Mindset**

Believing in a growth mindset is believing one's qualities can be cultivated through

continual effort, problem-solving strategies, and the use of outside resources; compared to the

fixed mindset in which one believes qualities are fixed and unable to be improved (Dweck,

2006). Dweck's (2006) research also indicated that students who transitioned to junior high with

a fixed mindset experienced a decline in grade point average (GPA) due to the inability to adapt

to the more difficult workload, opposite of those who displayed a growth mindset, who

demonstrated an increase in the same measure.  These findings echoed Maneesri's (1990) finding that individuals who possess a growth mindset were more likely to face a challenging task rather than avoid it.

**Fixed mindset in higher education**.  In higher education, the fixed mindset is often manifested in student attempts to memorize concepts and notes in order to regurgitate the information on an assessment with a focus on the score.  Students who are in the fixed mindset often fear effort as it can expose deficincies, further draining confidence (Dweck, 2006). Individuals with a fixed mindset do not want to be challenged or display effort during tasks, because if failure is encountered, the resulting feeling is one of deceased or absence of intellegence or success (Brysacz, 2017; Maneesri, 1990).  Often, students with a fixed mindset, when faced with a low assessment score, indicate disinterest in the subject or provide another excuse.  Students with the fixed mindset do not feel control over circumstances or outcomes; in this scenario, the circumstance or outcome is the score (Brysacz, 2017; Maneesri, 1990). Feelings of uncertainty and lack of control over outcomes, or when faced with problems, further encourages students to give up rather than putting in the increased effort and work needed to solve problems.

**Growth mindset in higher education.**  Students who possess the growth mindset attempt to find themes throughout courses, review mistakes, think in terms of learning, have constant curiosity, and are challenge seeking (Brysacz, 2017; Dweck, 2006).  Students displaying a growth mindset in higher education seek guidance when mistakes are made and ask questions in order to improve.  "People in a growth mindset don't just seek challenge, they thrive on it" (Dweck, 2006, p. 21).  For these individuals, "challenge and interests go hand in hand," and it is effort and drive that results in accomplishment, thus success (Dweck, 2006, p. 23).  Challenging

tasks enhance "feelings of competence and self-determination" (Maneesri, 1990, p. 2).

**Academic Risk-Taking**

Academic risk-taking is defined as, "students' selection of school achievement tasks that vary in probability of success and are accompanied by feedback or the expectation of feedback" (Clifford, 1991, pp. 276-277). For students to feel comfortable in participating in academic risk-taking, the growth mindset must be present, understanding learning as a process with uncertainty of success or failure. Most educational settings support and praise correct, errorless learning—minimizing failure; though research does not agree with such concepts (Clifford, 1988; Maneesri, 1990). Academic risk-taking "implies choice and options, or opportunities for students to make academic choices" (Clifford, 1988, p. 26). Supporting academic risk-taking can "increase the quality and quantity" (Maneesri, 1990, p. 3) of learning for students. When students are mandated to complete assignments and modules to meet a certain standard at a certain performance level, academic risk-taking is often avoided. If educators do not create a judgment-free environment where learning is considered a process of successes and failures, how are students expected to engage and improve learning to meet achievement standards? Instructors must "encourage students to share their ideas and preconceptions" (Beghetto, 2009, p. 219). Risk-taking is considered an "essential component of human motivation" and the "presence or absence of academic risk-taking opportunities may be as crucial as any other single factor" (Clifford, 1988, p. 26) in achievement and motivation. When students are allowed opportunities to participate in academic risk-taking, both interest and motivation increase and predict likely performance increases in both formative and summative evaluations (Clifford, 1988).

**Athletic Training**

Athletic trainers are allied health-care professionals with expertise in the prevention, examination, diagnosis, treatment, and rehabilitation of injuries and illnesses (National Athletic Trainers' Association, 2017). In collaboration with physicians and other healthcare professionals, athletic trainers provide a wide array of services, from emergency care to everyday maintance of injuries and illnesses. Certified athletic trainers must complete a degree in an athletic training program from an institution accredited by the Commission on Accreditation of Athletic Training Education (CAATE). At the conclusion of degree obtainment, candidates must successfully complete the Board of Certification exam (Commission on Accreditation of Athletic Training Education, 2017). Once board certified, athletic trainers are responsible for various duties in a range of environments.

In order to prepare students for real-life experiences during academic pursuits, athletic training programs in higher education must develop challenging curriculum simulated in real-life context (Monaco & Martin, 2007). Athletic training students need to be encouraged to take chances and make mistakes in order to be better prepared for the ambiguous variety of experiences encounted in the athletic training profession. Authentic learning experiences are created with controlled environments in which students can make mistakes while learning. Decisions made in the field are the difference in life or death at times, so it is increasingly important to supply a supportive envrionment in the classroom in order to encourage academic risk-taking in athletic training students (Board of Certification, 2017).

**Action Research**

Action research is "a disciplined process of inquiry conducted by and for those taking the action" (Sagor, 2000, p. 3). The primary reason for engaging in action research is to assist the

"actor in improving and/or refining his or her actions" (Sagor, 2000, p. 3). When used in the classroom, action research includes "the use of qualitative interpretive modes of inquiry and data collection by teachers" (Kemmis & McTaggart, 2005, p. 273). Using action research in the classroom allows the researcher to "develop practically, theoretically, and pedagogically over time" (Kemmis & McTaggart, 2005, p. 276). Action research is not an investigation of abstract thoughts and theory; this research is an investigation into actual environments to learn about "particular practices of particular people in particular places" (Kemmis & McTaggart, 2005, p. 277).

Action research was appropriate for the current study, because although demonstrated to improve learning outcomes, academic risk-taking and error in learning are generally avoided in classrooms, including in athletic training programs. The researcher plans to "practice, monitor and observe what happens, ask for feedback from those affected by the actions (students), and share insights" (Zuniga-Urrutia, 1992, p. 17) and outcomes with others. Educational action research is a practice-based inquiry aimed to improve instructional practices, thus improving student outcomes (Kemmis & McTaggart, 2005).

**Setting**

The setting of the current study took place in the Bachelor of Science Athletic Training Program (ATP) at a small, private, liberal arts, faith-based institution in the southeastern United States. The ATP started in the sophomore year of the student's academic career, lasting through graduation in the senior year. The study encompassed all levels of the ATP (sophomore, junior, and senior) and took place in the spring semester of 2018. In each semester, students participated in a clinical course geared toward the clinical or practical hands-on, real-life use of previously learned knowledge and information.

**Methodology**

The current study was a mixed methods convergent parallel study utilizing the action research design. Action research is commonly used when practictioners are attempting to bridge the gap between theory and practice (Sagor, 2000). Dissertations utilizing the action research design are common with practitioners and contribute to the field of study (Dawson & Kumar, 2014). The researcher utilized several instruments to investigate the modifications of instructional practices in three athletic training clinical courses in the ATP at the described university. The qualitative data were collected through the use of open-ended survey items and quantitative data were collected through Likert scale instruments. Through the use of academic risk-taking lessons and activities, the researcher hoped to investigate the impact of the facilitation of growth mindset through modifications of instructional practices in clinical courses on participant mindset and propensity for academic risk-taking.

**Significance**

Although academic risk-taking and learning from failure are proven to increase success in the classroom (Wagner, 2012), many students do not display a tendency to take academic risk; and learning is paralyzed when taking risks or failure of a task is encountered. Such students cannot see failure as a path to development and achievement; instead, failure is seen as a final destination. In order to change this view of failure in students, the growth mindset must be cultivated, fostered, and encouraged. It is important for students to believe true potential is unknown and can be stretched through application and experience. When the growth mindset is encouraged in classrooms, many previously unsuccessful students are able to flourish (Dweck, 2006).

To better prepare students for intended professions, is it imperative for educators to use

innovative methods demonstrated in research to improve student outcomes. Clifford (1990) suggested the conditions in which learning can flourish are not present in today's classrooms where error is seen as an exposure of a weakness, rather than a learning oppourtunity (Klein, Delany, Fisher, Smallwood, & Trumble, 2017). In order to truly support students, educators must realize it is possible to assist students in moving into a growth mindset (Dweck, 2006). To accomplish this task, educators must increase academic risk-taking in the classroom and support an environment in which students feel comfortable in making errors and growing from failures.

**Statement of the Problem**

Today's "educational system does not encourage risk-taking and penalizes failure" (Wagner, 2012, p. 113). Conflicting desires exist in the current educational system: provide errorless learning environments for students by supporting perfect performance and shunning error; or produce the next generation of students, adaptive and creative when the inevitability of error is encountered. Research indicates that "errorless learning methods have failed to produce the creative, self-confident scholars we had envisioned" (Clifford, 1991, p. 293), nonetheless these methods are alive and well in today's classrooms. Implementing academic risk-taking procedures into the classroom is often difficult and does not follow traditional educational practices. Error and failure are not traditionally rewarded, and students are often wary to take risks; however, students with a growth mindset enjoy and even seek challenges. This "mindset…allows people to thrive during some of the most challenging times in their life" (Dweck, 2006, p. 7).

Though ATPs may attempt to support academic risk-taking, programs are competency based on standards that must be met and conclude with an entry exam that students must pass in order to begin a career in the profession. This focus directs programs to take the more traditional

role in the classroom where error-free learning translates into the understanding that students are ready not only for the Board of Certification exam but also for the professional field. Research supports learner-centeredness in student clinical experiences as a method for preparing students for the field; nevertheless, a lack of research exists on using learner-centeredness in the classroom portion of clinical courses to better prepare for the experience (Kunkel, 2016). To truly support a learner-centered classroom, there must be a trusting environment supporting the growth mindset.

The ATP selected for the current research study followed the more traditional educational settings described. In many cases, the students showed trepidation when taking academic risks and were focused on the grade rather than the process of learning and growing. In core courses, students were introduced to new material as each course builds from the knowledge gained in previous courses. In clinical courses, students were expected to utilize skills and knowledge in a more practical manner, such as in the clinical setting and for practical course evaluations. The students were expected to use knowledge to perform tasks in real-life or simulated situations replicating the scenarios athletic trainers encounter during their professional career. Athletic trainers encounter many different and unique situations during which the ability to make decisions that involve risk are essential to provide care for patients. It is important to create an environment where students are comfortable taking risks in clinical courses and should be a focus for instructors. Supporting students in error making in controlled settings where mistakes can be used as tools for learning in less stressful and consequential situations better prepares students for the profession where such decisions can result in life or death for the patient. It is important for students to feel comfortable taking academic risks in order to grow from the learning process rather than for obtaining a certain grade in a course.

**Purpose of this Study**

The purpose of the current study was to determine the impact of facilitation of growth mindset through modification of instructional practices in athletic training clinical courses at an Institution of Higher Learning. The instructional methods were modified to support the growth mindset through encouraging academic risk-taking. A lack of research exists on academic risk-taking in higher education and the implications of introducing academic risk-taking activities into postsecondary coursework, particularly in athletic training programs.

**Research Questions**

The overarching research question the researcher sought to answer was, "What is the impact of facilitation of growth mindset through modification of instructional practices in athletic training clinical courses at a private university in the southeast?" Specifically,

1. What is the impact of implementing academic risk-taking activities on student scores on academic risk-taking and growth mindset measures?

2. What is the impact of participating in academic risk-taking activities on student perceptions of error/failure in athletic training courses?

3. What is the impact of participating in academic risk-taking activities in athletic training courses on student perceptions of preparedness in utilizing the course skills and knowledge in real-life situations?

**Definition of Terms**

**Academic failure tolerance.** The response to failure in academic settings. Failure in academic endeavors can result in "learned hopelessness" and decrease motivation to continue; or the response can be more a positive, "constructive thought process" in pursuing the endeavor even after failure occurs (Chae, Kim, & Chang, 2016, p. 25).

**Academic risk-taking.** Academic risk-taking is defined as "students' selection of school achievement tasks that vary in probability of success and are accompanied by feedback or the expectation of feedback" (Clifford, 1991, pp. 276-277).

**Facilitation of growth mindset.** Changes made to clinical courses in the modification of instructional practices that would have not occurred if not for the current study.

**Error feedback.** Feedback occurring as soon as possible after the completion of a task to ensure learning and correct future application (Clifford, 1991).

**Errorless learning.** For the context of the current study, errorless learning refers to the concept of limiting the amount of errors a student makes in the learning process; with the goal of no errors, or the student always being correct.

**Fixed mindset.** Believing qualities are fixed and out of control to be modified (Dweck, 2006).

**Growth mindset.** Believing qualities are modifiable when effort is exerted, exploring multiple strategies when not successful, and seeking help from outside resources (Dweck, 2006).

**Risk.** "Possibility of loss or injury: peril; someone or something that creates or suggests a hazard" ("Risk," 2017, "Definitions").

**Organization**

Chapter 1 included an introduction and a brief overview of growth and fixed mindsets and the role of academic risk-taking in developing the growth mindset. The athletic training profession and educational program were explained in order to provide context for why the growth mindset is important in the field. The current study methodology and support for selecting the methodology as the most appropriate were presented. The setting, along with the significance and statement of the problem, purpose of the study, and research questions were

stated.

       Chapter 2 includes a thorough literature review; the theoretical frameworks utilized are presented along with examples and recommendations for use.  In addition, a more detailed examination of academic risk-taking is provided, including academic risk-taking in children and adults.  Current and suggested educational practices in academic risk-taking are discussed and instrumentation used in measuring academic risk-taking is explained.  Athletic training educational preparation as well as the structure of athletic training programs are explained, and growth mindset in medical fields is discussed in greater detail with suggested interventions for academic programs.

       Chapter 3 discusses the methodology used in the current study.  An argument for the methodology and design is presented, and instruments used are discussed in detail.

       Chapter 4 reports the data, and Chapter 5 discusses the findings and implications.

**Chapter 2: Literature Review**

"As soon as children are able to evaluate themselves, some of them become afraid of challenges" (Dweck, 2006, p. 16), while others relish in the process of learning new ways to investigate the world. Mindsets are malleable and can be different in various contexts (Dweck, 2006). Students will undoubtedly face challenges throughout the course of academic journeys; educators can either help or hinder the process (Clifford, 1990). Praise of errorless success (such as a test score) encourages students to take the conservative route and minimize academic risk-taking to preserve self-esteem, resulting in a fixed mindset (Clifford, Chou, Mao, Yun Lan, & Kuo, 1989). In order to encourage students to develop a growth mindset, there needs to be a shift in attention to the process, rather than the product, of learning (Dweck, 2006). This chapter includes a description of the theorectical frameworks associated with these ideas: Clifford's (1984) theory on constructive failure and Dweck's (2006) theory on growth mindset. Academic risk-taking in children and adults, factors of academic risk-taking, academic risk-taking and current instructional theory in the classroom, and growth mindset's role in academic risk-taking are also discussed in this chapter.

**Theory on Constructive Failure**

Constructive failure is the theory that a positive response after failure is displayed, a response that results in motivation to continue effort, rather than termination of effort, in achieving a task. Clifford (1984) defined constructive failure as a "performance-goal ratio of less than one which produces effects such as increased persistence, task interest, task preference, task initiation, task resumption… and an eventual—though not necessarily immediate—increase in task performances" (p. 109). This definition was based upon the thought that one cannot remove or avoid failure in attainment of academic goals. Optimal challenge or "a good match of

skill and challenge" (Clifford, 1984, p. 117) must be present in order for the constructive results of failure to be displayed. When optimal challenge is met, more productive responses to failure will be utilized (Clifford, 1984). With optimal challenge, the outcome is not contributed to dumb luck; rather, the response is positive in motivating the student to continue in the effort (Grimes, 1981). Clifford (1984) also postulated the "constructive effects of failure will increase as the goal becomes…activity inherent" (p. 117).

**Activity inherent goals.** Activity inherent goals are those such as "skill improvement, exercise of skill, enjoyment of environment, and mastery" (Clifford, 1984, p. 117). Constructive thoughts and actions after failure are important as these responses are what motivate a student to continue in the effort and further support the student in building confidence in personal control over the task (Grimes, 1981). Clifford (1984) also noted, "the more meaningful the goal, the more likely it is that failure will result in constructive effects" (p. 117). The theory on constructive failure also requires the task to be self-initiated and guided by strategies inherent to the task at hand (Clifford, 1984).

**Intellectual development.** Intellectual development, or academic achievement, is dependent upon a number of factors. Clifford, Chou, et al. (1989) discovered that in order to achieve maximal intellectual development, or academic achievement, one must be optimally challenged and supported through instruction with practice, examples, prompt corrective feedback, and cues signaling the expected level of performance. When failure is met with these supports present, responses become constructive and can lead to increases in academic achievement (Kim & Clifford, 1988).

**Five components of theory of constructive failure.** Clifford (1984) identified five components of constructive failure that can influence whether the resulting actions of failure will

be detrimental or constructive. These components are identified as goal, goal awareness, performance, assessment and evaluation, and learned helplessness. Each of the five components are detailed in the following sections.

*Goal.* The three factors of the goal component are optimum challenge, activity inherent goals, and meaningful goals. Each component contributes to whether results during failure will be constructive or negative. Constructive effects of failure are postulated to increase when optimal challenge exists (Clifford, 1984). The idea that the individual possesses a sufficient degree of the skill required to match the challenge has been found to be a probability of .50 of the individual successfully completing the task (Clifford, 1984). This probability is found throughout academic risk-taking literature as a necessary condition of constructive failure (Clifford, 1988; Clifford & Chou, 1991; Clifford, Yun Lan, & Chang Chou, 1989; Kim & Clifford, 1988). When the goal is activity inherent, or the task is a necessary step in accomplishing the activity at hand, the constructive responses are predicted to increase (Clifford, 1984). The last factor of the goal component is the meaningfulness of the goal. The more meaningful the goal to the individual, the more likely the effects of failure will result in constructiveness (Clifford, 1984).

*Goal awareness.* The level and clarity of goal awareness is the second component of the theory of constructive failure. The clearer the understanding of the goal and how it can be successfully achieved, the better chances, if failure occurs, it will result in more constructive actions (Clifford, 1984).

*Performance.* When activities are self-initiated and the individual possesses coping strategies inherent to the activity, the resulting failure is predicted to be more constructive than detrimental (Clifford, 1984).

***Assessment and evaluation.*** The final components of Clifford's (1984) constructive failure theory are assessment and evaluation. When the assessment and evaluation are clear and concise, providing ample detail on how the assessment and evaluation accurately reflect the activity, constructive failure is predicted to increase (Clifford, 1984).

***Learned helplessness.*** Learned helplessness is a negative and nonconstructive response to failure. When a student experiences failure, it can result in continued effort to achieve the failed task or discontinued effort and abandoning the task. Learned helplessness is displayed when a student chooses to discontinue effort to solve a problem due to feeling a lack of control in the situation, feeling no amount of effort exerted will influence the outcome (Grimes, 1981). When subjects are exposed to an uncontrollable environment and the resulting belief is there is no ability to control the situation through effort and continued work, learned helplessness can be developed (Wortman & Brehm, 1975). Individuals who experience learned helplessness believe that regardless of the effort exerted, action has no relationship to outcome; and they will stop exerting the effort needed to successfully complete the task (Wortman & Brehm, 1975). Learned helplessness in the classroom may be displayed when students either do not attempt to solve a problem or cease in effort in solving a problem. Learned helplessness can be the result of student past experiences with an unsolvable problem or student beliefs in lack of ability to solve the problem (Mikulincer, 1988). The extent to which students believe their performance is either self-controlled or controlled by their environment will determine the amount of effort they expend on a task (Mikulincer, 1988). If a student feels failure to complete a task successfully was due to poor performance, it is more likely to result in persistence in the attempt, as opposed to a student who believes failure is due to an external factor which there is no control, such as level of intelligence (Mikulincer, 1988).

**Theory on Growth Mindset**

Growth mindset theory is grounded in the belief that one can continually develop one's qualities through effort, experience, and application (Dweck, 2006). Possessing a growth mindset means the individual believes the outcome is within control of achieving (Grimes, 1981). Students who display growth mindset are those students who are "ready to take the risks, confront the challenges, and keep working at them" (Dweck, 2006, p. 8) in order to achieve. The "transformative power of effort, the power of effort to change… ability and to change … a person" (Dweck, 2006, p. 42) allows students to stretch themselves to learn something new.

The infographic in Figure 1 displays the fixed and growth mindsets of Dweck's (2006) research.
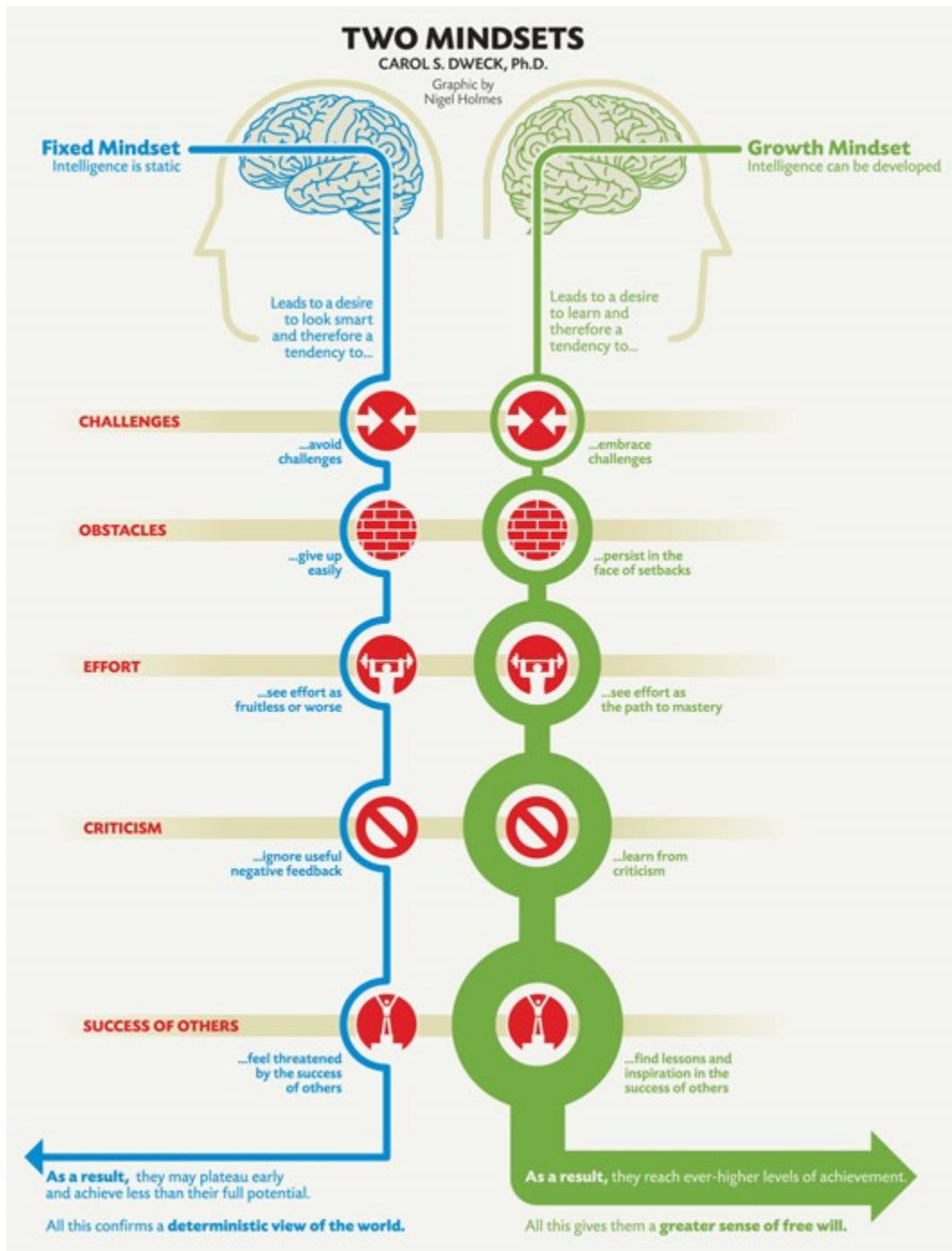


*Figure 1.* Fixed and Growth Mindsets Infographic by Nigel Holmes. From *Mindset: The New Psychology of Success* (p. 263) by C. S. Dweck, 2006, New York: NY. Copyright 2005 by Nigel Holmes. Reprinted with permission (Appendix A).

Multiple conceptual frameworks, in addition to that in Figure 1, were utilized in exploring the academic research on mindset in an "an attempt to tease out the factors and processes that may influence an adult's decision to engage in academic risk-taking behavior" (Robinson, 2012, p. i). These include more well-known frameworks such as Schunk's (1989) self-efficacy and achievement, Clifford's (1984) constructive failure, and Dweck's (2006) growth mindset; along with combined frameworks which were found in Robinson's (2012) and Auten's (2013) research. With the focus of the current study, both Clifford's (1984) and Dweck's (2006) conceptual frameworks were appropriate.

**Fixed mindset.** In contrast, fixed mindset is the belief one is born with a set of qualities that cannot be changed (Dweck, 2006). Students displaying the fixed mindset do not believe in control over ability to complete a task; and rather than working to achieve the task, avoidance is displayed (Grimes, 1981). Fixed mindsets stand in the way of growth and students see effort negatively (Dweck, 2006). Students with a fixed mindset have been validated in this mindset through feedback focused on natural intelligence and achievement, not on the process and effort of learning; therefore, when problems requiring effort are encounted, avoidance is displayed, as effort may expose an inadequacy. Students in a fixed mindset believe intelligence and success are predetermined; and if success is not achieved, the ability to complete the task is not unobtainable (Grimes, 1981). Unfortunately, children are exposed to this fixed mindset as soon as evaluation of the self is developed; and it is reinforced with parental praise of end results by communication of the child being smart, instead of effort in the learning process (Dweck, 2006). Fortunately, mindsets can be changed; therefore, the ability exists to move students from a fixed to a grouth mindset (Dweck, 2006).

**Instruments measuring growth mindset characteristcs.** A growth mindset is defined as the belief intelligence is not permanently fixed and can be improved with effort and persistance, rather than a fixed trait (Dweck, 2006). Measures often utilized simultaneously to investigate individuals' ideas about intelligence, confidence, and thoughts about learning goals versus performance goals include Dweck's (2000) Theories of Intelligence Scale—Self Form, the Confidence in One's Intelligence Measure, the Task-choice Goal Measure, and the Questionnaire Goal-Choice Items.

Dweck's (2000) Theories of Intelligence Scale—Self form for adults (Appendix B) is an eight question measure utilizing a 6-point Likert scale (strongly agree to strongly disagree) and can be found throughout research such as Robinson (2012) and Brysacz (2017) as a source of data on the mindset of subjects, whether it be a growth or fixed mindset. The Confidence In One's Intelligence Measure (Appendix C) is a three question instrument; students select one of two sentences that is most true for them and on the corresponding sliding scale mark how true the statement is from very true to me to sort of true for me. This instrument was used to "examine the role of confidence in relation to implicit theories" (Dweck, 2000, p. 181). The two goal measures, The Task-choice Goal Measure (Appendix D) and Questionnaire Goal Choice Items (Appendix E), are tools pitting performance and learning goals against each other to determine individual propensity to choose harder tasks that stretch their knowledge or easier tasks that support more superficial traits such as self-image and looking smart (Dweck, 2000). The Task-choice Goal Measure is a one sentence statement where students select from four choices to determine preference in an effort to achieve a task resulting in improved learning or performance. The Questionnaire Goal Choice Items is a four question instrument; Questions 1-3 are 6-point Likert scale questions, and the fourth is a forced choice item where an answer is

selected to complete the following statement: If I had to choose between getting a good grade and being challenged I would choose…either good grade or being challenged (Dweck, 2000).

**Academic Risk-Taking**

Academic risk-taking can also be referred to as Intellectual Risk-Taking (IRT) and is different than risk-taking behaviors. Risk is often used with a negative connotation, as in someone or something that comes with a "possibility of injury" ("Risk," 2017, "Definitions"). In general, behaviors deemed as risk-taking are those in which there is a negative or detrimental outcome, such as drug and alcohol use or unprotected sex; however, academic risk-taking is defined as, "engaging in adaptive learning behaviors (sharing tentative ideas, asking questions, attempting to do and learn new things)" (Beghetto, 2009, p. 210) that can result in mistakes and errors but is focused on the process of learning and the continual development of intelligence. Academic risk-taking "specifically involves students assessing the known and unknown outcomes of a learning activity and making choices about their involvement based on possible benefits and consequences" (Robinson, 2012, p. 1).

As previously noted, in order for academic risk-taking to stretch student learning, students must be challenged at an optimal level, or a task with a .50 probability of success (Beghetto, 2009; Clifford, 1984; Clifford & Chou, 1991; Clifford, Chou, et al., 1989; Clifford, Yun Lan, et al., 1989; Harter, 1978; House, 2003; Kim & Clifford, 1988; Maneesri, 1990). The task must be "slightly above one's skill level"; and when this level is reached, there are "beneficial cognitive and motivational effects" (Clifford & Chou, 1991, p. 499). Some students see risk as a challenging opportunity, while others see it as an opportunity to fail. Individuals who take an active role in academic risk-taking are willing to participate in the learning process despite the probability of making a mistake (Anonymous, 2011); the decision to take the risk of

failure displays a growth mindset. For others, the probability is too high; failure is feared due to the possibility of having ideas dismissed or being ridiculed for participating in academic risk-taking activities. These individuals display a fixed mindset where the belief of the ability to grow and learn above an already established standard is absent (Dweck, 2006).

Academic risk-taking is multifaceted; not only must optimal challenge be met, but interest in the activity, self-efficacy, and goals also enfluence one's desire to participate (Anonymous, 2011; Pierre, 2015). Environmental factors must also be taken into consideration; the perception the student has of the instructor's support will determine the amount of academic risk-taking or avoidance (Anonymous, 2011).

Likert scales and multiple-choice instruments have been the main measurements used in determining the amount of academic risk-taking (Clifford, 1991). When utilizing multiple-choice instruments, usually in math or vocabulary, students are instructed to "choose and work 15-25% of the items…the two primary variables derived from these achievement instruments and assumed to reflect academic risk-taking are difficulty…and accuracy" (Clifford, 1991, p. 278).

**Academic risk-taking in children**. The Academic Risk-Taking (ART) instrument is the most commonly used instrument with children. In conjunction with the ART, the School Failure Tolerance (SFT) scale is also used to assess children's tolerance to failure in academics (Clifford, Chou, et al., 1989); however, there are conflicting findings on the ability of the SFT to predict high academic risk-taking scores (Clifford, Yun Lan, et al., 1989).

Academic risk-taking is most commonly measured with play activities or games or is based on certain subjects (Clifford, 1988; Clifford & Chou, 1991; Maneesri, 1990). When "cognitive tasks are used, they are often novel and nonrepresentative of school activities"

(Clifford, 1991, p. 274), making conclusions hard to generalize to both school activities and the adult population. Studies varied and did not agree on the role sex played, if any, in academic risk-taking; but many found both academic risk-taking and school failure tolerance steadily decreased with grade (Clifford, 1990; Clifford, Chou, et al., 1989; Clifford, Yun Lan, et al., 1989). Familiarity of a task may decrease the value of school failure tolerance as a factor in predicting academic risk-taking (Clifford, Yun Lan, et al., 1989). A student who is familiar with a task may not display academic risk-taking based on the outcomes of past experiences no matter tolerance to failure.

**Academic risk-taking in adults.** Adult experiences with "reinforcement of error-free academic performance; their greater awareness of the detrimental consequences of academic failure; and their increased tendency to view ability as a stable explanation" (Clifford, 1991, p. 283) will determine the level of academic risk-taking in the classroom. In addition, adults considered the age of the instructors and shared decision-making when determining academic risk-taking behaviors (Pierre, 2015). Research noted that older teachers were more confident practicing decision-making skills and therefore were more comfortable with taking academic risks (Pierre, 2015). Adult students with older teachers may then be more comfortable with academic risk-taking.

In determining the propensity for adults to engage in academic risk-taking, Clifford (1991) took into consideration goal orientation, feedback on academic risk-taking, learning, and task liking. Robinson's (2012) study using the ART model found that adults considered perception of potential loss and risk propensity in determining academic risk-taking; congruent to Pierre's (2015) findings in a similar study involving online adult education where adults with high-risk propensity saw academic risk-taking as a positive part of the learning process when met

with optimal challenge.

     **Feedback.**  In Clifford's (1991) study on preservice teachers, a multiple-choice vocabulary test with variable payoffs was administered.  Three conditions were utilized: learning with feedback, testing with feedback, and testing without feedback; a summary test without feedback was administered last (Clifford, 1991).  Clifford (1991) found,

> Subjects who received feedback chose more difficult items and achieved the same near-moderate level of accuracy (about 60%) as did subjects who received no feedback, suggesting that increased risk-taking may have been accompanied by increased effort expenditure and concentration.  Subjects in the feedback condition also performed nearly 50% better on the moderately difficult and difficult items contained in the summary test. The "future use" of feedback (i.e. the opportunity to use feedback from one task to enhance performance on a subsequent task) coupled with the variable payoffs was thought to have prompted subjects to choose relatively difficult items and process feedback in a manner that ensured learning and enhanced performance on the summary test.  (p. 284)

Clifford (1991) concluded that, in some situations, adults were willing to take moderate to high academic risk and seemed to enjoy it; risk was inherent to learning; and self-assessment motives (motives associated with improving knowledge) were aroused more than self-enhancement (motives associated with improving superficial charateristics such as looking smart) when completing the activities.

     In another study with adult educational psychology students, Maneesri (1990) offered students the opportunity to work practice exams in preparation for the midterm.  Subjects were given four risk-taking quizzes, each question contained 12 unique multiple-choice items: four

easy items, four moderately difficult items, and four difficult items valued at 1, 2, and 3 points or 1, 5, or 10 points presented with or without feedback (Maneesri, 1990). Subjects were informed of a summary test, but only the future use-subjected participants were told that the content of the quizzes was similar to the content of the summary test. Maneesri (1990) found academic risk-taking and scores on the summary test were increased with the feedback group.

Overall, the value of feedback and future use of information may determine the amount of academic risk-taking adults display (Clifford, 1991); however, comprehensive information on adult learners in higher education and propensity to take academic risks is lacking (Pierre, 2015). Adult learners can be "diverse in age, race, class, gender, socio-economic status, and ability"; providing an environment in which learning experiences "foster creativity, innovation, critical reflection, and most importantly, taking risks to create positive outcomes" (Pierre, 2015, p. 1) is important in stretching the learning processes of the learner. Much of the literature on academic risk-taking is centered on games or play settings, therefore not providing much data in the way of classroom learning pursuits (Pierre, 2015).

**Factors of academic risk-taking.** There are many factors associated with high levels of academic risk-taking, defined as decision-making when probabilities are unknown (Clifford, 1991). In risk-taking, a ratio of probability and value can be calculated, and students are more likely to take risks when the goal (value or payoff) and probability meet certain criteria. If there is too little or too high probability that the goal will be reached, academic risk-taking will be decreased. Studies on academic risk-taking overwhelmingly support a 50% (or moderate) probability (Badger, 2009; Clifford, 1984, 1988, 1990, 1991; Clifford & Chou, 1991; Clifford, Chou, et al., 1989; Clifford, Yun Lan, et al., 1989; Kim & Clifford, 1988). Motivation also plays a role; when emphasis is placed on the end product of a task rather than improving the learning

process, academic risk-taking is decreased. Students more worried about a reputation of looking smart are less likely to take a risk on a task if it could result in looking less intelligent. In contrast, students dedicated to improving knowledge, not just appearing smart, are more likely to risk failure in order to improve knowledge base (Clifford & Chou, 1991).

**Payoffs.** Another factor in academic risk-taking is the use of payoffs. When students are allowed to decide to work a difficult activity worth more points, it is more likely that academic risk-taking will be displayed. In contrast, when payoffs are fixed and all activities are worth the same points, students are less likely to attempt the more difficult activities. The same results are found in studies on adults and monetary risks (Ettenson & Coughlin, 1982). When difficulty and payoff for completing the difficult task increase, so does academic risk-taking.

**Academic risk-taking in the classroom.** "Growth is risky—and it needs to be" (Jones, 2012, p. 1). Clifford (1988) asked the essential question, to "what extent do schools allow or invite" (p. 26) academic risk-taking. The current classroom environment does not seem to be one where academic risk-taking is fostered to support the growth mindset. Reward is often given for conforming to standards and for perfect scores rather than for bold behaviors that stretch limits (Ridenour & Twale, 2005). Clifford, Yun Lan, et al. (1989) stated, "there is a need to identify factors that will enhance the value of academic challenge and reduce the value of high levels of absolute success" (p. 336). Clifford (1990) described what some call educational suicide, or students who have abandoned furthering education due to motivation. This concept is not exclusive to one sex, race, ethnicity, or ability level; but a "systematic failure affecting the most gifted and knowledgable as well as the disadvantaged" (Clifford, 1990, p. 22). Supporting growth mindsets that "encourage students to reach beyond their intellecutal grasp and allow them the privillage of learning from their mistakes" (Clifford, 1990, p. 23) to stretch the learning

processes should be a minimal requirement in the classroom; however, one must be willing to risk failure in order to experience the growth mindset. When the "external constraints such as surveillance, evaluation by others, deadlines, threats, bribes and rewards are accentuated" (Clifford, 1990, p. 23), more valuable qualities such as intrinsic motivation, determination, persistence, and personal control are lessened. When students are supported and taught strategies in problem-solving and critical thinking, more willinginess to participate in academic risk-taking to further stretch learning results.

The educational system is "charged with perserving and transferring our knowledge to the next generation" (Wagner, 2012, p. 141). The current education system does not provide a supportive culture in which academic risk-taking can flourish; rather, students are often ridiculed and made to depend on the need for "permission to pursue their passion" (Wagner, 2012, p. 111). When educators are acting as content deliverers and depending on ability of the student to use and apply content, it acts as a disservice, not only to students but to educators as well. We need students to create "new knowledge to solve new problems" (Wagner, 2012, p. 142), not get trapped in the web of rote memorization and regurgitation.

Situational factors such as "classroom environment, teaching styles, nature of feedback, reinforcement and punishment practices" (Clifford, 1988, p. 26) can be modified to support more academic risk-taking in the classroom. The possible outcomes of such modifications are vast, including motivation, school intrest, attendance, and participation just to name a few (Clifford, 1988). Increased acheivement scores on standardized testing is also predicted by Clifford (1988).

**Instruments measuring academic risk-taking characteristics.** In most adolescent academic settings, academic risk-taking is performed using game-like activities or multiple-

choice questions from math, spelling, and vocabulary content (Clifford & Chou, 1991; Clifford, Yun Lan, et al., 1989). The ART measure consists of six pages of multiple-choice problems, based on the Iowa Test of Basics Skills (Clifford, Yun Lan, et al., 1989). The problems are listed starting at the second-grade level and moving upward (Clifford, Yun Lan, et al., 1989). Both fixed and variable payoffs can be used by either assigning increasing points awarded with increase difficulty or scoring of all questions equally (Clifford, 1991; Clifford, Yun Lan, et al., 1989). The measure determines accuracy, difficulty, and variable payoff scores for each subject area (Clifford, Yun Lan, et al., 1989).

The ART scale used for adults is also a multiple-choice instrument increasing in difficulty though only comprising of three levels in increasing difficulty in vocabulary and educational psychology and six levels for mathematics (Clifford, 1991). Since the current instruments used were developed for specific subjects, they are not generalizable. The instrument used more commonly to assess academic risk-taking is the Propensity for Academic Risk-Taking (PART) survey (Robinson, 2012). Permission was granted to utilize the PART survey and can be found with copies of the instrument in Appendix F.

**The PART survey.** Developed from various risk surveys to assess individuals' general academic risk propensity, the PART survey has both a quantitative and qualitative portion (Robinson, 2012). The quantitative portion consists of 12 activities students could partake in during class that could be viewed as risky, such as "Sharing my opinions in class, even if no one else agrees with my point-of-view" (Robinson, 2012, p. 50). The PART survey "underwent expert review for appropriateness of content and readability" (Robinson, 2012, p. 50). A pilot study was also completed to assess content validity and internal reliability of scores (Robinson, 2012). The 12 activity questions are answered using a 4-point Likert scale, 1 (very

uncomfortable) to 4 (very comfortable).

The qualitative portion consists of four open-ended questions requesting students to "describe their feelings about participating in a hypothetical course where the outcomes were uncertain" (Robinson, 2012, p. 51).

**School Failure Tolerance**

Students who respond positively after academic error making and persevere are known to have a high failure tolerance; considered School Failure Tolerance (SFT) and measured using the SFT scale for children and Academic Failure Tolerance (AFT) for adults. Both consist of a 36-item Likert scale (agree-disagree) yielding a composite score along with subset scores of failure feelings, failure action, and preferred difficulty (Clifford, Yun Lan, et al., 1989). Though SFT has not been found to be a predictor of academic risk-taking in some studies (Clifford, Yun Lan, et al., 1989), there is some level of tolerance for failure with academic risk-taking because of the chance for failure. School failure tolerance is "likely to influence one's level of risk-taking as well as one's response to failure" (Clifford, 1988, p. 15). Moderate risk-taking with a 50% probability is not only a condition in academic risk-taking but also a condition in school failure tolerance; research concluded it was one of the most important factors (Clifford, Chou, et al., 1989). Even with high SFT, if the risk-taking does not meet the moderate risk-taking threshold, the level of academic risk-taking is low (Clifford, Chou, et al., 1989).

**Current instructional practices.** The most common classroom environment is focused on errorless learning and excellent performance. With such a focus, the supportive environment needed for academic risk-taking is lacking. When there is an emphasis on performance goals rather than learning goals, students are not awarded for improvement or progress but for perfection and attainment. Academic risk-taking involves the possibility of error; and when

students understand error will not receive the desired grade or score, less risk is taken to avoid a poor score. Current classrooms involve instructor-directed activities rather than self-directed. Independent performance has been proven to increase self-efficacy, and students with high self-efficacy are more likely to challenge themselves independently to improve (Bandura, 1977). Even with all the evidence, classrooms are still structured settings with "minimal criteria and standards in hopes of insuring success for all students" (Clifford, 1990, p. 23). Instructors are more inclined to "reduce task difficulty, overlook errors, de-emphasize failed attempts, ignore faulty performances, display perfect papers, minimize testing, and reward error free performances" (Clifford, 1990, p. 23). Sharma (2015) indicated that a need exists to change the environment of the current classroom: "to learn and grow people must take risks, but most people will not take risks in an emotionally unsafe environment" (p. 290). Ponticell (2003) noted the traditional school atmosphere can be highly resistive to risk-taking and change due to the constraints of standardized tests, competency-based curriculum, and other forms of accountability teachers must consider.

**Athletic Trainers in the Workforce**

Athletic trainers are recognized healthcare professionals responsible for injury and illness prevention, wellness promotion and education, emergent care, examination and clinical diagnoses, therapeutic intervention, and rehabilitation of injuries and medical conditions in a variety of professional settings (Board of Certification, 2017). Employment can encompass a vast range of settings including academics, youth and collegiate sports, military, and performing arts. Due to the variety of work settings and responsibilities of athletic trainers, it is imperative for athletic training programs to prepare confident and competent individuals comfortable in decision-making (National Athletic Trainers' Association, 2017).

**Athletic Training Preparation**

The CAATE sets the minimum professional standards with which athletic training programs must maintain compliance in order to obtain and maintain accreditation (Commission on Accreditation of Athletic Training Education, 2017) . Athletic training programs are competency based, where students must demonstrate competency of knowledge and skills through both a didactic and clinical education component (Commission on Accreditation of Athletic Training Education, 2017). The didactic component of athletic training education resembles the traditional university setting where students gain knowledge on the athletic training practice domains of injury and illness prevention and wellness promotion; examination, assessment, and diagnosis; immediate and emergency care; therapeutic intervention; and health-care administration and professional responsibilities (Board of Certification, 2017). The didactic component is often more instructor centered (Heinerichs, Vela, & Drouin, 2013).

The clinical education component of athletic training programs places students in clinical/employment settings where utilization of athletic training skills under supervision can be performed to prepare students to practice autonomously (Board of Certification, 2017). As one of the most important and beneficial experiences, the clinical education component of athletic training programs is developed to further prepare students to become entry-level athletic trainers (Heinerichs et al., 2013). Though the development of the clinical component is held to standards and must incorporate a variety of settings and experiences for the student, the individual programs have autonomy in developing a program to meet the CAATE standards. During the clinical education courses, students are placed in real-life situations with supervised support to translate didactic education and skills into practice. The clinical education component is intended to support students in utilizing previously obtained knowledge to support clinical

decision-making and should be more student centered (Heinerichs et al., 2013).  For clinical education to appropriately prepare students, it must expose students to a variety of situations and provide an environment where making mistakes and learning from error are encouraged. Decisions in the field involve emergency procedures and care, so preparing students for important decision-making in real-life situations is imperative (National Athletic Trainers' Association, 2017).

Athletic training programs are competency based, and courses are sequenced throughout semesters.  Students must demonstrate competency prior to advancing to the next semester of the program.  Multiple opportunities are provided for students to demonstrate competency; but if competency is not demonstrated, students will have to retake the course or discontinue participation in the program.  Instruction is based on the athletic training practice domains to prepare students for the Board of Certification exam (Board of Certification, 2017).  Due to the structure of competency-based programs, a teacher-centered approach where students are passive recipients of information is a common occurrence, especially during the didactic instruction (Kunkel, 2016).  The clinical education component of programs is more student centered, allowing students to practice clinical reasoning and decision-making; however, the time students spend in the clinical education component is much less than the didactic (Heinerichs et al., 2013).  The ultimate goal of athletic training programs is to prepare students for entry into the career as competent health-care providers, and programs are given a large amount of autonomy to do so (Board of Certification, 2017).  A lack of research exists on the impact of incorporating student-centered activities embedded with academic risk-taking in the clinical course on supporting the growth mindset and therefore better preparing students for the clinical setting.

**Growth Mindset in Allied Health Care Fields**

Stressful situations are common in healthcare fields, and the reaction to stress can be beneficial by spurring initiative taking of individuals to "acquire the necessary skills and self-efficacy" (Crum, 2012, p. 8) to meet the demands of stressful situations. "In the high stakes environment of medicine, errors can be catastrophic, not only for the patient but for doctors themselves" (Klein et al., 2017, p. 771). Stress and anxiety can be a motivating factor for medical professionals to be proactive in their clinical problem-solving (Crum, 2012). Cause for such reactions to stress and stressful situations were attributed to various psychological factors including mindset (Crum, 2012; Dweck, 2006). Crum (2012) adapted her definition of mindset from Dweck (2006) as, "a mental frame of lens that selectively organizes and encodes information thereby orienting an individual towards a unique way of understanding an experience and guiding one toward corresponding actions and responses" (p. 20). Individuals displaying a growth mindset were more open to learning from error through constructive feedback (Jegathesan, Vitberg, & Pusic, 2016). For individuals with a growth mindset, "fear of performing poorly in front of colleagues and patients, when stakes can be high and situations life threatening" (Jegathesan et al., 2016, p. 2) "represents an opportunity for development and improvement" (Klein et al., 2017, p. 771). Conversely, fixed mindset in the healthcare field can result in avoiding "new challenges that might lead to failure or to being assessed as incompetent" (Klein et al., 2017, p. 771). Those who possess a fixed mindset recalled past experiences where parents and teachers "regularly praised them for their intelligence and abilities," discouraging motivation "to gain competence in an area where they have experienced difficulty, and accept new challenges in order to improve their skill" (Klein et al., 2017, p. 771) for fear of exposing a deficiency. "Throughout their training, physicians may receive threats to their perception of

their innate abilities and clinical reasoning, especially when making and/or admitting to medical errors" (Jegathesan et al., 2016, p. 2); and differing mindsets result in different reactions. "As medical students transition to become trainee doctors, they must confront the potential for making medical errors" (Klein et al., 2017, p. 771). These reactions to error, fluctuating due to differing mindsets, "could have educational implications in clinical practice, as a subsequent change in mindset via targeted training could be used to promote feedback in medical education and promote improvement in clinical practice" (Jegathesan et al., 2016, p. 2).

**Current research.** Mindset will determine what coping strategies individuals utilize when presented with a problem. Crum (2012) derived the following definition of coping as, "the process of appraising threat and mobilizing cognitive and behavioral resources to combat stress" (p. 13). The sense of control individuals experience over tasks, directly affecting growth mindset, is one of the main factors in determining actions when coping in stressful situations. Specifically, problem-focused coping, where the individual focuses coping on altering the situation, has been found to be the most adaptive (Crum, 2012). Klein et al. (2017) revealed, "young doctors can feel a loss of identity and severe lack of confidence in the aftermath of an error" and young doctors with a fixed mindset (lack of control) will "see the error as indicative of a permanent deficiency" (p. 772) rather than part of the learning process.

Current research supports educational interventions geared at informing and developing mindsets. Specifically, Jegathesan et al. (2016) reported, "adolescents of the fixed mindset were taught the growth mindset and were able to significantly improve test scores despite negative outcomes or feedback, thereby maximizing their potential" (p. 4). In the study conducted by Jegathesan et al. (2016) on medical error reporting between physicians with fixed and growth mindsets, the researchers "did not find a correlation of mindset with the rate of reporting medical

errors" but stated their findings are "far from conclusive"; and future research should be conducted to evaluate "whether variability in mindset affects a clinician's response to error or other feedback" (p. 5).

**Suggested interventions.** Jegathesan et al. (2016) discovered variation in mindset of their physicians and trainees, and suggested these findings may have "educational implications as mindset training, and exploration of the benefits of each mindset can be used to maximize potential and promote lifelong learning with integration of feedback" (p. 5). Providing adequate feedback in an instructional environment where error is seen as an opportunity for professional growth and improvement is reiterated throughout the research to develop growth mindset (Klein et al., 2017). Feedback from student performance "should focus on process as much as possible, pointing out the efforts and behaviors that led to positive outcomes and those that did not, with specific recommendations for the actions that can be taken to make improvement"; specific praise should be awarded for "learning that students exhibit as a result of a mistake" (Klein et al., 2017, p. 773). Research indicated exercises in which students learned from mistakes did not have to involve direct contact with patients; exercises took place through the use of "paper-based exercises, collegial discussions, and simulation-based learning activities" (Eva, 2009, p. 79). "Little attention, however, has focused on how medical training can prepare doctors for the inevitability of error" and "the case has been made for error management training in which students are encouraged to experience error in safe settings" (Klein et al., 2017, p. 771). Interventions were provided through the use of mindset lessons; however, number of lessons required was not conclusive and varied from as little as one to a few throughout the course (Jegathesan et al., 2016). Klein et al. (2017) suggested in their review that even simple reminders helped students obtain new information and decision-making; thus, "peppering the

curriculum with occasional referrals to growth mindset thinking can help students retain their learning and promote more habitual growth mindset responses even when they are challenged by a mistake or setback" (pp. 772-773).  Klein et al. noted,

> key components of the training seem to be: 1) participants are first exposed to scientific information on neuroplasticity: that the brain is "like a muscle" and greater learning, experience and practice leads to the development of denser networks of neurons in the brain; 2) participants write about a personal example of learning and getting smarter; and 3) participants are asked to write a letter to a future student who might be struggling in school.  (p. 772)

Interventions including professionals sharing struggles and responses to error further support the growth mindset in students (Eva, 2009; Klein et al., 2017).  Error is a necessary evil in the learning process, and students should have plentiful opportunities to make errors in diagnostic reasoning and learn from these errors (Eva, 2009).  Concluding with recommendations from both Klein et al. (2017) and Eva (2009), which included further investigation into specific interventions that were best suited for medical educational settings, it was noted research in risk-taking in medical fields was lacking.  The researcher viewed this gap in research as an opportunity to examine intervention and practices to assist clinicians in the development and maintenance of a growth mindset.

Chapter 2 presented the research supporting development of the growth mindset in education (Dweck, 2006).  Incorporating academic risk-taking activities, creating an environment where students are comfortable making decisions when failure is present, and focusing on the learning process where instructors are supporting the growth mindset were discussed.  Chapter 3 explains the research-supported methods and designs used in the current

study, details how growth mindset and academic risk-taking interventions were incorporated in

the clinical courses, and details the data collection and analysis processes.

**Chapter 3: Methodology**

Chapter 3 describes the methods used to investigate research questions related to this study, the research method, the study design, setting and participants, and instruments.

The purpose of this study was to examine the impact of facilitation of growth mindset, propensity for academic risk-taking, and perceptions of the interventions in an athletic training program at an institution of higher education. The facilitation of growth mindset included incorporating opportunities for students to take academic risks in a supportive environment where academic risk-taking and error were encouraged rather than avoided. The overarching research question the researcher sought to answer was, "What is the impact of facilitation of growth mindset through modifications of instructional practices in athletic training clinical courses at a private university in the southeast?" Specifically,

1. What is the impact of implementing academic risk-taking activities on student scores on academic risk-taking and growth mindset measures?

2. What is the impact of participating in academic risk-taking activities on student perceptions of error/failure in athletic training courses?

3. What is the impact of participating in academic risk-taking activities in athletic training courses on student perceptions of preparedness in utilizing the course skills and knowledge in real-life situations?

**Role of the Researcher**

The role of the researcher was to create the design of the study; recruit potential participants; and collect, analyze, and report the data. The researcher also acted as an instructor of two of the three courses included in the study. Such participation can be considered a limitation; but in action research, participation by the researcher is a common occurrence

(Zuniga-Urrutia, 1992). Action research dissertations are also referred to as dissertations in practice and are used to provide information to be generalized in specific fields; therefore, the researcher is often involved in these types of dissertations (Dawson & Kumar, 2014).

**Research Design**

    **Action research.** Action research is used to address the gap between theory and practice and to apply research to real-life settings (Sagor, 2000; Somekh, 2006; Zuniga-Urrutia, 1992). Zuniga-Urrutia (1992) defined action research as the "process of inquiry conducted by and for those taking the action" to assist in "improving and/or refining his or her actions" (p. 3). In action research, the researcher is actively involved in the study and its participants (Zuniga-Urrutia, 1992). Action research, using a mixed-methods approach, was conducted to answer the research questions. The traditional quantitative methods of research can limit the applied benefits in educational research, where perspectives are important aspects of the classroom and limited when represented exclusively by quantitative methods. The complexity and value of the classroom can be lost in a purely quantitative focus that lacks the ability to define effectiveness in teaching methods through the use of student voices and feelings. Qualitative and mixed method case studies in education are common practices in order to capture the uniqueness of the classroom (Merriam, 1998).

    Kemmis and McTaggart (2005) noted action research is often a "solitary process of systematic self-reflection" (p. 277). As a solitary process, action research still involves collaborative change. The use of the participants or students can be collaborative when working with multiple students and instructors within the study setting; action research inspires others to join the movement in order to support and legitimize the change (Merriam, 1998).

    For this study, a more precise definition of action research constructed by Zuniga-Urrutia

(1992) was utilized, describing action research as, "a practice which combines in some way research (inquiry) and action (intervention processes)" (p. 7). In teacher-researcher action research, the teacher is "central and defines the problem" and acts to "systematically examine and improve the educational practices through individual and collective reflection" (Zuniga-Urrutia, 1992, p. 36). Action research allows educators to develop a "deeper understanding of the process of teaching and learning" (Somekh, 2006, p. 62).

**Action research spiral.** The action research spiral is "comprised of steps which include planning, action, reflection, and evaluation" (Zuniga-Urrutia, 1992, p. 38) and is flexible to the environment of the classroom where predictions can be difficult. This spiral includes, "planning a change, acting and observing the process and consequences of the change, reflecting on these processes and consequences, re-planning, acting and observing again, reflecting again, and so on" (Kemmis & McTaggart, 2005, p. 276).

The spiral developed by Kemmis and McTaggart (2005) is found in Figure 2.
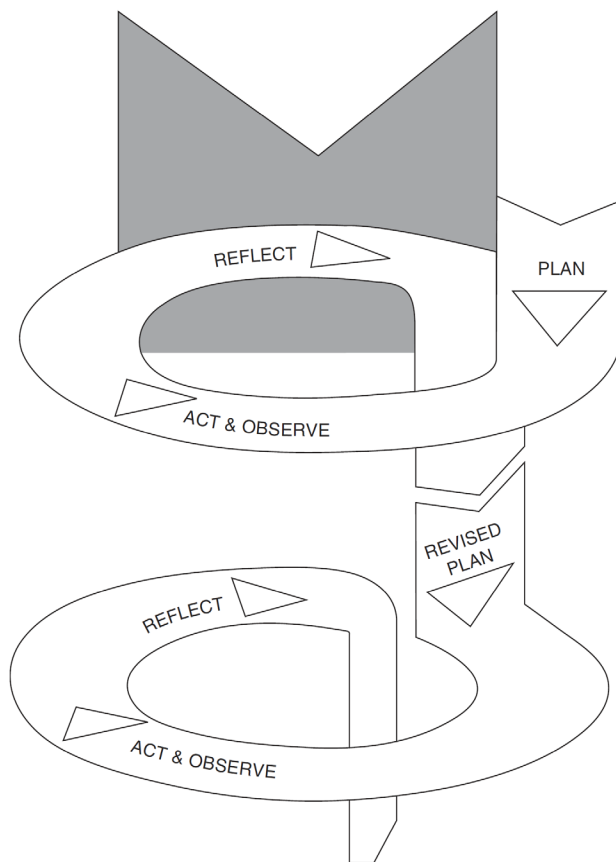
*Figure 2.* Illustration of the action research spiral. From The Sage Handbook of Qualitative Research, 3rd ed. (p. 278), by S. Kemmis and R. McTaggart, 2005, Thousand Oaks, CA: Sage Publications, Inc. Copyright 2005 by Sage Publications, Inc. Reproduced with permission of Sage Publications, Inc. in the format Thesis/Dissertation via Copyright Clearance Center (Appendix G).

The reflective process of action research reported in Figure 2 utilizes diaries, journals, observations, interviews, questionnaires, and case studies to triangulate the data collected as a means of improving educational instruction (Somekh, 2006). The spiral process of action research is comprised of seven steps: selecting a focus, clarifying theories, identifying research questions, collecting, then analyzing data, reporting results, and taking informed action (Sagor, 2000).

***Selecting a focus.*** Sagor (2000) described selecting the focus as a reflection on the focus. The investigator must consider many aspects such as the demands of the research and the

researcher's interests.  This reflective process includes a common aspect of the researcher's class that presents an ongoing challenge such as student preparedness and engagement; generally, the researcher asks reflective questions to begin the process (Sagor, 2000).

*Clarifying theories.*  Once the focus has been established, the second step is to ground this focus utilizing theoretical perspectives.  Theoretical frameworks will guide and shape the research study (Ravitch & Riggan, 2016).

*Identifying research questions.*  The third step is to determine what questions will guide the research; asking what is significant about the research and what is wished to be known (Sagor, 2000).

*Collecting data.*  Step four is to determine the means through which the data will be collected to answer the research questions.  These data can be existing or historical, observational, and probing (Sagor, 2000).  There should be a goal of triangulating the data (Kemmis & McTaggart, 2005).

*Analyzing data.*  In step five, the researcher analyzes the data; Sagor (2000) suggested answering the two questions: "What is the story told by these data? and Why did the story play itself out this way?" (p. 6).

*Reporting results.*  Once the data are analyzed, the results must be reported.  The primary purpose of the study was discovery; therefore, sharing the information gained will aid others in improving practice (Sagor, 2000).

*Taking informed action.*  Step seven is taking action to apply what has been discovered. The purpose of teachers as researchers is to improve instructional practices and student outcomes; planning how to implement findings is putting the data to work (Sagor, 2000).

**Action Research Dissertations**

Action research dissertations, though not as common as traditional dissertation methods, are utilized in doctoral programs to aid students in becoming stewards of practice (Zambo, 2011).  Also known as professional practice dissertations, they "typically focus on applied scholarship around a local problem of practice" (Dawson & Kumar, 2014, p. 62) to inform decision-making and are more common in educational doctoral programs.  Action research dissertations allow doctoral students to investigate relevant research in a specific setting and environment (Dawson & Kumar, 2014).  Examples found in the literature support the use of this nontraditional approach to dissertation research, specifically in Doctor of Education programs (Alanazy, 2011; Dawson & Kumar, 2014; Zambo, 2011).  Dawson and Kumar (2014) provided principles to guide the dissertation process in their educational technology doctoral program that can be adapted to action research dissertations in general:

Guiding Principle #1: The dissertation is embedded in the student's professional practice or content.

Guiding Principle #2: The dissertation addresses a problem in the student's professional practice and is related to the field of educational technology.

Guiding Principle #3: The problem is framed using relevant literature.

Guiding Principle #4: The problem is addressed using relevant methods.

Guiding Principle #5: The dissertation discusses implications for professional practice. (p. 63)

With the noticeable growth in action research dissertations, these principles guide students and programs alike and help to produce research intended to grow and support best teaching practices (Alanazy, 2011).

**Action Research Case Study**

A qualitative case study "is an intensive, holistic description and analysis of a single instance" (Merriam, 1998, p. 21). To be considered a case study, there must be boundaries such as time or number of participants included in the study (Merriam, 1998). Case studies are chosen because researchers are "interested in insight, discovery, and interpretation rather than hypothesis testing" (Merriam, 1998, p. 29).

**Limitations to the action research case study**. The qualitative nature of action research case studies offered limitations. These limitations include the researcher being the "primary instrument of data collection and analysis" (Merriam, 1998, p. 42). Another limiting aspect was ethics; when case studies are performed by one individual, the investigator might use selective information to support the case study (Merriam, 1998). It is not only important for the investigator, but also for readers, to understand these biases. When analyzing data, the researcher supported analysis with excepts of participant responses to reflect themes that were developed. Generalization of the case study was also a limitation. As case studies are a snippet in time using a preselected population, the results must be treated as such. Though this idea is a limitation for vast generalization, it is also a benefit for small generalizations such as certain programs and populations (Marshall & Rossman, 1999).

**Study Design**

The current action-based research study utilized the case study method to explore the growth mindset and academic risk-taking in an athletic training program's clinical courses in higher education. The study involved the use of surveys, Likert scales, probing questions, and academic instruments. The aim of the study was to investigate the facilitation of growth mindset through modification of instructional practices with a focus on the development of growth

mindset through implementation of academic risk-taking.

The researcher collected data on changes and perceptions of the impact of the

modification of instructional practices in the courses in order to answer the research questions

found in Table 1.

Table 1

*Research Question Matrix*

Overall: What is the impact of facilitation of growth mindset through modification of instructional practices in athletic training clinical courses at a private university in the southeast?

| Research questions | Tools/Instruments | Data to be collected | Method of analysis |
|---|---|---|---|
| RQ1: 1. What is the impact of implementing academic risk-taking activities on student scores on academic risk-taking and growth mindset measures? | ART*: Pre-& Post PART 4pt Likert scale | Quantitative | Descriptive Statistics |
| | Pre and Post PART Q13-16 | Qualitative | Descriptive analysis of themes |
| | GM*: Pre and Post, TOI, CIOIM, QGCI Likert Scale 1-6 | Quantitative | Descriptive Statistics |
| | TCGM Q1, QGCI Q4 | Qualitative | Descriptive analysis of themes |
| RQ2: 2. What is the impact of participating in academic risk-taking activities on student perceptions of error/failure in athletic training courses? | Perception survey Week 13 Week 16 Q1-5, 13-14 | Qualitative | Descriptive analysis of themes |
| RQ3: 3. What is the impact of participating in academic risk-taking activities in athletic training courses on student perceptions of preparedness in utilizing the course skills and knowledge in real-life situations? | Perception survey Week13 Q1-3 Week 16 Q6-12 | Qualitative | Descriptive analysis of themes |

*ART=Academic risk-taking, GM=Growth Mindset.

The matrix in Table 1 aligned the research questions with the qualitative and quantitative

data collected during the course of the study.

The study utilized a convergent parallel mixed methods research design. A convergent parallel mixed methods design was most appropriate for this study because it allowed the researcher to analyze the quantitative and qualitative data separately and then compare the results to investigate if the findings confirm or disconfirm each other (J. W. Creswell, 2014). Figure 3 displays Creswell's (2014) basic mixed-methods designs used by the researcher (p. 219).
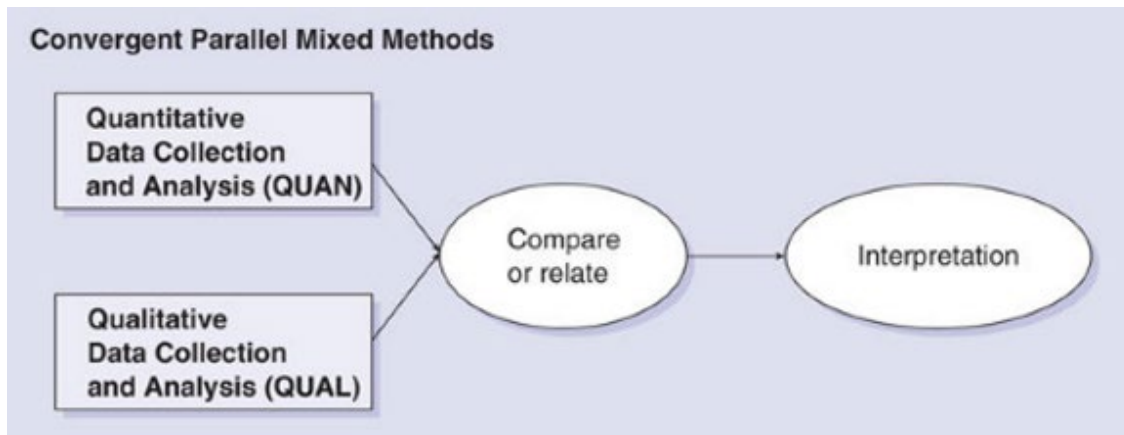


*Figure 3*. Basic Mixed Methods Designs. From Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 4th ed. (p. 220), by J.W. Creswell, 2014, Thousand Oaks, CA. Copyright 2014 by Sage Publications Inc. Reproduced with permission of Sage Publications, Inc. in the format Thesis/Dissertation via Copyright Clearance Center (Appendix H).

J. W. Creswell (2014) asserted both the quantitative and qualitative data provide the researcher with different types of information. The qualitative component of the research study included perceptual data on academic risk-taking and growth mindset; the quantitative information included growth mindset and academic risk-taking questionnaire data. The mixed-methods approach allowed the researcher to draw upon the strengths of the qualitative and quantitative components, providing more data which were subsequently used to triangulate the findings of the study; employing this approach allowed the researcher to develop a multifaceted understanding of the modification of instructional practices and directed the study's conclusions (J. W. Creswell, 2014).

The quantitative and qualitative data were collected, analyzed, and reported

independently in a comparison matrix.  The data were subsequently combined and collectively analyzed to relate and investigate common themes.  Once the collective analysis was complete, the data were interpreted, and conclusions were drawn to answer the research questions.

**Setting and Participants**

  **Setting.**  The study took place within the Athletic Training Program (ATP) at a small, private, faith-based Institution of Higher Learning.  The program was accredited by CAATE and located within a College of Health Sciences at the aforementioned Institution of Higher Learning.  The university, fully accredited by the Southern Association of Colleges and Schools, was located in a rural setting with a population of approximately 5,000 students.  The average university class size was 25; however, the ATP courses registered a significantly smaller class size of 2-3.  The ATP was in a teach-out phase and was set to close; this circumstance contributed to the small class size.  The program's facilities were recently updated with state-of-the-art equipment in an inter-professional setting with other health-care programs.  The ATP practiced a secondary admissions policy with enrollment beginning the fall semester of the sophomore year; enrollment was limited to 36 total students or 12 students per cohort.  The educational experience had two major components: classroom education and clinical education.  This combination of classroom learning and practice in the clinical environment allowed students to build on and apply knowledge throughout the program.  A minimum of 128 semester hours was required for graduation: 42 hours within the major.  Upon successful completion of the academic and clinical requirements of the ATP, students received a Bachelor of Science degree in athletic training, creating eligibility to challenge the Board of Certification's entry examination.

  **Participants.**  The participants of the study were five college students enrolled in the

ATP who included sophomores, juniors, and seniors.  The participants were female White/non-Hispanic students varying in age from 18-23 years.  The participants displayed in Table 2 were required to maintain a minimum GPA of 2.5 in order to remain in the ATP.

Table 2

*Participant Information*

| Participant | Current level | Enrolled course | Gender |
| --- | --- | --- | --- |
| Participant #1 | Senior | ATTR 401 | Female |
| Participant #2 | Junior | ATTR 301 | Female |
| Participant #3 | Junior | ATTR 301 | Female |
| Participant #4 | Sophomore | ATTR 201 | Female |
| Participant #5 | Sophomore | ATTR 201 | Female |

The participants listed in Table 2 included all students enrolled in the clinical courses and were not part of a random sample.

**Courses.**  The courses included in the current study were the clinical courses of the ATP. Clinical courses had two components, in-class and clinical setting.  The current study focused on the in-class portion of the courses.  The courses used were Athletic Training Clinical II (ATTR 201), Athletic Training Clinical IV (ATTR 301), and Athletic Training Clinical VI (ATTR 401). Each course met once or twice per week, totaling 2 hours weekly, approximately 15 times during the semester which constituted a two-credit hour course.  The clinical courses were taught during the spring 2018 semester at the sophomore, junior, and senior levels.

*ATTR 201.*  In this course, each student demonstrated proficiency in cognitive and psychomotor skills learned in Recognition and Care of Injuries (ATTR 225) and Fundamentals of Protective Equipment and Prophylactic Procedures (ATTR 230).  Athletic training students performed skills in assigned clinical experience settings commensurate with level of education, competence, and experience.  The course syllabus can be found in Appendix I.

*ATTR 301.*  In this course, each student demonstrated proficiency in cognitive and psychomotor skills learned in Evaluation of the Upper Extremity (ATTR 325).  Athletic training students performed skills in assigned clinical experience settings commensurate with level of education, competence, and experience.  The course syllabus can be found in Appendix J.

*ATTR 401.*  In this course, each student demonstrated proficiency in cognitive and psychomotor skills learned in Medical Conditions and Pharmacology (ATTR 402).  The served as final preparation for the Board of Certification examination.  Athletic training students performed skills in assigned clinical experience commensurate with level of education, competence, and experience.  The course syllabus can be found in Appendix K.

*Learning management system.*  All courses utilized the electronic learning management system Blackboard.  Each Blackboard course housed the course syllabus, tentative course calendar, important course dates, course announcements, assignment descriptions, due dates, rubrics, and grades.  Students also used Blackboard to communicate with the instructor or other students through question forums.  Surveys were created through Google Docs and were emailed and made available via Blackboard.

**Instruments**

The surveys included in the study were from previous researchers Dweck (2000), Robinson (2012), and Brysacz (2017).  Specifically, the Theories on Intelligence Scale—Self Form, Confidence in Intelligence Measure, Task-choice Goal Measure, and the Goal Questionnaire used were from Dweck's (2000) research on growth mindset.  The PART survey was adapted from Robinson's (2012) research on academic risk-taking.  The perception surveys were adapted from Brysacz's research on growth mindset.  Surveys were administered in the form of an electronic survey utilizing Google Forms throughout the three courses at

predetermined time periods. Surveys were emailed and made available via Blackboard to remind participants to complete the instruments at specific times throughout the semester. All instruments were coded via randomly assigned participant numbers to allow responses to be grouped while still maintaining confidentiality. All participants signed an informed consent approved by the Institution of Higher Learning's IRB.

**Growth mindset measures.** A preassessment and postassessment of growth mindset using the four growth mindset surveys (the Theories on Intelligence Scale—Self Form, Confidence in Intelligence Measure, Task-choice Goal Measure, and the Goal Questionnaire) was administered electronically and took fewer than 10 minutes to complete. The four instruments totaled 19 questions. All questions were combined into one Google Form electronic survey instrument that collected responses anonymously and stored them in Google Forms. The survey responses were calculated utilizing instructions provided by Dweck (2000). All survey responses were calculated and analyzed as instructed. Some data were graded with high and low score benchmarks detailed by the instruments, while some instruments did not delineate benchmarks for high and low scores. This was thoroughly detailed in the data analysis to ensure clear understanding of the data collected. For the Task-choice Goal measure, a response of choice one or three represented performance goals; a response choice of two or four represented learning goals. This was also detailed in the analysis of the data.

**Academic risk-taking measures.** A pre-assessment and post-assessment of academic risk-taking using the PART survey was administered and took fewer than 15 minutes to complete. The PART survey, a 16-question instrument, was administered electronically through a Google Forms electronic survey (PART electronic survey). The aggregated responses from participants provided a risk propensity variable score that ranged between 12 (low) and 48

(high).

**Perception surveys.** A perception survey was administered at week 13 and at week 16, each through a Google Forms electronic survey. The week 13 perception survey consisted of four questions based on original mindset and current mindset changes between week eight and week 13. The week 16 perception survey contained 14 questions related to growth mindset and changes implemented in the course over the second half of the semester.

The week 13 and 16 collection points were chosen because week 13 was the midpoint of the study timeline and week 16 was the end of the study. This timeline was designed to investigate participant perceptions throughout the study. Both perception surveys were adapted from Brysacz's (2017) original instruments and modified for the current study. Brysacz's study questions were originally used as semi-structured interview questions. The researcher considered utilizing the questions in the same manner; however, the researcher's role as an instructor in the study's courses limited the potential truthful answers of the participants. Therefore, the perception questions were converted into electronic surveys as previously detailed. In addition, some questions were removed from the original set because the questions were specific to Brysacz's research and were not appropriate for the current study. The data gathered from the perception surveys provided information on how participants felt about their mindset and course changes in their own words. The perception survey can be found in Appendix L.

**Permissions.** The researcher sought and received permission to use each of the instruments utilized in the current study: Dweck's (2000) Theories of Intelligence Scale—Self Form for adults, Confidence in One's Intelligence Measure, Task-choice Goal Measure, and Questionnaire Goal Choice Items; along with Robinson's (2012) PART survey and Brysacz's

(2017) semi-structured interview questions and lesson plans (Appendix M).

**Modification of Instructional Practices**

Clifford (1990) recommended three conditions necessary to incorporate academic risk-taking in the classroom and reap the benefits of an environment conducive to learning outcomes over performance outcomes.

The first condition of academic risk-taking was to "allow students to freely select from materials and activities that vary in difficulty, and probabilty of success" (Clifford, 1990, pp. 24-25). The second condition was variation in points awarded for tasks based on the task's difficulty; the more difficult the task, the increase in payoff for completing the task (Clifford, 1990). The third condition was an environment "tolerant of error making and supportive of error correction" (Clifford, 1990, p. 25). The following changes were implemented in the courses through modification of instructional practices to meet these conditions.

Table 3 displays the original course design and modificed instuctional practices implented in the courses included in the current study.

Table 3

*Course Design Comparison Chart*

| Modified instructional practices | Original design | New design |
| --- | --- | --- |
| Growth mindset lesson plans | Not present | Present |
| Applied decision-making | Not present | Present |
| Global assessments | Present | Present |
| Self-initiated choices | Not present | Present |
| Failure tolerance environment | Not present | Present |

The interventions in Table 3 are discussed in further detail below and an explantion for their use is provided.

**Growth mindset lessons.** The growth mindset lessons were adapted from Brysacz's

(2017) study on growth mindset and were intended to introduce participants to mindsets and then expand upon the development and identification of mindsets.  While some participants may have exercised a growth mindset in the past, the researcher chose to provide instruction on the concept to ensure equity.  The lessons plans were developed to provide examples of the utilization of the growth mindset in participant courses.  Lesson plans ranged from the brief introduction to growth mindset to lessons expanding growth mindset to include students practicing and identifying personal growth mindsets.  The lessons are located and detailed in Appendix N.

**Applied decision-making.**  The applied decision-making questions were designed to encourage students to "utilize judgment in making patient care decisions in a simulated situation" (Van Ost, Feirman, & Manfre, 2017, p. 131).  Applied decision-making questions were questions that allowed participants to work through decisions in real time while receiving feedback and discussing why decisions were made.  Each week, the participants completed two questions each.  These assessments were smaller and less challenging than the global assessments the participants also completed.  Employing the smaller, less challenging formative assessments is a suggestion from Clifford (1990) for incorporating academic risk-taking activities into the classroom.  The specific questions can be found in the course text by Van Ost et al. (2017) *Athletic Training Exam Review: A Student Guide to Success*, Chapter 4.

**Global assessments.**  The global assessments were more formal, summative assessments that occurred throughout the course as delineated on the course syllabi.  Global assessments were larger, more comprehensive assessments created as culminating activities where students retrieved information from previous courses while applying a wide range of skills.  Another recommendation from Clifford (1990) was allowing retakes of summative assessments if original scores were not sufficent.  All participants were permitted to retake global assessments if the

passing score of 80% was not met. Clifford (1990) also recommended giving students more choice over their assessments; therefore, the researcher incorporated participant choice between two smaller globals or one larger global assessment. Globals were part of the original course design so participants were familiar the assesssment; the modification followed Clifford's (1990) conditions and allowed students self-initiated choice with variable payoffs. To accommodate the change, the two smaller globals were summarily equivalent to the single larger global; the larger global exceeded the smaller globals in level of difficulty. Both choices encompassed the same content area. Clifford's (1990) recomendations for encorporating academic risk-taking in the classroom with self-initiated tasks were met within the course modifications.

  **Failure tolerance environment.** The last aspect of the modification of instructional practices included daily class reflections at the close of each course period where participants and instructors shared a question and together the group disscussed the correct answer and how it was discovered. This activity was developed to reveal vulnerabilities, equitably contributing to the construction of an environment where it was acceptable and encouraged to question and make errors (Dweck, 2006; Reina, Reina, & Hudnut, 2017). The questions were meant to develop a more open environemnt where participants could see themselves as well as their peers and instructors learn and grow from questioning and the learning process.

## Study Procedures

  The current study took place during the second half of the spring 2018 semester; it began in week eight and continued through the end of the semester, week 16. The first half of the courses were delivered prior to the modification of instructional practices made by the researcher.

  At the beginning of week eight, the participants completed Dweck's (2000) four mindset

surveys and the PART survey. These surveys were completed prior to the first class session of the week. Taking the instruments at the mid-semester mark (week eight) acted as a baseline for participant mindsets and academic risk-taking measures. Upon completion of the week eight surveys, the researcher delivered a growth mindset lesson plan during the first class session of week eight. The growth mindset lesson introduced the participants to growth mindset and identified where learning was active for them and how they retained the learning from prior experiences. Participants were then asked to apply these aspects of learning to their college courses.

At week 13, the participants were given the first perception survey. This survey was completed prior to the first class session of week 13 to investigate any changes in mindset from the first mindset lesson modification of instructional methods between week eight and 13. The participants were given the second and last growth mindset lesson after the completion of the week 13 survey during the first class period of week 13.

In the final week of the course, week 16, the participants were reassessed with the Theories on Intelligence Scale—Self Form, Confidence in Intelligence Measure, Task-choice Goal Measure, and the Goal Questionnaire; along with the PART survey. The participants also completed the week 16 perception survey. All surveys were completed electronically after the last class period of the week.

Table 4 provides week-by-week instructions and data collection procedures for the study.

Table 4

*Week-By-Week Generic Breakdown and Data Collection*

| Week of collection | Data collection |
| --- | --- |
| Week 8 | Theories of Intelligence Scale—Self Form |
| | Confidence in Intelligence Measure |
| | Task-choice Goal Measure |
| | Goal Question |
| | PART survey |
| Week 13 | Perception Survey |
| Week 16 | Theories of Intelligence Scale—Self Form |
| | Confidence in Intelligence Measure |
| | Task Choice Goal Measure |
| | Goal Question |
| | PART survey |
| | Perception Survey |

Table 4 provided a detailed time frame that displayed clarity in the data collection process.

**Data analysis.** The data analysis of this mixed-methods study included both an analysis of the quantitative and qualitative data for triangulation of the data in order to answer the research questions.

*Quantitative data analysis.* The researcher investigated whether the study's modifications of instructional practices impacted participant growth mindset and academic risk-taking. The quantitative data of the study were collected from Likert scale surveys. The data collected using the Likert scales were analyzed using descriptive statistics. Descriptive statistics are used to summarize data in such a way that patterns may be identified if they exist (Laerd, n.d.). Using descriptive statistics helped the researcher visualize the data in table format, which

was how the data were presented in the current study. Descriptive statistics were used to

categorize data from pre to post to allow for easy comparison to note change in response or

score. The mean was used in analyzing the PART survey data reported in Chapter 4 by

comparing pre- and post-scores. The researcher used the *Intellectus Statistics* software with the

assistance of a paid statistician.

> ***Qualitative data analysis.*** The qualitative data collected underwent data deduction. Data

deduction focused and simplified the data in order for the data to be transformed into themes

(National Science Foundation, 1997). The researcher's data deduction was guided by the need to

address the research questions and to extract the relevant data.

> The steps in Table 5 were used during the data reduction as a guide.

Table 5

*Steps in Conducting Data Reduction of Qualitative Data*

| Questions |
| --- |
| What patterns/common themes emerge around specific items in the data?<br>   – How do these patterns (or lack thereof) help to shed light on the broader study questions? |
| Are there any deviations from these patterns?<br>   – If yes, what factors could explain these atypical responses? |
| What interesting stories emerge from the data?<br>   – How can these stories help to shed light on the broader study questions? |
| Do any of the patterns/emergent themes suggest additional data needs to be collected?<br>   – Do any of the study questions need to be revised? |
| Do the patterns that emerge support the findings of other corresponding qualitative data analysis that have been conducted? |

*Note.* Table was adapted by the National Science Foundation (1997).

> A thematic analysis for "identifying and organizing patterns of discourse, narrative, and

text into themes" was used through the deductive approach to "look for data that specifically met

the parameters of the risk variables" (Robinson, 2012, p. 65).  Once the data were analyzed, the

relevant themes were extracted to draw conclusions and assess the data's implications in regards

to the research questions (National Science Foundation, 1997).

To begin the process of data deduction, the researcher created categories (Laerd, n.d.).

These categories assisted the researcher with data collection using relevant themes.  Categories

used during initial theme development are found in Table 6.

Table 6

*Categories for Qualitative Data Reduction*

| Terms to identify | Excerpts from data |
|---|---|
| Academic Risk-Taking/Risk-Taking/Risk | |
| Performance | |
| Growth Mindset | |
| Fixed Mindset | |
| Learning/Growing | |
| Participation | |
| Error/Failure | |
| Career Readiness/Prepare | |
| Success | |
| Perception/Confidence/Feeling/Belief | |
| Grades/Scores | |

Displaying the data in Table 6 allowed the researcher to compare answers from different

participants and develop themes using similar answers and to identify and explain data that did

not fit into the initial themes.  While the primary objective of the analysis was to discover and

investigate data to answer the research questions, data outside the scope of the themes were also

useful in investigating new meanings from participant answers.  Table 6 was an initial list; when

analyzing the data, the researcher discovered other relevant data.  Table 6 represents the initial

themes; when analyzing the data, the researcher ascertained other relevant themes.  The

researcher included two new terms in the development of themes.  The terms knowledge and

intelligence were used repeatedly by participants; the researcher supplemented the initial themes

list with these terms as the data necessitated.  The document used in the development of the

themes with displayed excerpts is found in Appendix O.

From the categories, the researcher then combined like data to answer the research

questions.  The surveys were developed to pull perceptual data from the participants; therefore, it

was important to transfer the perceptual data into a form more appropriate and cohesive to

answer the research questions.

The comparison of the data, conducted by the researcher using a comparison matrix as

instructed by J. W.  Creswell and Clark (2007) and displayed in Table 7, charted both

quantitative and qualitative data to determine if they supported each other.

Table 7

*Convergent Data Comparative Matrix*

| Qualitative data | Quantitative data |
|---|---|
| Collection | Collection |
| Perception survey | PART survey (Likert) |
| PART survey Q13-16 | Theories of Intelligence Scale—Self Form |
| Task-choice Goal Measure Q1 | (Likert) |
| Questionnaire Goal Choice Item Q4 | Confidence in One's Intelligence (Likert) |
| | Questionnaire Goal Choice Item Q1-3 |
| Analysis | Analysis |
| Data reduction using coding and themes | Descriptive Statistics |
| Results | Results |

Compare and contrast
Compare themes/perceptions from qualitative measures to Likert scale results

Interpretation/Triangulation (qual + quan)
Does the qualitative and quantitative data answer the research questions?
Does the qualitative and quantitative data report like results for the research questions?

Using a convergence model comparative matrix, displayed in Table 7, allowed for clear

triangulation of the two data sets.  The researcher maintained design parameters for the

convergent parallel research, collecting and analyzing the qualitative and quantitative data separately before comparing and contrasting to interpret the final findings (J. W. Creswell, 2014; J. W. Creswell & Clark, 2007). The charts utilized for this process are found in Appendix P.

**Limitations and Delimitations**

  **Limitations.** Study limitations are restrictive aspects of the research study the researcher had no control over to change (Foss & Waters, 2016). A limitation of the current study was the population sample size. The sample size was small; there were five participants in the athletic training program, and all five consented to participate. A small participant pool is common in case studies, as researchers are usually engaged with a small population during a specific time period (Merriam, 1998). The number of students in the athletic training program determined the number of participants in each course, and the instructor had no control over this number. The homogeneous population was an additional limitation as all participants were Caucasian females. Another limitation was the small number of instructors; at the Institution of Higher Learning there were only two instructors, and the researcher-instructor was one of the two. Though it was a common structure in action research that the researcher was actively involved in the study, ideally, in traditional forms of research, the researcher would not also be an instructor. This situation could not be avoided however, since the courses were already assigned to the instructors and the limiting size of the department, with only two instructors. The researcher also addressed the researcher-instructor limitation by clearly stating in the informed consent that participation was entirely voluntary and did not affect participant grades in the course or status in the ATP. The researcher chose the use of a proctor to extend the invitation to participate in the study to the potential participants. Proctor use in the invitation phase further addressed this limitation. The researcher strived to maintain a normal class environment without emphasizing

the study to further avoid influence.

      **Delimitations**.  Study delimitations are restrictive aspects of the research study due to intentional decisions made when the researcher developed the study (J. W. Creswell, 2014).  A delimitation of the current study was the choice made by the researcher to administer the perception survey questions via electronic survey rather than performing individual interviews. As course instructor, the researcher chose to eliminate the interview as a means of gathering participant perceptions.  The researcher chose to eradicate the pressure to participate in sharing perceptions by creating an anonymous survey; additionally, the researcher wanted to eliminate the perception that participation affected grades by ensuring anonymity.  The researcher's choice to gather perceptual data electronically rather than via interviews, while a delimitation of the study, enhanced the data collection process. The study took place during the second half of the semester, limiting the duration to 8 weeks.  This was a brief exploration into the impact of the modification of the instructional practices and was intended to allow participants to compare to the usual course format of the first half of the semester; resulting in a delimitation of the study.

      The purpose of Chapter 3 was to describe the methodology conducted to investigate the research questions.  The researcher addressed the study design and discussed the supportive research; the role of the researcher, settings, participants, instruments, course design, and modifications of instructional practices were detailed.  Furthermore, the researcher specified procedures, data analysis, limitations, and delimitations of the study.  Chapter 4 reports the data, and Chapter 5 discusses the findings and implications.

**Chapter 4: Results**

This action research case study employed a convergent parallel mixed methods research design to investigate the impact of facilitation of growth mindset through modification of instructional practices to support academic risk-taking in clinical courses. The study also examined the impact of the modification of instructional practices on participant perceptions of error and preparedness. Five students enrolled in the ATP at the researcher's Institution of Higher Learning consented to participate in the study. Quantitative data were collected using growth mindset and academic risk-taking measurements, collected both pre- and post-study. Qualitative data were collected at the midpoint and conclusion of the study using perception surveys on the modified instructional practices, growth mindset, and academic risk-taking.

The demographics collected on the study participants were age, gender, ethnicity, and academic year. Age range for the participants was from 18 to 21 years; participant mean age equaled 20 years. Participants included students identified as female and Caucasian/White: two sophomores, two juniors, and one senior.

The results section is organized by the research questions (RQ) of the study.

**RQ1 Results**

**What is the impact of implementing academic risk-taking activities on student scores on academic risk-taking and growth mindset measures?** The data collected for Research Question 1 included both quantitative and qualitative data. The researcher investigated the impact of the modified instructional practices including the activities implemented to encourage academic risk-taking and the development of growth mindset in the participants.

There were several instruments utilized to gather and triangulate data in an attempt to answer the research question. Displayed in Table 8 is the data matrix for RQ1.

Table 8

*RQ1 Data Matrix*

What is the impact of implementing academic risk-taking activities on student scores on academic risk-taking and growth mindset measures?

| Tools/Instruments | Data collected | Data type | Method of analysis |
|---|---|---|---|
| Propensity for Academic Risk-Taking | Pre- & Post- Q 1-12 | Quantitative | Descriptive Statistics |
| | Pre- & Post- Q13-16 | Qualitative | Descriptive analysis of themes |
| Theories of Intelligence Scale—Self Form | Pre- & Post- | Quantitative | Descriptive Statistics |
| Confidence in Intelligence Measure | Pre- & Post- | Quantitative | Descriptive Statistics |
| Task-choice Goal Measure | Pre- & Post- | Qualitative | Descriptive analysis of themes |
| Questionnaire Goal Choice Items | Pre- & Post- Q1-3 | Quantitative | Descriptive Statistics |
| | Pre- & Post- Q4 | Qualitative | Descriptive analysis of themes |

The instruments in the matrix, presented in Table 8, included the PART survey for academic risk-taking and four growth mindset surveys. The participants completed the PART survey that consisted of twelve 4-point Likert scale items and four open-ended items administered both pre- and post-study. The 4-point Likert scale used numbers 1-4, with 1 denoting very uncomfortable and 4 denoting very comfortable. The Likert scale items were created to gauge participant comfort levels with participation in classroom activities that could be considered risky such as sharing ideas and opinions, disagreeing with others, and volunteering to talk. The participants were asked to respond to the open-ended items on being successful in a hypothetical course, peer perceptions, and course assessment.

Academic risk-taking tendencies (PART survey, items 1, 2, 3, 5, 8, 9, 10, and 12) were

measured with the use of numbers 1-4 with 1 denoting low risk and 4 denoting high risk.  The

reverse use of the numbers was used for items 4, 6, 7, and 11, where 4 denoted low risk and 1

denoted high risk.

Table 9 clarifies the scoring.

Table 9

*PART Survey Statement Score Breakdown*

|  | Statement | Low risk answer | High risk answer |
|---|---|---|---|
| Item 1 | Participating in course activities that involve sharing my ideas and opinions. | 1=Very Uncomfortable | 4=Very Comfortable |
| Item 2 | Disagreeing with others in a class discussion, if l think I am right. | 1=Very Uncomfortable | 4=Very Comfortable |
| Item 3 | Sharing my opinions in class, even if no one else agrees with my point-of-view. | 1=Very Uncomfortable | 4=Very Comfortable |
| Item 4 | Volunteering to talk in class, only after planning exactly what I will say. | 4=Very Comfortable | 1=Very Uncomfortable |
| Item 5 | Asking questions that challenge the concepts discussed in class. | 4=Very Comfortable | 1=Very Uncomfortable |
| Item 6 | Waiting for others to answer first so I can agree with what they have said. | 4=Very Comfortable | 1=Very Uncomfortable |
| Item 7 | Volunteering to answer, when I know the questions are simple and not controversial. | 4=Very Comfortable | 1=Very Uncomfortable |
| Item 8 | Offering different suggestions to peers about ways in which to complete group assignments. | 1=Very Uncomfortable | 4=Very Comfortable |
| Item 9 | Disagreeing with the professor, even if I think there are negative consequences. | 1=Very Uncomfortable | 4=Very Comfortable |
| Item 10 | Sharing my ideas in class, even if might feel embarrassed after I have shared. | 1=Very Uncomfortable | 4=Very Comfortable |
| Item 11 | Agreeing with the group in a discussion even if I think their answer is wrong. | 4=Very Comfortable | 1=Very Uncomfortable |
| Item 12 | Defending my views, even when others challenge my ideas in class. | 1=Very Uncomfortable | 4=Very Comfortable |

Table 9 displayed the PART survey Likert scale items with corresponding risk level.  For

example, a study participant who selected 1 (very uncomfortable) or 2 (uncomfortable) on the 4-point Likert scale for Item 1 was considered to have low academic risk-taking tendencies, as compared to selecting 3 (comfortable) or 4 (very comfortable), indicating high academic risk-taking tendencies.

Table 10 compares study participant pre- and post-study scores (total) on the PART survey. Total PART survey scores were categorized for risk propensity using the following intervals: low = 12-24, medium = 25-37, or high = 38-48.

Table 10

*PART Participant Scores*

| Participant | ART pre- score | ART cat. | ART post- score | ART cat. |
|---|---|---|---|---|
| P1 | 32 | Med | No data | No data |
| P2 | 29 | Med | 29 | Med |
| P3 | 37 | Med * | 38 | High * |
| P4 | 31 | Med | 29 | Med |
| P5 | 34 | Med | 35 | Med |

*Denotes change in cat. (category).

Analysis of the individual pre-study scores, presented in Table 10, categorized all participants as medium-level academic risk-takers. One participant had an increase in the post-study PART survey score, highlighting the participant's move into the high level of academic risk-taking. Overall, one participant moved into a higher risk-taking propensity category, one participant had an increase in medium risk-taking score (indicating more risk-taking propensity in the medium category), one had a 1-point decrease (indicating less risk-taking propensity in the medium category), and one participant did not complete the post-PART survey.

Group scores for the PART survey were similar to the individual scores. Table 11 compares the pre- and post-study group score for each item.

Table 11

*Summary Statistics for PART Q1-12*

| Item | M Pre- (n= 5) | M Post- (n= 4) | M (Pre- + Post-) |
|---|---|---|---|
| Item 1 | 3.20 | 3.25 | 3.22 * |
| Item 2 | 2.60 | 3 | 2.8 * |
| Item 3 | 2.80 | 2.75 | 2.76 * |
| Item 4 | 3 | 3 | 3 |
| Item 5 | 3 | 2.75 | 2.86 * |
| Item 6 | 3 | 3.25 | 3.13 * |
| Item 7 | 3.20 | 3 | 3.1 * |
| Item 8 | 3.20 | 3 | 3.1 |
| Item 9 | 1.60 | 1.75 | 1.68 * |
| Item 10 | 2.40 | 2.25 | 2.33 * |
| Item 11 | 2 | 1.75 | 1.88 * |
| Item 12 | 2.60 | 3 | 2.8 * |
| Total PART Score | 32.6 | 32.75 | 32.68 |

*Denotes a high academic risk-taking score.

Table 11 displayed the mean group scores where high academic risk-taking scores are noted and the mean of the pre- and post-study group score of 32.68 reflects an overall medium level of academic risk-taking.

The open-ended items of the PART survey provided participant perspectives on academic risk-taking tendencies.  Table 12 provides participant pre- and post-survey responses.

Table 12

*PART Item 13 Pre-Post Reponses*

*Do you feel you would need to agree with the views of your instructor to be successful in such a course? Please explain why you feel this way.*

| | Pre- | | Post- |
| --- | --- | --- | --- |
| P1 | I usually speak my mind. Grades should not be affected by opinions. | P1 | No data |
| P2 | Yes, the professor has control over my grades and even if they assure me that my opinion would not affect my grades I would still be hesitant to disagree with them. | P2 | Sometimes, I think the professors can be biased at times and it could affect your grade. |
| P3 | No, I believe that a good conversation about the right answer is always good. | P3 | Not always, with athletic training there are different ways to go about things! So sometimes I have my own ideas and they can sometimes be better. |
| P4 | Not necessarily. Everyone has their own opinions it's just up to you as to whether you stick to your opinion or learn to sway from it based on other people's opinions. | P4 | No. I believe everyone has their own opinion and they are entitled to it. If a professor disagrees with your opinion, then it should not affect your success in the class. |
| P5 | No, I think my instructor accepts other opinions. | P5 | No, I feel like to be more successful I need to agree with my own views rather than someone else's. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Item 13 responses, provided in Table 12, requested participants to respond to the following question, "Do you feel you would need to agree with the views of your instructor to be successful in such a course? Please explain why you feel this way." The overall themes from the pre-study responses were (a) sharing opinions is important, and (b) course evaluation should not be connected to opinions. One response communicated hesitation to disagree with the instructor. The post-study responses showed similar themes as the pre-study responses.

Table 13 reports the responses provided for Item 14 of the PART survey.

Table 13

*PART Item 14 Pre-Post Reponses*

*If you approach completing assignments with a creative or unusual approach, how do you think this might influence your achievement in such a course? Please explain why you feel this way.*

|  | Pre |  | Post |
|---|---|---|---|
| P1 | I think it would better my achievement for I tried harder. | P1 | No data |
| P2 | I think it would have a positive influence because I would be thinking outside of the box and bring some new ideas to the table. | P2 | I think it will influence it in a positive way. Most of the time professors want you to think outside of the box. |
| P3 | I feel it would help my achievement because it makes me more interested in the project or assignment and therefor I usually do better. | P3 | I think if I get creative on assignments then I will do well in the class because it then becomes something I am passionate about. |
| P4 | I think that everyone has their own ways of completing tasks and if it's successful, I say do it! | P4 | I feel like creativity is important in classes because you need to find what works for you when it comes to doing things. |
| P5 | I think this would make me not complete the assignment because its different from what I would usually do. | P5 | I feel like if I approach as assignment different than what I am used to, I would not do as well. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Item 14, presented in Table 13, asked participants, "If you approach completing assignments with a creative or unusual approach, how do you think this might influence your achievement in such a course?  Please explain why you feel this way."  The themes from the pre-study responses were that of positive support for unconventional thinking and embracing new ideas: (a) teachers like it, and (b) makes it more interesting.  There was also a theme of discomfort with difference and the role effort might play.  The post-study response theme was support of creativity.

For Item 15, participant responses are displayed in Table 14, along with the descriptive

analysis.

Table 14

*PART Item 15 Pre-Post Reponses*

*How do you think your peers will view your work on projects if your opinions differ from theirs? Please explain why you feel this way.*

|  | Pre |  | Post |
|---|---|---|---|
| P1 | It should not matter, if we get a good end result. | P1 | No data |
| P2 | Some of them may not like it because they did not think of it or they could love it because it was something different. | P2 | I think they would view it as a different point of view and it might make them think differently. |
| P3 | Sometimes they won't mind and sometimes they don't want to do the project very much anymore. | P3 | I try to explain why I selected a certain option and therefor I think they will be okay to at least listen, so they can see if it is true and the best decision. |
| P4 | Peers may have their own opinion. It's just up to compromising so that everyone's views are expressed. | P4 | I feel like they would be uncomfortable and reject my work. |
| P5 | I think it would not affect anything because my peers can sometimes accept opinions. | P5 | I feel like they will still accept my work because everyone has different views on everything. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

For Item 15, presented in Table 14, participants were asked, "How do you think your peers will view your work on projects if your opinions differ from theirs?  Please explain why you feel this way."  The theme deducted for the pre-study responses was acknowledgement of the difficulty of differing opinions but also a theme of compromise.  The post-study response theme was found to be acceptance of differences.

Table 15 examined the pre- and post-study responses for the final open-ended item in the PART survey.

Table 15

*PART Item 16 Pre-Post Reponses*

*How do you feel instructors should assess/grade participation? Please explain why you feel this way.*

| | Pre | | Post |
|---|---|---|---|
| P1 | If answers are complete, make sense. | P1 | No data |
| P2 | Participation should be graded on just participating, not what you have to say but the fact that you are talking or doing what you are supposed to do. | P2 | They should grade it as your speaking in class, not by your answers. |
| P3 | I think they should grade it more aggressive and compare in the class because some people answer one question every week when others try and answer every question all week long and I do not believe those people should get the same grade. | P3 | No data |
| P4 | I believe participation should be graded based off how much one actually does participate. It's one thing to just show up but it's important to put in effort and express your ideas. I believe THAT is participation. | P4 | No data |
| P5 | I think they should assess participation by the amount of attention being given by the student. Not every class do I have a lot of questions so the classes with fewer questions I don't talk as much but am still paying attention. | P5 | I feel like grades should be assessed by the amount of participation, not on right or wrong because asking questions or answering them is participation even if they are incorrect. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Item 16 posed the question, "How do you feel instructors should assess/grade participation? Please explain why you feel this way." The pre-study and post-study response themes were similar: Participation should be graded through interaction, attention, and effort; not based on right or wrong answers. Only two participants answered the post-survey for Item 16, as was noted in Table 15.

The rest of RQ1's quantitative data came from the four growth mindset surveys completed pre- and post-study. The Theories of Intelligence Scale—Self Form (TOI) was used to investigate participant ideas about their intelligence: if participants felt intelligence was malleable or fixed. A 6-point Likert scale was used with 1 denoting strongly agree, 2 denoting agree, 3 denoting mostly agree, 4 denoting mostly disagree, 5 denoting disagree, and 6 denoting strongly disagree. Table 16 displays the group pre- and post-study score for TOI Statement 1 (S1).

Table 16

*Group Changes from Pre to Post for TOI S1*

| | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| You have a certain amount of intelligence, and you can't really do much to change it. | | | | | | |
| Pre- | | | 1 | 1 | 3 | |
| Post- | | | | 1 | 1 | 2 |

As displayed in Table 16, the shift in belief on the amount of intelligence as a static characteristic was towards a growth mindset.

Table 17 highlights the pre- and post-study score for TOI S1.

Table 17

*Individual Participant Changes from Pre to Post for TOI S1*

| You have a certain amount of intelligence, and you can't really do much to change it. | |
| --- | --- |
| Pre- | Post- |
| P1: Disagree (5) | P1: No data |
| P2: Disagree (5) | P2: Mostly Disagree (4) * |
| P3: Mostly Agree (3) | P3: Disagree (5) * |
| P4: Disagree (5) | P4: Strongly Disagree (6) * |
| P5: Mostly Disagree (4) | P5: Strongly Disagree (6) * |

*Denotes score reflecting post-study beliefs of malleable intelligence.

Responses to S1, submitted in Table 17, indicated overall growth in participant beliefs that individuals do not possess a certain/fixed amount of intelligence and those individuals also possess control to change one's intelligence. Three of the four participants who completed the post-survey shifted toward a growth mindset; one participant stayed in a growth mindset but disagreed less. P4's and P5's growth in disagreement with the statement further indicated a strong growth mindset in both participants. P3 originally showed agreement (3 denoting mostly disagree) and then moved to disagreement (5 denoting disagree), indicating movement from a growth mindset toward a more fixed mindset. P2 also moved toward less of a growth mindset but slightly less so than P3. P2 initially registered a 4, denoting mostly disagree, that shifted from the initial response 5, denoting disagree. P1 responded with disagreement in the pre-study survey but did not complete the post-study survey.

The next statement (S2) in the TOI survey focused on the concept of intelligence as a characteristic that was malleable. Table 18 displays the responses of the participants.

Table 18

*Group Changes from Pre to Post for TOI S2*

| | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| Pre- | | | | 1 | 4 | |
| Post- | | | | 1 | 1 | 2 |

Your intelligence is something about you that you can't change very much.

Mindset shifts occurred in all participants, as indicated in Table 18, who completed both pre- and post-surveys measuring beliefs on the ability of intelligence to be changed. Table 19 details the responses of the individual participant shifts.

Table 19

*Individual Participant Changes from Pre to Post for TOI S2*

Your intelligence is something about you that you can't change very much.

| Pre- | Post- |
|---|---|
| P1: Disagree (5) | P1: No data |
| P2: Disagree (5) | P2: Mostly Disagree (4) * |
| P3: Mostly Disagree (4) | P3: Disagree (5) * |
| P4: Disagree (5) | P4: Strongly Disagree (6) * |
| P5: Disagree (5) | P5: Strongly Disagree (6) * |

*Denotes score reflecting post-study beliefs of malleable intelligence.

The responses for S2, exhibited in Table 19, indicated all participants believed intelligence was changeable; and this belief strengthened for some after the intervention. P4 and P5 moved to strong disagreement and P3 moved from mostly disagree to disagreement, all strengthening in their beliefs. P2 moved from disagree to mostly disagree, still maintaining belief but less so. P1 responded with disagree in the pre-study survey but did not complete the post-study survey.

S3 was an agreement statement on the ability to significantly change intelligence and is displayed in Table 20.

Table 20

*Group Changes from Pre to Post for TOI S3*

No matter who you are, you can significantly change your intelligence level.

|  | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| Pre- |  | 1 | 3 | 1 |  |  |
| Post- | 1 | 2 | 1 |  |  |  |

The group changes detailed in Table 20 reflected the support of the belief intelligence can be changed significantly.

Table 21 displays the shifts in mindset for individual participants.

Table 21

*Individual Participant Changes from Pre to Post for TOI S3*

No matter who you are, you can significantly change your intelligence level.

| Pre- | Post- |
|---|---|
| P1: Mostly Agree (3) | P1: No data |
| P2: Mostly Agree (3) | P2: Mostly Agree (3) * |
| P3: Mostly Disagree (4) | P3: Agree (2) * |
| P4: Agree (2) | P4: Strongly Agree (1) * |
| P5: Mostly Agree (3) | P5: Agree (2) * |

*Denotes score reflecting post-study beliefs of malleable intelligence.

Overall, participants agreed with the S3, intelligence can be significantly changed, as demonstrated in Table 21.  P3, P4, and P5 responded with either agreement or strong agreement in the post-study survey.  P2's opinion did not change.  P1 indicated disagreement in the pre-survey but did not complete the post-study survey.

Group responses to S4, displayed in Table 22, followed a similar pattern of responses.

Table 22

*Group Changes from Pre to Post for TOI S4*

To be honest, you can't really change how intelligent you are.

| | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| Pre- | | | | 2 | 3 | |
| Post- | | | | 1 | 2 | 1 |

Participants as a whole did not agree intelligence was resolute. The individual responses, noted in Table 23, continued to support a growth mindset as the participants revealed disagreement with S4, the inability to change intelligence.

Table 23

*Individual Participant Changes from Pre to Post for TOI S4*

To be honest, you can't really change how intelligent you are.

| Pre- | Post- |
|---|---|
| P1: Disagree (5) | P1: No data |
| P2: Disagree (5) | P2: Mostly Disagree (4) * |
| P3: Mostly Disagree (4) | P3: Disagree (5) * |
| P4: Disagree (5) | P4: Strongly Disagree (6) * |
| P5: Mostly Disagree (4) | P5: Disagree (5) * |

*Denotes score reflecting post-study beliefs of malleable intelligence.

All participants revealed, within Table 23, some level of disagreement with S4, indicating all participants believed intelligence was changeable. P3, P4, and P5 increased their levels of disagreement on the post-survey demonstrating a growth mindset. P2's pre-survey response disagreed with S4; the post-survey response was mostly disagreement, indicating movement away from a growth mindset. P1 also indicated disagreement but did not complete the post-study survey.

Group responses for S5 in Table 24 reflect changes from past responses.

Table 24

*Group Changes from Pre to Post for TOI S5*

You can always substantially change how intelligent you are.

| | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| Pre- | | | 4 | 1 | | |
| Post- | | 1 | 3 | | | |

The group responses, featured in Table 24, revealed movement toward more agreement with the statement in S5.

The responses to S5 revealed a change that is further detailed in Table 25.

Table 25

*Individual Participant Changes from Pre to Post for TOI S5*

You can always substantially change how intelligent you are.

| Pre- | Post- |
|---|---|
| P1: Mostly Agree (3) | P1: No data |
| P2: Mostly Agree (3) | P2: Mostly Agree (3) * |
| P3: Mostly Disagree (4) | P3: Mostly Agree (3) * |
| P4: Mostly Agree (3) | P4: Agree (2) * |
| P5: Mostly Agree (3) | P5: Mostly Agree (3) * |

*Denotes score reflecting post-study beliefs of malleable intelligence.

S5 reiterated the ability to change intelligence, though the wording was different than past statements with the inclusion of the adverb substantially rather than the adverb significantly. S5 also included the term always, which had not been presented thus far in statements. The change in responses, as evidenced in Table 25, though still indicating a growth mindset, varied when compared to the previous responses. P4 was the only initial growth mindset response that indicated increased agreement with the statement in S5. P3 moved into a growth mindset, but P2

and P5 maintained their initial agreement.  P1 also indicated agreement but did not complete the

post-study survey.

S6 introduced learning into the statement.  Table 26 highlights the comparative responses

for S6.

Table 26

*Group Changes from Pre to Post for TOI S6*

| | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| Pre- | | | 1 | 2 | 2 | |
| Post- | | | | 1 | 2 | 1 |

You can learn new things, but you can't really change your basic intelligence.

Table 26 presented the group's move toward stronger disagreement with the statement in

S6.

The level of disagreement with S6 is noted in Table 27 for the individual participants.

Table 27

*Individual Participant Changes from Pre to Post for TOI S6*

You can learn new things, but you can't really change your basic intelligence.

| Pre- | Post- |
|---|---|
| P1: Mostly Disagree (4) | P1: No data |
| P2: Disagree (5) | P2: Mostly Disagree (4) * |
| P3: Mostly Agree (3) | P3: Disagree (5) * |
| P4: Mostly Disagree (4) | P4: Strongly Disagree (6) * |
| P5: Disagree (5) | P5: Disagree (5) * |

*Denotes score reflecting beliefs of malleable intelligence.

All participant post-survey responses, disclosed in Table 27, indicated some level of

disagreement.  P4 increased in the level of disagreement, while P5 maintained disagreement. P3,

similar to previous responses, moved from agreement to disagreement, indicating a shift into a

growth mindset.  P2's pre-survey response disagreed with the statement; the post-survey response of mostly disagree, indicating less disagreement, reflected a movement away from a growth mindset.  P1 responded with mostly disagree on the initial survey but did not complete the post-study survey.

The researcher selected S7 to gauge participant beliefs regarding an innate degree of intelligence and whether it could be increased.  The group shift detailed in Table 28 supported an overall growth mindset belief that intelligence was a modifiable characteristic.

Table 28

*Group Changes from Pre to Post for TOI S7*

| | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| No matter how much intelligence you have, you can always change it quite a bit. | | | | | | |
| Pre- | | | 4 | 1 | | |
| Post- | 1 | 2 | 1 | | | |

While Table 28 showcased group responses to TOI S7, participant responses are viewed in Table 29.

Table 29 reflects the individual patterns that demonstrate support of a growth mindset.

Table 29

*Individual Participant Changes from Pre to Post for TOI S7*

| No matter how much intelligence you have, you can always change it quite a bit. |
|---|

| Pre- | Post- |
|------|-------|
| P1: Mostly Agree (3) | P1: No data |
| P2: Mostly Agree (3) | P2: Mostly Agree (3) * |
| P3: Mostly Disagree (4) | P3: Agree (2) * |
| P4: Mostly Agree (3) | P4: Strongly Agree (1) * |
| P5: Mostly Agree (3) | P5: Agree (2) * |

*Denotes score reflecting beliefs of malleable intelligence.

Participant responses to S7 were similar to other questions on changing intelligence. P4 and P5 increased the intensity of agreement. P3 shifted into a state of agreement, while P2 maintained intensity of agreement. P1 originally agreed with S7 but did not complete the post-study survey.

The final statement (S8) on intelligence referenced change in basic intelligence. Results are displayed in Table 30.

Table 30

*Group Changes from Pre to Post for TOI S8*

You can change even your basic intelligence level considerably.

| | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|------|------|------|------|------|------|------|
| Pre- | | | 5 | | | |
| Post- | 1 | 1 | 1 | 1 | | |

The post-survey, presented in the second row of Table 30, indicated most participants continued to reveal beliefs of malleable intelligence.

Individual responses to Item S8 are displayed in Table 31.

Table 31

*Individual Participant Changes from Pre to Post for TOI S8*

You can change even your basic intelligence level considerably.

|  | Pre- |  | Post- |
|---|---|---|---|
| P1: Mostly Agree (3) |  | P1: No data |  |
| P2: Mostly Agree (3) |  | P2: Mostly Disagree (4) |  |
| P3: Mostly Agree (3) |  | P3: Mostly Agree (3) * |  |
| P4: Mostly Agree (3) |  | P4: Strongly Agree (1) * |  |
| P5: Mostly Agree (3) |  | P5: Agree (2) * |  |

*Denotes score reflecting beliefs of malleable intelligence.

Table 31 revealed similar movement toward further agreement from P4 and P5, while P3 maintained intensity of agreement. P2 shifted out of agreement which indicated a movement into a fixed mindset on basic intelligence malleability. P1 originally agreed with the statement but did not complete the post-study survey.

The TOI scores indicated participants held more beliefs in which they felt intelligence was a trait that could be changed, which reflected an overall growth mindset. In most cases where changes occurred, the difference indicated a growth mindset, such as participant beliefs that intelligence is something over which one has control. Table 32 summarizes these data by displaying the increase in number of participants from pre- to post-study who agreed with statements supporting intelligence could be changed and the decrease in number of participants from pre- to post-study who did not agree with the statements supporting intelligence could not be changed.

Table 32

*Summary of Beliefs in Malleable Intelligence Comparison of Pre to Post*

Beliefs intelligence *can* be changed

| | Strongly | Agree | Mostly | Mostly | Disagree | Strongly |

| | agree | | agree | disagree | | disagree |
|---|---|---|---|---|---|---|
| Pre- | | 1 | 16 | 3 | | |
| Post- | 3 | 6 | 6 | 1 | | |

Beliefs intelligence *cannot* be changed

| | Strongly agree | Agree | Mostly agree | Mostly disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| Pre- | | | 2 | 6 | 12 | |
| Post- | | | | 4 | 6 | 6 |

The analysis of the TOI summary data in Table 32 indicated several participants increased in personal belief in the growth mindset. The overall TOI post-study scores indicated a growth mindset, which supported the data analysis thus far.

Table 33 reflects a summary of the individual TOI pre-survey scores.

Table 33

*TOI Pre-Survey Participant Scores*

| Growth Mindset Indications | |
|---|---|
| Ratio of pre-survey GM scores | Explanation |
| P1: 8/8 | All pre-study scores indicated growth mindset |
| P2: 8/8 | All pre-study scores indicated growth mindset |
| P3: 3/8 | Three pre-study scores indicated growth mindset |
| P4: 8/8 | All pre-study scores indicated growth mindset |
| P5: 8/8 | All pre-study scores indicated growth mindset |

The pre-study scores for P1, P2, P4, and P5, presented in Table 33, reflected some degree of a growth mindset. P3's responses reflected a growth mindset for only three statements in the pre-survey.

Table 34 represents a summary of the individual TOI post-survey scores.

Table 34

*TOI Post-Survey Participant Scores*

Growth Mindset Indications

| Ratio of post-survey GM scores | Explanation |
|---|---|
| P1: No data | No post-study scores |
| P2: 7/8 | Seven post-study score indicated growth mindset |
| P3: 8/8 | All post-study scores indicated growth mindset |
| P4: 8/8 | All post-study scores indicated growth mindset |
| P5: 8/8 | All post-study scores indicated growth mindset |

The post-survey scores displayed in Table 34 and most responses were overall indicative of a growth mindset. P2 did not reflect a growth mindset in one statement. P1 did not complete the post-survey.

The Confidence in One's Intelligence (CIOI) scale, often given with the TOI scale, consisted of three sets of statements where the participant chose which statement best described them and then choose from a 6-point Likert scale to report their intensity of confidence in personal intelligence. The question asked participants to identify how true the chosen statement was for them: 1 denoted very true for me, and 6 denoted sort of true for me. A low score corresponded to low confidence, and a high score corresponded high confidence. Unlike the PART survey, this instrument did not delineate exact high or low scores. Scores for the CIOI were used for comparison to TOI scores. Data from the CIOI were analyzed and then compared to the TOI.

The CIOI data were compiled from three sets of statements. Each set of statements had one statement that expressed confidence and one that expressed lack of confidence. Participants were asked to select a statement with which they agreed most and then select how true the statement was for them. Table 35 compares the pre- and post-study responses for CIOI Statement 1 (S1).

Table 35

*CIOI S1 Comparison*

| | Pre-study statement selected | Pre-study agreement statement | Post-study statement selected | Post-study agreement statement | Change in confidence |
|---|---|---|---|---|---|
| P1 | I *wonder* if I am intelligent. | True for Me | I *usually* think I'm intelligent. | True for Me | Increase in Confidence* |
| P2 | I *wonder* if I am intelligent. | True for Me | I *wonder* if I am intelligent. | True for Me | Maintenance in Lack of Confidence |
| P3 | I *usually* think I'm intelligent. | True for Me | I *usually* think I'm intelligent. | Very True for Me | Increase in Confidence* |
| P4 | I *usually* think I'm intelligent. | Very True for Me | I *usually* think I'm intelligent. | Very True for Me | Maintenance in Confidence* |
| P5 | I *usually* think I'm intelligent. | True for Me | I *usually* think I'm intelligent. | Very True for Me | Increase in Confidence* |

*Denotes increase or maintenance in confidence.

Confidence S1 asked participants to choose between confidence levels, and participant responses were displayed in Table 35. The results revealed an increase in confidence between pre- and post-study scores for P1, P3, and P5. P4 maintained very confident from pre- to post-study. P2 maintained a lack of confidence.

S2 focused on confidence with new work. Table 36 displays the pre- and post-study scores.

Table 36

*CIOI S2 Comparison*

| | Pre-study statement selected | Pre-study agreement statement | Post-study statement selected | Post-study agreement statement | Change in confidence |
|---|---|---|---|---|---|
| P1 | When I get new work in school, I'm *usually* sure I *will* be able to learn it. | True for Me | When I get new work in school, I'm *usually* sure I *will* be able to learn it. | True for Me | Maintenance in Confidence* |
| P2 | When I get new work in school, I *often* think I may *not* be able to learn it. | True for Me | When I get new work in school, I *often* think I may *not* be able to learn it. | True for Me | Maintenance in Lack of Confidence |
| P3 | When I get new work in school, I'm *usually* sure I *will* be able to learn it. | True for Me | When I get new work in school, I'm *usually* sure I *will* be able to learn it. | True for Me | Maintenance in Confidence* |
| P4 | When I get new work in school, I'm *usually* sure I *will* be able to learn it. | Very True for Me | When I get new work in school, I'm *usually* sure I *will* be able to learn it. | Very True for Me | Maintenance in Confidence* |
| P5 | When I get new work in school, I'm *usually* sure I *will* be able to learn it. | Very True for Me | When I get new work in school, I'm *usually* sure I *will* be able to learn it. | Very True for Me | Maintenance in Confidence* |

*Denotes maintenance in confidence.

Participant responses to confidence with new work, displayed in Table 36, revealed an increase in confidence with P2 from pre- to post-study scores. P4 and P5 maintained a high level of confidence between pre- and post-study scores, while P1 and P3 maintained medium level confidence scores.

The last confidence statement, S3, was related to confidence in intellectual ability. Table 37 compares participant responses.

Table 37

*CIOI S3 Comparison*

| | Pre-study statement selected | Pre-study agreement statement | Post-study statement selected | Post-study agreement statement | Change in confidence |
|---|---|---|---|---|---|
| P1 | I'm *not very* confident about my intellectual ability. | Very True for Me | I'm *not very* confident about my intellectual ability. | True for Me | Increase in Confidence* |
| P2 | I'm *not very* confident about my intellectual ability. | Sort of True for Me | I'm *not very* confident about my intellectual ability. | True for Me | Increase in Lack of Confidence |
| P3 | I feel *pretty* confident about my intellectual ability. | True for Me | I feel *pretty* confident about my intellectual ability. | Very True for Me | Increase in Confidence* |
| P4 | I feel *pretty* confident about my intellectual ability. | Very True for Me | I feel *pretty* confident about my intellectual ability. | Very True for Me | Maintenance in Confidence* |
| P5 | I feel *pretty* confident about my intellectual ability. | True for Me | I feel *pretty* confident about my intellectual ability. | True for Me | Maintenance in Confidence* |

*Denotes maintenance or increase in confidence.

Reponses for confidence in intellectual ability, exhibited in Table 37, revealed an increase in confidence for P3. Maintenance in confidence was demonstrated by P4 and P5. P2 indicated a decrease in confidence in intellectual ability. P1 revealed an increase in lack of confidence; moved from very true agreement with the lack of confidence statement to true.

Participant responses for CIOI varied depending on the focus of the confidence. Table 38 summarizes the findings.

Table 38

*CIOI Data Summary*

|    | Statement 1(S1) | Statement 2(S2) | Statement 3(S3) |
|----|-----------------|-----------------|-----------------|
| P1 | Increased in Confidence | Maintained Confidence | Increased in Confidence |
| P2 | Maintained Lack in Confidence | Maintained Lack in Confidence | Increase Lack in Confidence |
| P3 | Increased in Confidence | Maintained Confidence | Increased in Confidence |
| P4 | Maintained Confidence | Maintained Confidence | Maintained Confidence |
| P5 | Increased in Confidence | Maintained Confidence | Maintained Confidence |

For S1, three participants increased in confidence levels, one participant maintained confidence, and one participant maintained a lack of confidence. For S2, four participants maintained confidence levels and one participant maintained a lack of confidence. For S3, two participants increased in confidence levels, two participants maintained confidence levels, and one participant increased in their lack of confidence.

CIOI was a measurement used in conjunction with TOI. Dweck (2000) noted confidence measurements do not usually differ from the theory measurements in "how confident they are about their own attributes…before they encounter personal setbacks," and that theory (TOI) was often a stronger predictor of judgment "and actions than are people's feeling of confidence when they enter the situation" (p. 181).

Table 39 compares the TOI and CIOI data.

Table 39

*TOI/CIOI Comparison Data*

| | Theories of Intelligence Scale—Self Form | | Confidence in One's Intelligence | | |
|---|---|---|---|---|---|
| | Pre | Post | S1 | S2 | S3 |
| P1 | 8/8 | No data | Increased in Confidence | Maintained Confidence | Increased in Confidence |
| P2 | 8/8 | 7/8 | Maintained Lack in Confidence | Maintained Lack in Confidence | Increase Lack in Confidence |
| P3 | 8/8 | 8/8 | Increased in Confidence | Maintained Confidence | Increased in Confidence |
| P4 | 8/8 | 8/8 | Maintained Confidence | Maintained Confidence | Maintained Confidence |
| P5 | 8/8 | 8/8 | Increased in Confidence | Maintained Confidence | Maintained Confidence |

The TOI and CIOI data, detailed in Table 39, agreed with Dweck's (2000) explanation of analyzing confidence measure scores. P3's, P4's, and P5's data consistently indicated a growth mindset from the TOI surveys, which corresponded with maintenance or increase in confidence in intelligence and learning ability from the CIOI. P2's TOI data did not indicate a growth mindset for ability to change basic intelligence level considerably. P2's CIOI data revealed a lack of confidence in intelligence (S1) and a decrease in confidence in intellectual ability (S3). P1's pre-study TOI data indicated a growth mindset, though there were no post-study comparative data to confirm a growth mindset at the conclusion of the study. P1's CIOI data revealed an increase in confidence in intelligence, a maintenance in learning ability, and an increase in confidence statement for intellectual ability.

The Task-choice Goal Measure (TCGM) and Questionnaire Goal Choice Item (QGCI) scales were used to compare learning goals with performance goals in an effort to determine

participant preference to learn something (increase knowledge/learning goals) versus the desire to appear intelligent (good grades/performance goals). The TCGM was a multiple-choice sentence forced completion item with four choices in responses. The item began, "I would like to work on…." Participants were able to choose from four different choices reflecting different goals of effort. Choice 1 denoted problems that aren't too hard, so I don't get many wrong. Choice 2 denoted problems that I'll learn a lot from, even if I won't look so smart. Choice 3 denoted problems that are pretty easy, so I'll do well. Choice 4 denoted problems that I'm pretty good at, so I can show that I'm smart. Choices 1 and 3 were considered performance goals with no challenge; Choice 4 was considered a performance goal with challenge, and Choice 2 was considered a learning goal.

Table 40 displays participant results.

Table 40

*TCGM Pre- and Post-Study Comparison Data*

|  | Pre-study choice | Goal | Post-study choice | Goal | Change in goal |
|---|---|---|---|---|---|
| P1 | Problems that aren't too hard, so I don't get many wrong. | Performance with no challenge | Problems that aren't too hard, so I don't get many wrong. | Performance with no challenge | No change |
| P2 | Problems that I'll learn a lot from, even if I won't look so smart. | Learning | Problems that I'll learn a lot from, even if I won't look so smart. | Learning | No change |
| P3 | Problems that I'm pretty good at, so I can show that I'm smart. | Performance with challenge | Problems that I'll learn a lot from, even if I won't look so smart. | Learning | Moved to learning goal |
| P4 | Problems that I'll learn a lot from, even if I won't look so smart. | Learning | Problems that I'll learn a lot from, even if I won't look so smart. | Learning | No change |
| P5 | Problems that I'll learn a lot from, even if I won't look so smart. | Learning | Problems that I'll learn a lot from, even if I won't look so smart. | Learning | No change |

The data collected from the TCGM were analyzed and reported in Table 40. The pre-study data reflected three participants chose learning goals and two chose performance goals. The post-study data reflected a change from performance with challenge to learning goal for one participant (P3), a maintenance in learning goal for three participants (P2, P4, P5), and no change reported for the participant who registered a performance with no challenge (P1).

The QGCI included three 6-point Likert scale statements where participants selected responses from a scale where 1 denoted strongly agree and 6 denoted strongly disagree, regarding a statement on learning course content versus scoring well in a course. The fourth question was a force answer question that required participants to choose between getting a good

grade or being challenged in a course.  For the first two questions, a low score (between 1-3) was considered a performance goal focus; a high score (between 4-6) was considered a learning goal focus.  For Question 3, a low score (between 1-2) was considered a learning goal focus, while a high score (between 4-6) was considered a performance goal focus.  For QGCI, there was no medium range score.  Question 4 required the participants to choose between a learning goal (being challenged) or a performance goal (good grade).

Table 41 displays participant responses.

Table 41

*QGCI S1 Responses*

| If I knew I wasn't going to do well at a task, I probably wouldn't do it even if I might learn a lot from it. |
| --- |

| Pre | Post |
| --- | --- |
| P1: Mostly Disagree (4) | P1: Mostly Disagree (4) * |
| P2: Mostly Disagree (4) | P2: Mostly Agree (3) |
| P3: Disagree (5) | P3: Disagree (5) * |
| P4: Disagree (5) | P4: Strongly Disagree (6) * |
| P5: Strongly Disagree (6) | P5: Mostly Disagree (4) * |

*Denotes score reflecting learning goal focus.

S1 responses, listed in Table 41, reflected a learning goal (increasing knowledge) focus for all but P2, whose data reflected a shift from pre-study learning goal to post-study performance goal.  P4 showed the most movement toward a growth mindset moving from disagree to strongly disagree with the statement, reflecting a learning goal.  P1 and P3 maintained the same level of growth mindset, reflecting a learning goal.  P5 strongly disagreed at first but shifted to mostly disagree in the post-survey response; even as P5 reported less disagreement, learning goal was still reflected due to the shift in the direction of a growth mindset.

Table 42 displays participant responses for S2.

Table 42

*QGCI S2 Responses*

| Although I hate to admit it, I sometimes would rather do well in a class than learn a lot. | |
| --- | --- |
| Pre | Post |
| P1: Mostly Disagree (4) * | P1: Mostly Agree (3) |
| P2: Mostly Agree (3) | P2: Agree (2) |
| P3: Agree (2) | P3: Agree (2) |
| P4: Mostly Disagree (4) * | P4: Mostly Disagree (4) * |
| P5: Mostly Disagree (4) * | P5: Mostly Disagree (4) * |

*Denotes score reflecting learning goal focus.

The pre- and post-study responses to S2, shown in Table 42, revealed P4 and P5 maintained the same level of learning goals between the pre- and post-study responses. P2 and P3 maintained performance goals; P2 moved into a higher level of performance goal and P3 maintained the same level of performance goal. P1 had a pre-study response that reflected learning goals but a post-study response reflecting performance goals.

Table 43 reveals the responses for the final goal choice statement (S3).

Table 43

*QGCI S3 Responses*

| It's much more important for me to learn things in my classes than it is to get the best grades. | |
| --- | --- |
| Pre | Post |
| P1: Mostly Agree (3) | P1: Mostly Agree (3) * |
| P2: Mostly Disagree (4) | P2: Mostly Agree (3) * |
| P3: Mostly Disagree (4) | P3: Mostly Disagree (4) |
| P4: Mostly Agree (3) | P4: Mostly Disagree (4) |
| P5: Mostly Agree (3) | P5: Mostly Agree (3) * |

*Denotes score reflecting learning goal focus.

Reponses for S3, found in Table 43, indicated post-study learning goals for P1, P2, and P5; P2 moved from a performance goal to a learning goal, while P1 and P5 maintained the same level of learning goal. P3 maintained a performance goal between pre- and post-study responses, and P4 moved from a learning goal to a performance goal.

The QGCI data for S4 is displayed in Table 44.

Table 44

*QGCI S4 Responses*

| If I had to choose between getting a good grade and being challenged in class, I would choose… | | | |
| --- | --- | --- | --- |
| Pre- | | Post- | |
| "good grade" | P1, P2, P3, P4, P5 | "good grade" | P2, P3, P4 |
| | | "being challenged" | P5 |

As demonstrated in Table 44, the pre-study results reflected all participants preferred a performance goal. The post-study responses revealed all but P5 maintained performance goals. P5 chose a post-study response reflecting a learning goal. P1 did not complete the post-study survey.

**RQ2 Results**

**What is the impact of participating in academic risk-taking activities on student perceptions of error/failure in athletic training courses?** Participant perception of error was determined through qualitative data collected through surveys administered at the midpoint and end of the study. Table 45 displays the data matrix for RQ2.

Table 45

*RQ 2 Data Matrix*

How does participating in academic risk-taking activities affect students' perceptions of error/failure in the athletic training classroom?

| Tools/Instruments | Data collected | Data type | Method of analysis |
|---|---|---|---|
| Perception Survey Week 13 | All questions | Qualitative | Descriptive analysis of themes |
| Perception Survey Week 16 | Q1-5, 13-14 | Qualitative | Descriptive analysis of themes |

The data matrix in Table 45 delineated specifics the researcher required to collect the perceptual data to answer Research Question 2.

The midpoint survey (week 13) consisted of four open-ended questions where participants revealed their comfort utilizing skills in real-life situations, the impact of the growth mindset lesson on their thinking, and the influences to support changes in perceptions.

Table 46 reveals participant responses to the midpoint survey Q1.

Table 46

*Week 13 Perception Survey Q1*

How did you feel at the start of this semester about your ability to utilize course skills and knowledge in real life situations?

|  | Response |
|---|---|
| P1 | Nervous, shaky on skills. |
| P2 | I feel more confident in my skills. |
| P3 | I was overwhelmed and worried that I would not do well in real-life situations because I wasn't going to know all my knowledge. |
| P4 | I felt okay. As the semesters go on and the more I practice my skills and scenarios, I seem to feel more comfortable with them and my confidence slowly improves. |
| P5 | I was a little scared to perform the skills. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The participants were asked to respond to how they felt at the beginning of the semester

in their ability to utilize their clinical skills, and these responses were recorded in Table 46.

Upon analysis, the researcher gleaned that most participants felt nervous and overwhelmed in

their ability to perform skills due to uncertainty and lack of confidence.

Q2 of the week 13 perception survey is displayed in Table 47.

Table 47

*Week 13 Perception Survey Q2*

| How do you feel now about your ability to utilize course skills and knowledge after receiving the lesson on growth mindset? | |
| --- | --- |
| | Response |
| P1 | Better, more prepared. |
| P2 | I do not think that the lesson really helped. |
| P3 | I feel better but still sometimes am worried that I don't know enough. |
| P4 | I feel better. After doing the lesson, it made me realize critical thinking is key and knowing the situation and what needs to be done according to what is most important. |
| P5 | I wish I had more confidence, but I feel like I've learned more. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

During analysis of responses in Table 47, the researcher noted the majority of participant

responses to the first growth mindset lesson were positive, revealing a feeling of comfort after

the lesson.  The growth mindset lesson plan brought some comfort to the uncertainty of utilizing

clinical skills.

Table 48 reports the findings from Q3 of the week 13 perception survey.

Table 48

*Week 13 Perception Survey Q3*

| What has influenced this change if any? |
| --- |

<div align="center">Response</div>

P1 Working through scenarios.
P2 Practicing my skills.
P3 Repetitive practice in different ways from oral to written and even multiple choice.
P4 None.
P5 As the semester went on I knew I learned more but my confidence level is low still.

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Q3 requested additional information on how the participants felt about the first growth mindset lesson plan; participant responses were displayed in Table 48. The participants were asked to identify specific influences that led to changes in perception after the lesson plan. Analysis of the responses concluded that participants found practice working through the skills was the main contributor to the shift in perception.

Table 49 reveals participant responses to Q4, the definition of growth mindset.

Table 49

*Week 13 Perception Survey Q4*

| Please describe what you believe growth mindset is? |
| --- |

| | Response |
| --- | --- |
| P1 | When you grow better and are confident in the skill. |
| P2 | Growth mindset is the ability to grow and change what your initial mindset is, to become more confident. |
| P3 | Growth mindset is your ability to grow intellectually and to know that you can learn more. |
| P4 | I believe it is allowing your brain and the way you think to grow, and change based on how you have experienced situations in that past. |
| P5 | I think this is the ability to expand the amount of knowledge that you have. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Analysis of these responses, provided in Table 49, indicated a development of confidence and belief in the benefits of learning more and expanding from this knowledge.

The perception survey administered at the end of the research study was developed to gather participant data related to RQ2. Table 50 reveals participant responses on hard work contributing to an outcome (Q1).

Table 50

*Week 16 Perception Survey Q1*

| | Tell me about a time when hard work contributed to your desired outcome.  Please give as much explanation as possible. |
|---|---|

<u>Response</u>
P1   I worked hard in high school cross country in order to make it to state. I ran hard, every day and twice as much.
P2   No data
P3   I studied very hard, took practice quizzes, studied with preceptors and did everything to prepare myself for a very big test and I passed which is what I desired.
P4   There was a time when I was working on a group presentation and my partner wasn't putting forth effort, so I busted my tail to get my work done and in turn I got a better grade than he did because I worked hard to get it done.
P5   When I reviewed for my final exam, I passed and knew more than I expected.

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The participants provided examples of physical work, team work, and mental fortitude in the responses as noted in Table 50.  From analysis of the responses, the theme of effort and determination became evident to the researcher.

Q2 probed further into the topic investigated in the previous question and requested participant feelings when an outcome was achieved.  Participant responses are displayed in Table 51.

Table 51

*Week 16 Perception Survey Q2*

---

Can you describe how you felt during the time hard work contributed to your desired outcome? Please provide as much detail as possible.

---

<u>Response</u>

P1   Tired, driven, motivated.

P2   No data

P3   I felt very frustrated and stressed studying so hard because I felt like I had so much to know and not enough time or smarts to know it.

P4   It feels really good when your hard work pays off. It makes you feel accomplished and makes you feel good about yourself.

P5   I felt stressed, I didn't sleep, and I felt like I was not accomplishing anything.

---

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The researcher reviewed the data from Table 51 where participants revealed feelings of stress, fatigue, frustration, and finally elation upon completion of the work.

Participants were then asked to share their feelings when someone else showed success where they had personally struggled (Q3).

Table 52

*Week 16 Perception Survey Q3*

---

Please describe how you feel when you see others succeed at something you have difficulty doing?

---

<u>Response</u>

P1   So happy for others, and I hope they share that joy when others do well.

P2   No response.

P3   Mad

P4   It makes me frustrated because it makes me wonder why they're getting it and I'm not.

P5   I feel like I should have done better, I feel like I am not as smart if I see someone else succeed.

---

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The responses, recorded in Table 52, revealed a range of support for the other's successes, from empathy to frustration.  P5 revealed a personal reflection on intelligence.

The researcher shifted focus to participant feelings related to difficult tasks; Q4 questioned participants on preference for easy or hard tasks. Table 53 proffers the answers from participants regarding their preferences.

Table 53

*Week 16 Perception Survey Q4*

| In school, do you prefer to do things that are easy or hard? Please explain and give an example. |
| --- |

| | Response |
| --- | --- |
| P1 | Easier seems to be better. |
| P2 | No data |
| P3 | I like to get good grades, but I like to do the hard things because when I accomplish them I feel better. |
| P4 | I'd rather do things that are hard because I like a challenge. |
| P5 | I prefer things that are easy because then I feel more confident about my grade, I also prefer the harder things, so I can learn more even if my grade is poorly affected. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The participants expressed ease of tasks may increase confidence and good grades; but participants also expressed a desire for challenge, as noted in Table 53. P4 desired challenging tasks, while P3 and P4 expressed mixed feelings stating that they enjoyed easy tasks for confidence but still they desired a challenge. P1 felt easier tasks were better, and P2 chose not to respond.

Q5 requested information on participant beliefs about their own intelligence. Participant responses are displayed in Table 54.

Table 54

*Week 16 Perception Survey Q5*

| What do you believe about your intelligence and whether it can change or not? |
| --- |

| | Response |
| --- | --- |
| P1 | I think intelligence can change, for better or for worse. |
| P2 | No data |
| P3 | I believe I am intelligent and I can change it. |
| P4 | I believe intelligence can be changed as long as you work hard to attain it. |
| P5 | I think the more I learn the more my intelligence is increased. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

As noted in Table 54, those participants who responded reported beliefs that intelligence is malleable. The week 16 perception survey then revisited participant views on growth mindset. Responses to Q13 are listed in Table 55.

Table 55

*Week 16 Perception Survey Q13*

| Please explain whether you feel you have adopted a growth mindset during the course of this semester? Can you explain why you feel this way? |
| --- |

| | Response |
| --- | --- |
| P1 | I think that I have. I never thought I would work this hard in school or learn so much. |
| P2 | No data |
| P3 | I have adopted the growth mindset because I feel like I can do anything now. |
| P4 | I believe I did because I know that in order to grow as a student I need to grow my knowledge and my mind. |
| P5 | I think I have adopted mind growth because I feel like my intelligence has developed further. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The responses, seen in Table 55, revealed that all participants who completed the survey felt as if they had adopted a growth mindset over the course of the semester. Reasons for such

assertions included hard work, increased knowledge, and increased motivation in completing tasks.

The participants were asked again in Q14 to describe what they felt a growth mindset was. Table 56 displays responses for Q14.

Table 56

*Week 16 Perception Survey Q14*

| Please describe what you feel a growth mindset is. |
| --- |

| | Response |
| --- | --- |
| P1 | Expanding your knowledge. |
| P2 | No data |
| P3 | Growth mindset is the ability to learn more and know that you can learn anything you set your mind to. |
| P4 | I feel a growth mindset is deciding to complete challenge tasks to grow your mind and knowledge. |
| P5 | The ability to expand brain knowledge based off of what one learns and how they apply it. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Participants included responses such as learning and expanding knowledge and application of knowledge, as revealed in their responses in Table 56.

**RQ3 Results**

**What is the impact of participating in academic risk-taking activities in athletic training courses on student perceptions of preparedness in utilizing the course skills and knowledge in real-life situations?** Academic risk-taking perceptions were gathered using the midpoint and end perception surveys, specifically the midpoint survey Q1-3 and the end survey Q6-12. Table 57 displays the RQ data matrix.

Table 57

*RQ 3 Data Matrix*

What is the impact of participating in academic risk-taking activities in athletic training courses on students' perceptions of preparedness in utilizing the course skills and knowledge in real-life situations?

| Tools/Instruments | Data collected | Data type | Method of analysis |
|---|---|---|---|
| Perception Survey Week 13 | Q1-3 | Qualitative | Descriptive analysis of themes |
| Perception Survey Week 16 | Q6-12 | Qualitative | Descriptive analysis of themes |

The data matrix, displayed in Table 57, provided clarification for the researcher in displaying the results collected to answer Research Question 3.

The midpoint perception survey (week 13) asked participants to reveal feelings on preparedness when utilizing clinical skills. Table 58 reveals responses to Q1.

Table 58

*Week 13 Perception Survey Q1*

How did you feel at the start of this semester about your ability to utilize course skills and knowledge in real life situations?

| | Response |
|---|---|
| P1 | Nervous, shaky on skills. |
| P2 | I feel more confident in my skills. |
| P3 | I was overwhelmed and worried that I would not do well in real-life situations because I wasn't going to know all of my knowledge. |
| P4 | I felt okay. As the semesters go on and the more I practice my skills and scenarios, I seem to feel more comfortable with them and my confidence slowly improves. |
| P5 | I was a little scared to perform the skills. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The participants were asked to reveal how they felt at the beginning of the semester regarding ability to utilize their clinical skills. Upon analysis of the responses provided in Table

58, participants reported feeling nervous and overwhelmed about their ability to perform skills due to uncertainty.

Q2 of the week 13 perception survey which asked participants about utilizing course skills after learning about growth mindset is examined in Table 59.

Table 59

*Week 13 Perception Survey Q2*

| How do you feel now about your ability to utilize course skills and knowledge after receiving the lesson on growth mindset? |
|---|

| | Response |
|---|---|
| P1 | Better, more prepared. |
| P2 | I do not think that the lesson really helped. |
| P3 | I feel better but still sometimes am worried that I don't know enough. |
| P4 | I feel better. After doing the lesson, it made me realize critical thinking is key and knowing the situation and what needs to be done according to what is most important. |
| P5 | I wish I had more confidence, but I feel like I've learned more. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The majority of participant responses to the first growth mindset lesson were positive, revealing a feeling of comfort after the first lesson, as noted in Table 59. Analysis found the growth mindset lesson plan provided hope for some participants to balance the uncertainty of utilizing clinical skills.

Table 60 reports the findings of Q3 from the week 13 perception survey.

Table 60

*Week 13 Perception Survey Q3*

| What has influenced this change if any? |
|---|

<div align="center">Response</div>

| | |
|---|---|
| P1 | Working through scenarios. |
| P2 | Practicing my skills. |
| P3 | Repetitive practice in different ways from oral to written and even multiple choice. |
| P4 | None. |
| P5 | As the semester went on I knew I learned more but my confidence level is still low. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Q3 requested additional information from participants regarding the first growth mindset lesson plan. The participants were asked to provide details on what influenced any changes they felt after the lesson plan. Analysis of the responses helped the researcher conclude that practice working through the skills was a main contributor to participant reported changes.

The end survey questions, 6-12, questioned participants on utilizing skills and decision-making, feedback given through the course activities, and what influenced decisions. Table 61 displays the responses to Q6.

Table 61

*Week 16 Perception Survey Q6*

---

Please tell me how you felt about the feedback you received on the applied decision making activities in the second half of the course. Please provide as much as detail as possible.

---

<u>Response</u>

P1    I found it to be helpful and I remembered what my instructor told me when asked question again.

P2    No data

P3    I felt great because I had a really great teacher and it taught me a lot.

P4    I received good feedback and it made me feel good because it made me realize I can be a good decision maker.

P5    I really like the feedback I was given, it helped me to remember things I need to improve on.

---

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The participants were asked to provide how they felt about the intentional feedback the modification of instructional practices incorporated into the clinical classes. Responses reported in Table 61 included that the feedback was helpful and assisted in decision-making and improving content knowledge.

Table 62 displays participant responses on the utilization of course skills.

Table 62

*Week 16 Perception Survey Q7*

| How prepared do you feel in utilizing the course skills and knowledge in real-life situations? |
| --- |

| | Response |
| --- | --- |
| P1 | Fairly prepared, I think I would do well in the moment. |
| P2 | No data |
| P3 | Great. |
| P4 | I feel good about it. |
| P5 | I feel like I could be more prepared, but mostly in my confidence level. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Participant responses reflected overall preparedness in utilizing skills in real-life situations, as noted in Table 62.

Q8 further investigated preparedness and utilization of skills; participant responses are displayed in Table 63.

Table 63

*Week 16 Perception Survey Q8*

| How do you feel the new activities and lessons in the course have impacted how prepared you feel in utilizing the course skills and knowledge in real-life situations? |
| --- |

| | Response |
| --- | --- |
| P1 | They made me think harder when in scenarios. |
| P2 | No data |
| P3 | I feel more prepared then before in my clinical classes because I have new ways to think about things. |
| P4 | I think the activities helped. |
| P5 | I have not been in any situation where I need to apply the new activities. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

As seen in Table 62, participant responses to the course redesign and how the new activities prepared them in utilizing skills included provided different views for completing

tasks, increased effort to complete tasks, and an increase in preparedness.

Continuing with questions on the modifications of instructional practices, Q9 questioned participants on inclusion of choice in global assessments. Displayed in Table 64 are participant responses.

Table 64

*Week 16 Perception Survey Q9*

| How do you feel about the choices you were given in completing the global assessments in the second half of the semester? |
| --- |

| | Response |
| --- | --- |
| P1 | They were challenging but I had gained the knowledge to do them. |
| P2 | No data |
| P3 | Great because I did well. |
| P4 | I was given the choice to do a global or not and I chose to do one and it made me a better student for it. |
| P5 | I feel like I handled the situation the best I could after discussing the new material. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The participants communicated enjoyment with the choice as a way of allowing them to choose to be challenged, evidence of which can be seen in Table 64.

Additional detail was subsequently requested with Q10 on the choice factor of the assessments, and the responses are shown below in Table 65.

Table 65

*Week 16 Perception Survey Q10*

| | What impact did the ability to choose between one more challenging global or two less challenging globals have on your selection of globals during the semester? |
|---|---|
| | <u>Response</u> |
| P1 | Allow me to consider my options- how I felt on test day. |
| P2 | No data |
| P3 | I did great on the challenging global which boosted my confidence. |
| P4 | I chose a challenging global so that I could challenge myself and I feel like it paid off. |
| P5 | I felt like I wanted to choose the more challenging global for my benefit, but I also wanted to choose the easy one just to compare. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

After observing the data in Table 65, the researcher noted the responses were similar to those of Q9, as participants felt the choices allowed them to challenge themselves.

Participants were asked how they felt about their choices in choosing their global assignments in Q11; responses are displayed in Table 66.

Table 66

*Week 16 Perception Survey Q11*

---

Why do you feel you chose the way you did when making the selection between one more challenging global or two less challenging globals?

---

Response

P1   I wanted to be challenged while still obtaining a good grade. Studying before allowed me to choose the harder and still be successful.

P2   No data

P3   Because I like to challenge myself especially knowing that I couldn't really fail, and I am smart.

P4   Because I wanted to challenge myself to see if I really was a good decision maker.

P5   I made my selection based off of the teacher's reaction, but I wanted to choose the more challenging one.

---

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

The researcher determined, using data from Table 66, that participants revealed more enjoyment with being able to challenge themselves with the choices.

The final question (Q12) focused on the choice aspect of the modification of instructional practices and questioned the participants on factors they felt determined their choices.  Table 67 reveals participant responses for Q12.

Table 67

*Week 16 Perception Survey Q12*

| | |
|---|---|
| What factors determined your choice in selection of the globals? | |

<u>Response</u>

| | |
|---|---|
| P1 | Learning, my grade. |
| P2 | No data |
| P3 | I do not like to take the easy way out. |
| P4 | Knowing that I needed to know the skills and be able to apply them for when it happens in the real world. |
| P5 | how I was feeling, and what mood the teacher was in. |

*Note.* Answers have been edited to reflect correct grammar/spelling/punctuation.

Responses, delineated in Table 67, included learning, challenge, desire to be prepared, and environmental factors such as the teacher's mood.

Chapter 4 reported the data collected and the analysis performed during the research study. Chapter 4 was organized by research question and provided data collected to investigate each research question. Chapter 5 provides a discussion, interpretation, and conclusion of the data analysis.

**Chapter 5: Discussion**

Chapter 5 includes conclusions of the study, implications for practice, limitations of the research study, and suggestions for future research.

This action research case study was established to explore the impact of the facilitation of growth mindset through modification of instructional practices in athletic training clinical courses at the Institution of Higher Learning. The researcher's responsibilities included development and employment of the research procedures, collection and analysis of data, and service as a course instructor in the ATP who provided a supportive environment conducive to learning and growing. The impact of a modification of instructional practices on participant academic risk-taking tendencies and growth mindsets were investigated. A platform was provided for participants to share perspectives on the impact of the modifications, on making errors in the classroom, and on utilizing course skills. The overarching research question the researcher sought to answer was, "What is the impact of facilitation of growth mindset through modification of instructional practices in athletic training clinical courses at a private university in the southeast?" Specifically,

1. What is the impact of implementing academic risk-taking activities on student scores on academic risk-taking and growth mindset measures?

2. What is the impact of participating in academic risk-taking activities on student perceptions of error/failure in athletic training courses?

3. What is the impact of participating in academic risk-taking activities in athletic training courses on student perceptions of preparedness in utilizing the course skills and knowledge in real-life situations?

**Summary of Conclusions**

 **Conclusions from RQ1.** The purpose of the first research question was to investigate the impact of the facilitation of growth mindset through modifications in instructional practices to support academic risk-taking of the participants. The modifications included the implementation of two growth mindset lessons to introduce the mindset concept and familiarize participants in identification and utilization of the growth mindset. Applied decision-making exercises and the inclusion of choice in difficulty level during established global assessments were employed to meet the conditions required to support academic risk-taking in the classroom, as suggested by Clifford (1990). An environment supportive of error in learning and exploration of learning was also constructed by means of participant and instructor sharing, discussion, and acknowledgement of mistakes and the part error played in the learning process.

 The PART survey was utilized to evaluate academic risk-taking tendencies of the participants before and after the modifications. Multiple growth mindset instruments (Theories of Intelligence—Self Form, Confidence in One's Intelligence, Task-choice Goal, and Questionnaire Goal Choice) were also administered before and after modifications to evaluate growth mindset measures.

 Upon analysis of the PART survey data, the researcher discovered all participants were initially categorized as having a medium level of academic risk-taking tendencies, and one participant shifted from a medium to high level of academic risk-taking tendencies by the conclusion of the study. One participant experienced slight increases in academic risk-taking tendencies in the medium category, and one participant experienced a slight decrease in academic risk-taking tendencies in the medium category over the course of the study.

 Growth mindset was assessed using several measurements, and the data collected

revealed several findings. The Theories of Intelligence Scale—Self Form (TOI) investigated participant ideas about intelligence and whether intelligence was perceived as a malleable or fixed/inborn trait. The data from the TOI indicated four of the five participants moved from a fixed mindset to a growth mindset, and all participants displayed some level of growth mindset in terms of believing intelligence could be increased with effort and learning. The study participants all indicated a belief in control over intelligence as a malleable trait which reflects a growth mindset.

The Confidence In One's Intelligence Scale (CIOI) was used in conjunction with the TOI. Analysis of results indicated that participants who adapted a growth mindset also displayed confidence in intelligence. Examining the literature where citation of Dweck's (2006) CIOI and TOI has been utilized, findings were varied. O'Shea, Cleary, and Breen (2010) "found that an individual's level of confidence but not his theory of intelligence played an important role in how he approached, persevered with and performed on a task" (p. 151); though other studies found confidence levels made less of a difference in response to achievement (Hong, Chiu, & Dweck, 1995). Participants increased their feelings of confidence in intelligence and maintained confidence in problem-solving ability but split in feelings of increased versus maintained confidence over the course of the study when selecting statements on beliefs of intellectual ability.

Task-choice Goal Measure (TCGM) and Questionnaire Goal Choice Item (QGCI) explored participant tendencies towards performance versus learning goals. The data revealed all participants possessed moderate levels of desire for performance goals (looking smart) versus learning goals (increasing knowledge) during the study. The post-study data collected through the TCGM revealed four of the five participants made the decision to choose "Problems that I'll

learn a lot from, even if I won't look so smart," which demonstrated desires related to learning goals.  Though this finding from the TCGM was promising, as it triangulated with other data indicating that participants had adopted a growth mindset, the QGCI data revealed conflicting desires from the participants.  The desire to obtain a good grade (performance goal) was confirmed with the findings of the forced answer statement (S4) of the QGCI where three of four participants selected the "good grade" post-survey response to the statement, "If I had to choose between getting a good grade and being challenged in class, I would choose…."  Data investigating why participants demonstrated conflict between the TCGM and QGCI S4 responses were not collected.

Qualitative data were collected through the use of PART survey Items 13-16.  The data collected revealed that participants placed importance on allowing individual opinions in classroom discussion and using positive methods for sharing and considering other opinions. One participant responded, "I believe that a good conversation about the right answer is always good," while another commented, "Peers may have their own opinion.  It's just up to compromising so that everyone's views are expressed."  Participants voiced that approaching uncertain situations with creativity translated into increased interest in the subject area and revealed new ideas; however, participants also communicated understanding that change in mindset and usage of creativity was hard for some, and approaching situations creatively was equally challenging.

Valuable perspective data on the instructor's role in assessing participation in courses were revealed.  Participant responses indicated participation should encompass contribution of personal thoughts and the demonstration of effort and attention by students in classroom discourse rather than providing right or wrong answers.  Analysis of the qualitative data

triangulated with the quantitative data, revealing participant thoughts on academic risk-taking activities. The participants shared comments of support of a classroom environment where collegial discourse and active participation were welcomed and supported.

The participants acknowledged students experienced reservation when sharing opinions that differed with those of the instructor due to instructor influence over course participation grading. One participant perceived that expressing a different opinion from that of the instructor could lead to retaliation causing discomfort for the student, reducing the likelihood of sharing in the future.

*Connection to literature.* Three conditions must be met in order for academic risk-taking to occur: providing choice with varied levels of difficulty, awarding points consistent with level of difficulty (positive correlation between difficulty and point awarded), and providing an environment supportive of errors during the learning process (Clifford, 1990). The applied decision-making activities used during the study provided multiple opportunities for the participants to make decisions and receive immediate feedback in an environment supportive of discussion during decision-making, and mistakes were welcomed as part of the learning process rather than the result of incompetence. The instructional practice was supported by the research of Klein et al. (2017) on the growth mindset in practicing error. As suggested by Crum (2012), educating participants in growth mindset before and during the administration of academic risk-taking supported the participants by modifying their understanding of the activities as a process in learning and not a product of learning. Allowing participants some choice regarding assessments provided an opportunity for participants to build confidence and to view challenge as a means of improving skills (Klein et al., 2017).

*Implication of findings.* Participants reported increased alignment with the growth

mindset and increased tendency to take academic risks after the modifications of instructional practices. The findings supported the inclusion of academic risk-taking activities and opportunities for assessment choice in the higher education classroom. Increased academic risk-taking and development of a growth mindset are achieved through minor yet significant adjustments in lesson planning and classroom instruction, such as assessment choice and classroom instruction on growth mindset as part of the class curriculum.

**Conclusions from RQ2.** Perceptual data were collected from the participants to determine the impact of academic risk-taking activities employed by the modification of instructional practices on error/failure. The responses revealed participants felt nervousness and discomfort at the beginning due to fear of failure or fear of error. Upon post-study collection, participant responses migrated toward comfort, though confidence was still lacking for some participants. One participant reported concern with having to know a large amount of course content.

Participants recounted that growth mindset lessons administered at both the beginning and during the study were helpful in surfacing the importance of critical thinking and feeling more prepared to utilize critical-thinking skills. The lessons emphasized that correct answers are not always necessary and detailed the nature of each question which could have led to participant feelings of preparedness. Despite the positive responses, confidence was mentioned as a concern. Positive changes in participant perspectives in their increased ability to utilize course skills were contributed to practicing in different formats. The use of the perception surveys confirmed participant understanding of growth mindset.

Participants shared perspectives of personal experience dealing with challenging work and accomplishment. Responses revealed feelings of motivation, frustration, and stress followed

by elation when an outcome was achieved. Participants were asked to share how they felt when others around them succeeded even while they struggled. Various responses were provided. One participant expressed that it made her mad, while another was happy to see others succeed; these responses acknowledged the conflict-between desire to celebrate others' successes while maintaining the personal struggle to succeed.

The week 16 perception survey visited the concept of performance and learning goals, and mixed results were obtained. One participant preferred less challenging work, and three acknowledged they considered grades but still desired challenging tasks. These data were triangulated in RQ1 data collection. The survey also triangulated beliefs on intelligence data. Participants again reported a belief in the ability to change their level of intelligence.

*Connection to literature.* Klein et al. (2017) recommended using feedback and discussion to convey effort in critical thinking. Findings in the present study supported these recommendations. Eva (2009) noted that acknowledgement of error in explanation of decisions further supported students in learning from mistakes before contact with a patient. In this study, exercises used were paper based and simulated, as varied formats were suggested and supported in the literature (Eva, 2009). In addition, Klein et al. further recommended that students be able to make errors in safe settings, such as the classroom, in order to prepare them for the unavoidability of error in the workforce. It was also important to share errors as another support for developing and maintaining a growth mindset (Eva, 2009; Klein et al., 2017).

*Implication of findings.* One growth mindset lesson improved participant feelings of preparedness and was helpful in utilizing skills and critical thinking. There is a need to provide opportunities for critical thinking and to understand critical thinking does not automatically equate to correct answers. Error and incorrect answers can result in decreased confidence and

less academic risk-taking (Klein et al., 2017). In order to build student confidence, it is important to support the process of critical thinking, which means mistakes will be made as part of that process. Punishing academic risk-taking with poor grades leads to diminished desire to take academic risks while exploring ways to find the correct answer. Rather than punishing mistakes, using group discourse to explore decisions and accompanying discourse with immediate feedback when facilitating those discussions further supported the process of learning.

**Conclusions from RQ3.** Perceptions of preparedness in skill utilization after the implementation of academic risk-taking activities was investigated in RQ3. Participants commented on the feedback component and the choice in assessment as important factors contributing toward their feelings of control over their learning. Comments on the challenging nature of the activities were preferred, along with participant reports that challenge was helpful in gaining and applying knowledge. When provided with options to partake in less challenging assessments, participants who responded also revealed the desire to be challenged.

***Connection to literature.*** The implication of failure was evident in the findings of the present study. Even when participant growth mindset and academic risk-taking measures improved, data reported participant concerns of preparedness or being correct in judgment, revealing participant self-doubt. Performance of skills in varied environments is essential in preparing students in medical fields (Eva, 2009). Upon receipt of the growth mindset lessons and given opportunities to make decisions without penalty, participants reported increased comfort in skill utilization. Crum (2012) reported stress and anxiety can be utilized as a tool for motivation if students are prepared in the classroom.

***Implication of finding.*** These findings demonstrated that when students feel prepared through classroom activities and have an understanding of the growth mindset, the desire to be

challenged through the learning process is present.

**Overall Implications for Practice**

Academic risk-taking research is supported by Clifford's (1984) theory on constructive failure along with Dweck's (1986) motivational processes theory and Dweck's (2006) growth mindset research.  The concepts of academic risk-taking and growth mindset are far from novel instructional practices, although true implementation of these practices is consistently absent in current classrooms (Clifford, 1990).  Athletic training programs are tasked with preparing students for ever changing medical practices and environments (Eva, 2009; Jegathesan et al., 2016; Klein et al., 2017).  It is imperative that students are able to apply knowledge in many different forms and environments.  In traditional educational practice, there is often only one right answer and very few formative assessments that allow for academic risk-taking without punishment (Eva, 2009; Klein et al., 2017).  It is inevitable that students will encounter error during their educational pursuits; therefore, exposure to error and being proactive in critical thinking and problem solving is best initiated in the classroom (Crum, 2012; Eva, 2009).

The findings of this case study revealed that even small adjustments to instructional practices generated improvements in participant views of their abilities and responses to challenging situations.  When participants were provided with immediate feedback during applied decision-making activities, they reported the feedback helpful and supportive in critical thinking.  Allowing small choice in challenging situations provided ownership for the participants, which in turn resulted in the selection of challenging activities.  Small classroom adjustments to allow for formative participation opportunities where accuracy was not the focus were successful at providing participants with supportive environments where learning was not feared, and knowledge was the primary objective.  As noted by Crum (2012), problem-focused

coping where students adapt to altering the situation and their responses to such situations is best achieved with immediate feedback and discourse.

The researcher suggests applying the instructional methods utilized in the present research study, such as academic risk-taking activities through formative activities where the focus of the outcome is to increase learning rather than accuracy.  It is also suggested that lessons where growth mindset is introduced and encouraged be implemented in all course offerings. This study demonstrated that increases in growth mindset were evident with only two lessons, but these findings are also documented in other growth mindset literature (Crum, 2012).  Though the findings of the current case study are generalizable to similar environments, the modifications in instructional practices the study utilized can be implemented in other fields in an effort to produce similar results and compare data.

## Limitations and Delimitations

**Limitations.**  Though selection of the research design was purposeful, bias must be acknowledged due to the researcher's dual role as both instructor and researcher.  Action research, where the impact of instructional practices is evaluated by those taking the action, has an inherent bias (Zuniga-Urrutia, 1992).  Bias was acknowledged and avoided by the researcher when interacting with the participants; though even with steps taken, interaction could have impacted participant decisions and responses.  The researcher, as an instructor, was close to the study and attempted to limit biases in the data analysis by avoiding assumptions while attempting to capture the unique complexities of the classroom (Merriam, 1998).  Furthermore, the case study design was appropriate for the present study in order to capture the data for a discrete time; findings of case studies are harder to generalize to the broader population (Merriam, 1998).  In addition, the small number of participants was also a limitation.  The homogeneous population

was an additional limitation, as all participants identified as Caucasian/White females.

    **Delimitations.** A delimitation of the current study was the administration of the perception survey questions electronically rather than through individual interviews. This decision was due to the researcher also acting as an instructor of the course. The researcher worked to avoid pressuring the participants of the study to modify their responses given the student-teacher relationship. The researcher avoided the use of interviews to maintain anonymity, reducing the perception that answers to survey questions impacted course grades or academic relationships. The brief time frame of the study allowed for an initial exploration of the modification of instructional practices during the 8-week period; due to the structure of the semesters, the time frame is also a delimitation of the study.

**Suggestions for Future Research**

    The researcher proposes the following recommendations for future research. Action research addresses a specific population at a specific time; therefore, to increase generalization of the findings, the study should be conducted on a larger scale and over a longer period of time. Due to the researcher's career as an educator in athletic training and desire to improve learning and better prepare athletic trainers in the field, the researcher conducted the present study in a specific program and thus the findings were unique to this branch of the health-care field. Reproducing the study in other health-care fields would allow for greater generalizability. The findings of this study revealed that even when participants have adapted a growth mindset and have tendencies to take academic risks, there is still a desire to perform well academically rather than attempt to increase one's knowledge. A perspective study on understanding why this conflict exists and ways to address and decrease the conflicting desires of performance over learning is recommended.

**References**

Alanazy, S. M. (2011). *Research methods and statistical techniquest employed by doctoral dissertations in education* (Master's thesis). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 1497403)

Anonymous. (2011). *Understanding intellectual risk taking*. Retrieved from http://assets.pearsonschoolapps.com/playbook_assets/Understanding%20Intellectual%20 Risk%20Taking.pdf

Auten, M. (2013). *Helping foster a growth mindset in community college classes* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 3591125)

Badger, E. H. (2009). *The influence of risk taking on student creation of mathematical meaning: Contextual risk theory* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 1738)

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *The Psychological Review, 84*(2), 191-215.

Beghetto, R. A. (2009). Correlates of intellectual risk taking in elementary school science. *The Journal of Research in Science Teaching, 46*(2), 210-223.

Board of Certification. (2017). *About us.* Retrieved from www.bocatc.org/

Brysacz, L. (2017). *Ready, set, succeed! Growth mindset instruction in a community college success class* (Doctoral dissertation). (UMI No. 10271718)

Chae, S. J., Kim, M., & Chang, K. H. (2016). Longitudinal analysis of the effect of academic failure tolerance on academic achievement fluctuation in medical school students. *Korean Journal of Medical Education, 28*(1), 25-28.

Clifford, M. M. (1984). Thoughts on a theory of constructive failure. *Educational Psychologist, 19*(2), 108-120.

Clifford, M. M. (1988). Failure tolerance and academic risk-taking in ten- to twelve-year-old students. *British Journal of Educational Psychology, 58*, 15-27.

Clifford, M. M. (1990). Students need challenge, not easy success. *Educational Leadership, 48*(1), 22-26.

Clifford, M. M. (1991). Risk taking: Theoretical, empirical, and educational considerations. *Educational Psychologist, 26*(3-4), 263-297.

Clifford, M. M., & Chou, F. C. (1991). Effects of payoff and task context on academic risk taking. *Journal of Educational Psychology, 83*(4), 499-507.

Clifford, M. M., Chou, F. C., Mao, K.-N., Yun Lan, W., & Kuo, S.-Y. (1989). Academic risk taking, development, and external constraint. *The Journal of Experimental Education, 59*(1), 45-64.

Clifford, M. M., Yun Lan, W., & Chang Chou, F. (1989). Aademic risk-taking: Developmental and cross-cultural observations. *The Journal of Experimental Education, 57*(4), 321-338.

Commission on Accreditation of Athletic Training Education. (2017). *Becoming an athletic trainer.* Retrieved from https://caate.net/public/

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: SAGE.

Creswell, J. W., & Clark, V. L. (2007). *Designing and conducting mixed methods research.* Thousand Oaks, CA: SAGE.

Crum, A. J. (2012). *ReThinking stress: The role of mindsets in determining the stress response* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 3525239)

Dawson, K., & Kumar, S. (2014). An analysis of professional practice Ed.D. dissertations in educational technology. *TechTrends, 58*(4), 62-72.

Dweck, C. S. (1986). Motivational processes affecting learning. *Journal of American Psychologist, 41*(10), 1040-1048.

Dweck, C. S. (2000). *Self-theories: Their role in motivation, personality, and development.* New York, NY: Psychology Press.

Dweck, C. S. (2006). *Mindset: The new pscyhology of success* (Updated ed.). New York: Ballantine Books.

Ettenson, R. T., & Coughlin, R. C. (1982). Effects of type of payoff and instructions on individual risk-taking behavor. *Psychological Reports, 51*, 855-860.

Eva, K. W. (2009). Diagnostic error in medical education: Where wrongs can make rights. *Advances in Health Science Education, 14*, 71-81. doi:10.1007/s10459-009-9188-9

Foss, S., K., & Waters, W. (2016). *Destination dissertation: A traveler's guide to a done dissertation* (2nd ed.). Lantham, MD: Rowman & Littlefield.

Grimes, L. (1981). Learned helplessness and attribution theory: Redefining children's learning problems. *Learning Disability Quarterly, 4*(1), 91-100. doi:10.2307/1510719

Harter, S. (1978). Pleasure derived from challenge and the effects of receiving grades on children's difficulty level choices. *Child Development, 49*(3), 788-799. doi:10.2307/1128249

Heinerichs, S., Vela, L. I., & Drouin, J. M. (2013). A learner-centered technique in clinical reasoning, reflection, and case presentation attributes in athletic training students. *Journal of Athletic Training, 48*(3), 362-371.

Hong, Y., Chiu, C., & Dweck, C. S. (1995). Implicit theories of intelligence. In M. H. Kernis (Ed.), *Efficacy, Agency, and Self-Esteem* (pp. 197-216). Boston, MA: Springer.

House, D. J. (2003). *An investigation of the effects of gender and academic self-efficacy on academic risk-taking for adolescent students* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 3066174)

Jegathesan, M., Vitberg, Y. M., & Pusic, M. V. (2016). A survey of mindset theories of intelligence and medical error self-reporting among pediatric housestaff and faculty. *BMC Medical Education, 16*(58), 1-4. doi:10.1186/s12909-016-0574-8

Jones, E. (2012). Giving ourselves permission to take risks. *Exchange Magazine, 34,* 46-51.

Kemmis, S., & McTaggart, R. (2005). The sage handbook of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Participatory action research: Communicative action and the public sphere* (3rd ed., pp. 559-604). Thousand Oaks, CA: SAGE.

Kim, A., & Clifford, M. M. (1988). Goal source, goal difficulty, and individual difference variables as predictors of responses to failure. *British Journal of Educational Psychology, 58*(1), 28-43. doi:10.1111/j.2044-8279.1988.tb00876.x

Klein, J., Delany, C., Fisher, M. D., Smallwood, D., & Trumble, S. (2017). A growth mindset approach to preparing trainees for medical error. *BMJ Quality & Saftey, 26*, 771-774. doi:10.1136/bmjqs-2016-006416

Kunkel, L. E. (2016). *Athletic training student perceptions of preceptor learner-centeredness during clincial experience* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 10128052)

Laerd. (n.d.). Ordinal logistic regression. Retrieved from https://statistics.laerd.com/premium/spss/olr/ordinal-logistic-regression-in-spss.php

Maneesri, K. (1990). *Feedback, future use, and payoff increments as determinants of academic risk taking* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 303865677)

Marshall, C., & Rossman, G. B. (1999). *Designing qualitative research* (3rd ed.). Thousand Oaks, CA: SAGE.

Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass Publishers.

Mikulincer, M. (1988). Reactance and helplessness following exposure to unsolvable problems. *Journal of Personality and Social Psychology, 54*(4), 679-686.

Monaco, M., & Martin, M. (2007). The millennial student: A new generation of learners. *Athletic Training Education Journal, 2*(Apr-Jun), 42-46.

National Athletic Trainers' Association. (2017). Athletic training. Retrieved from https://www.nata.org/about/athletic-training

National Science Foundation. (1997). User-friendly handbook for mixed method evaluations. Retrieved from https://www.nsf.gov/pubs/1997/nsf97153/

O'Shea, A., Cleary, J., & Breen, S. (2010). *Exploring the role of confidence, theory of intelligence, and goal orientation in determining a student's persistence on mathematical tasks.* Paper presented at the Proceedings of the British Congress for Mathematics Education, Manchester University.

Parrish, S. (2015). Carol Dweck: A summary of the two mindsets and the power of believing that you can improve.  Retrieved from https://www.fs.blog/2015/03/carol-dweck-mindset/

Pierre, Y. (2015). Academic risk-taking in higher education. Retrieved from http://digitalcommons.fiu.edu/cgi/viewcontent.cgi?article=1428&context=sferc

Ponticell, J. A. (2003). Enhancers and inhibitors of teacher risk taking: A case study. *Peabody Journal of Education, 78*(3), 5-24.

Ravitch, S. M., & Riggan, M. (2016). *Reason & rigor: How conceptual frameworks guide research [Kindle e-book]* (Vol. 2nd). Thousand Oaks, CA: SAGE.

Reina, D., Reina, M., & Hudnut, D. (2017). *Why trust is critical to team success*. Retrieved from https://www.ccl.org/wp-content/uploads/2017/05/why-trust-is-critical-team-success-research-report.pdf

Ridenour, C. S., & Twale, D. J. (2005). Academic generations exploring intellectual risk taking in an educational leadership program. *Education, 126*(1), 158.

Risk. (2017). *Merriam-Webster.com.* Retrieved from https://www.merriam-webster.com/dictionary/risk

Robinson, L. E. (2012). *Academic risk-taking in an online environment* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 3510506) Retrieved from http://ezproxy.gardner-webb.edu/login?url=http://search.ebscohost.com.ezproxy.gardner-webb.edu/login.aspx?direct=true&db=psyh&AN=2013-99030-244&site=eds-live.

Robinson, L. E., & Bell, A. (2012). *Exploring adult risk propensity and academic risk-taking within the online learning environment.* Paper presented at the Adult Education Research Conference, Saratoga Springs, NY.

Sagor, R. (2000). *Guiding school improvement with action research*. Alexandria, VA: Association for Supervision and Curriculum Development.

Schunk, D. H. (1989). Self-efficacy and achievement behavior. *Educational Psychology Review, 1*, 173-208.

Sharma, S. (2015). Promoting risk taking in mathematics classrooms: The importance of creating a safe learning environment. *The Mathematics Enthusiast, 12*(1), 290.

Somekh, B. (2006). *Action research: A methodology for change and development*. Maidenhead, Berkshire England: Open University Press.

Van Ost, L., Feirman, K. L., & Manfre, K. (2017). *Athletic training exam review* (6th ed.). Thorofare, NJ: SLACK.

Wagner, T. (2012). *Creating innovators: The making of young people who will change the world*. New York: NY: Scribner.

Wortman, C. B., & Brehm, J. W. (1975). Responses to uncontrollable outcomes: An intergration of reactance theory and the learned helplessness model. *Advances in Experimental Social Psychology, 8*, 277-336.

Zambo, D. (2011). Action research as signature pedagogy in an education doctorate program: The reality and hope. *Innovative Higher Education, 36*(4), 261-271.

Zuniga-Urrutia, X. (1992). *Views and issues in action research* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Database. (UMI No. 9303847)

Appendix A

Fixed and Growth Mindset Infographic Permission

June 15, 2018

Dear Mr. Nigel Holmes,

I am completing a doctoral dissertation at ██████████████████ entitled Learning from Failure: A Case Study on Developing Growth Mindset Through Academic Risk-Taking in an Athletic Training Program. I would like your permission to reprint your Two Mindsets graphic used in the Farnam Street blog, "Carol Dweck: A Summary of The Two Mindsets And The Power of Believing That You Can Improve"

The excerpts to be reproduced/adapted are: graphic only "Two Mindsets, Carol S. Dweck, Ph.D."

My dissertation will be produced electronically and made available through the ████████████████ Library and its publication partners. I am requesting permission to include the excerpts in current and future revisions and editions of my dissertation, and to grant others the right to reproduce my entire dissertation, including the excerpts described above, for educational, non-commercial purposes. These rights will in no way limit republication of the material(s) in any other form by you or others authorized by you. I am currently in the post-proposal, pre-defense phase of the dissertation; therefore, the title of my dissertation may change from the above title if needed. I will provide you with a copy of the final dissertation at your request.

Your signing will verify that ███████████████████████████████████ you are granting permission to use such material(s).

If this meets with your approval, please electronically sign this letter below and return it to me at your earliest convenience. Thank you very much for your time and consideration.

*Sincerely, B. Rabe*

Sarah B. Rabe, M.S., LAT, ATC

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

_____
Mr. Nigel Holmes

6/20
18

NIGEL HOLMES
205 Compo Rd. S.
Westport, CT
06880

Appendix B

Theories of Intelligence Scale—Self Form Adult

**Theories of Intelligence Scale—Self Form Adults**

This questionnaire has been designed to investigate ideas about intelligence. There are no right or wrong answers. We are interested in your ideas.

Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements by writing the number that corresponds to your opinion in the space next to each statement.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Strongly Agree | Agree | Mostly Agree | Mostly Disagree | Disagree | Strongly Disagree |

_____ You have a certain amount of intelligence, and you can't really do much to change it.

_____ Your intelligence is something about you that you can't change very much.

_____ No matter who you are, you can significantly change your intelligence level.

_____ To be honest, you can't really change how intelligent you are.

_____ You can always substantially change how intelligent you are.

_____ You can learn new things, but you can't really change your basic intelligence.

_____ No matter how much intelligence you have, you can always change it quite a bit.

_____ You can change even your basic intelligence level considerably.

Appendix C

Confidence in One's Intelligence Scale

**Confidence in One's Intelligence**

1. Check the sentence that is most true for you.
   -----I usually think I'm intelligent.
   -----I wonder if I am intelligent.

Now, show how true the statement you chose is for you.

| Very true for me | True for me | Sort of true for me |
|---|---|---|

2. Check the sentence that is most true for you.
   -----When I get new work in school, I'm usually sure I will be able to learn it.
   -----When I get new work in school, I often think I may not be able to learn it.

Now, show how true the statement you chose is for you.

| Very true for me | True for me | Sort of true for me |
|---|---|---|

3. Check the sentence that is most true for you.

   -----I'm not very confident about my intellectual ability.
   -----I feel pretty confident about my intellectual ability.

Now, show how true the statement you chose is for you.

| Very true for me | True for me | Sort of true for me |
|---|---|---|

Appendix D

Task-choice Goal Measure

**Task-choice Goal Measure**

We have different kinds of problems here for you to choose from. There is no right answer—different students make different choices. Just put a check in front of your choice.

I would like to work on:

____ Problems that aren't too hard, so I don't get many wrong.

____ Problems that I'll learn a lot from, even if I won't look so smart.

____ Problems that are pretty easy, so I'll do well.

____ Problems that I'm pretty good at, so I can show that I'm smart.

Appendix E

Questionnaire Goal Choice Items

## Questionnaire Goal Choice Items

1.  If I knew I wasn't going to do well at a task, I probably wouldn't do it even if I might learn a lot from it.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Strongly Agree | Agree | Mostly Agree | Mostly Disagree | Disagree | Strongly Disagree |

2.  Although I hate to admit it, I sometimes would rather do well in a class than learn a lot.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Strongly Agree | Agree | Mostly Agree | Mostly Disagree | Disagree | Strongly Disagree |

3.  It's much more important for me to learn things in my classes than it is to get the best grades.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Strongly Agree | Agree | Mostly Agree | Mostly Disagree | Disagree | Strongly Disagree |

4.  If I *had* to choose between getting a good grade and being challenged in class, I would choose… (Circle one)

    "good grade"                    "being challenged"

Appendix F

Academic Risk-Taking Measure: PART

## Propensity for Academic Risk-Taking (PART) Survey

*Imagine that you have enrolled in a course with over 100 students in it. This course covers information that is new to you. The course has both an online and in-class components. Student activities in both components contribute significantly to your course grade. For each statement below select a number from 1 to 4 that best describes how comfortable you feel about participating in that type of classroom activity as an undergraduate student enrolled in this course.*

1. Participating in course activities that involve sharing my ideas and opinions.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

2. Disagreeing with others in a class discussion, if I think I am right.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

3. Sharing my opinions in class, even if no one else agrees with my point-of-view.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

4. Volunteering to talk in class, only after planning exactly what I will say.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

5. Asking questions that challenge the concepts discussed in class.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

6. Waiting for others to answer first so I can agree with what they have said.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

7. Volunteering to answer, when I know the questions are simple and not controversial.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

8. Offering different suggestions to peers about ways in which to complete group assignments.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

9. Disagreeing with the professor, even if I think there are negative consequences.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

10. Sharing my ideas in class, even if might feel embarrassed after I have shared.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

11. Agreeing with the group in a discussion even if I think their answer is wrong.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

12. Defending my views, even when others challenge my ideas in class.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Very Uncomfortable | Uncomfortable | Comfortable | Very comfortable |

*For these questions please answer as specifically about being in this hypothetical course and if possible provide examples:*

13. Do you feel you would need to agree with the views of your instructor to be successful in such a course?

14. If you approach completing assignments with a creative or unusual approach, how do you think this might influence your achievement in such a course?

15. How do you think your peers will view your work on projects if your opinions differ from theirs?

16. How do you feel instructors should assess/grade participation in online courses?

<u>Scoring (Items 1-12):</u>

        Question #01 Low Risk = 1 and High Risk =4
        Question #02 Low Risk = 1 and High Risk =4
        Question #03 Low Risk = 1 and High Risk =4
        Question #04 Low Risk = 4 and High Risk =1 (reverse scored)
        Question #05 Low Risk = 1 and High Risk =4
        Question #06 Low Risk = 4 and High Risk =1 (reverse scored)
        Question #07 Low Risk = 4 and High Risk =1 (reverse scored)
        Question #08 Low Risk = 1 and High Risk =4
        Question #09 Low Risk = 1 and High Risk =4
        Question #10 Low Risk = 1 and High Risk =4
        Question #11 Low Risk = 4 and High Risk =1 (reverse scored)
        Question #12 Low Risk = 1 and High Risk =4

Total risk propensity quantitative score can range from 12 (an indication of a low propensity for academic risk-taking) to 48 (an indication of a high propensity for academic risk-taking).

For the face-to-face interview with 18 students, the researcher purposefully selected students who represented a range in risk propensity based on their PART scores. Six students with PART scores in the Low, Medium, and High propensity ranges participated in the interviews.

    Low Propensity for Risk-Taking = 12 to 24
    Medium Propensity for Risk-Taking = 25 to 37
    High Propensity for Risk-Taking = 38 to 48

Appendix G

Action Research Spiral Permission

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| **Number of images/photos requested** | 1 |
| **The requesting person/organization** | Sarah B Rabe, Student at |
| **Title or numeric reference of the portion(s)** | Ch. 10 figure 10.1 a photocopy of the figure illustrating the action research spiral on pg. 278 found in: Kemmis, S., & McTaggart, R. (2005). The sage handbook of qualitative research (3rd ed.). Thousand Oaks, CA: SAGE. |
| **Title of the article or chapter the portion is from** | Ch. 10 Strategies of Qualitative Inquiry |
| **Editor of portion(s)** | N/A |
| **Author of portion(s)** | Kemmis, S., & McTaggart, R. |
| **Volume of serial or monograph** | N/A |
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| **Number of images/photos requested** | 1 |
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| **Title or numeric reference of the portion (s)** | a photocopy of the figure illustrating basic mixed methods design on pg. 220 found in: Figure 10.1 Three Basic Mixed Methods Designs only using the Convergent Parallel Mixed Methods part of the figure (cut out) Creswell. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Thousand Oaks, California: SAGE. |
| **Title of the article or chapter the portion is from** | Ch. 10 Figure 10.1 Three Basic Mixed Methods Designs only using the Convergent Parallel Mixed Methods part of the figure (cut out) |
| **Editor of portion(s)** | N/A |
| **Author of portion(s)** | John W. Creswell |
| **Volume of serial or monograph** | N/A |

| | |
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| **Page range of portion** | 220 |
| **Publication date of portion** | 2014 |
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| **Title** | Learning from Failure: A Case Study on Developing Growth Mindset Through Academic Risk-Taking in an Athletic Training Program |
| **Instructor name** | ██████████ |
| **Institution name** | ██████████ |
| **Expected presentation date** | Aug 2018 |

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Appendix I

ATTR 201: Athletic Training Clinical II Syllabus

**Course:**   ATTR 201 Athletic Training Clinical II
**Credit:**   2 hours
**Meeting times:**   ████████████████
**Location:**   █████████

**Instructor:**   Sarah Rabe, MS, LAT, ATC
**Office:**   ██████
**Office Hours:**   **In office:** M 8:00-8:50, M-R 12:00-1:30PM, or by appt.
**Virtual:** M/W 3-5:30PM Via Zoom, you can email me to set up a virtual appointment which is conducive to your schedule
*Please contact the professor via email to arrange a meeting if you cannot meet during office hours*
**Phone:**   ███████████
**Email:**   ████████████████

**COURSE DESCRIPTION:**  In this course each student will demonstrate proficiency in cognitive and psychomotor skills learned in ATTR 225 and 230.  Athletic training students shall perform skills in their assigned clinical experience that commensurate with their level of education, competence and experience.  Prerequisite: ATTR 200.

**TEXT REQUIRED:**   Clinical Notebook

**REQUIREMENTS FOR COURSE COMPLETION:**  Abide by the university attendance policy, complete all elements listed under evaluation, and obtain a "C" (2.00) or better for advancement.

**LEARNING OBJECTIVES:** At the completion of the semester the ATS will be able:
1. Describe and differentiate the types of quantitative and qualitative research, research components, and levels of research evidence. (EBP 3)
2. Describe and contrast research and literature resources including databases and online critical appraisal libraries that can be used for conducting clinically-relevant searches.  (EBP 6)
3. Describe the differences between narrative reviews, systematic reviews, and meta-analyses. (EBP 8)
4. Use standard criteria or developed scales (e.g., Physiotherapy Evidence Database Scale [PEDro], Oxford Centre for Evidence Based Medicine Scale) to critically appraise the structure, rigor, and overall quality of research studies.  (EBP 9)
5. Plan, implement, evaluate, and modify a fitness program specific to the physical status of the patient. This will include instructing the patient in proper performances of the activities and the warning signs and symptoms of potential injury that may be sustained. Effective lines of communication shall be established to elicit and convey information about the patient's status and the prescribed program. While maintaining patient confidentiality, all aspects of the fitness program shall be documented using standardized record keeping

methods.  (PHP 19)

6. Select, apply, evaluate, and modify appropriate standard protective equipment and other custom devices for the patient in order to prevent and/or minimize the risk of injury to the head, torso, spine, and extremities for safe participation in sport and/or physical activity. Effective lines of communication shall be established to elicit and convey information about the patient's situation and the importance of protective devices to prevent and/or minimize injury (TI 16, PHP 22, 23, CIP 2).

7. Educate clients/patients on the importance of healthy eating, regular exercise, and general preventative strategies for improving or maintaining health and quality of life.  (PHP-33)

**GENERAL CLASS POLICIES:**

Attendance Policy:

- Attendance is required.  Each student is allowed 2 absences before penalty. Each student is encouraged to check the undergraduate catalog in regard to absences.
  - Any student missing 25% of the class for any reason will receive an "F" in accordance with University policy.
- Each absence after the 2$^{nd}$ absence will result in a reduction of the final grade 3 points per event. An excess of absences will result in a reduction of the final grade.
  - The instructor has the right to allow for extreme cases and each student will be handled on an individual basis.
- Three tardies will result in one absence. A tardy constitutes arriving to class after the time stated on the syllabus.
- Sleeping in class and/or unauthorized use of electronic devices may be counted as an absence.
- Assignments that are late will not be accepted unless you have made prior arrangements.
- Assignments are due at the beginning of the class period of the due date unless otherwise specified.  **If you are late to class your assignment is late and will not be accepted.  If class is cancelled due to the University closing, assignments are still due unless otherwise noted/communicated.**
- **You must be present for class when assignments are due electronically, if you are not in class, you will not receive credit for your assignment unless you have made prior arrangements.**
- Failure to be present for a test, quiz or lab will result in a grade of "0," unless extraordinary circumstances are involved. Student must contact professor prior to absence for consideration.
- If class has an associated lab component. It is the student's responsibility to be dressed appropriately for designated lab days.  In the event a student is not dressed appropriately they will be marked tardy for that day. Two tardies equal one absence for lab.
- <u>Class Work Missed</u>

- o It is your responsibility to contact the professor in a timely manner (typically within 24 hrs.) if you are absent for unexpected reasons. Each situation will be handled on an individual basis but do not expect to be allowed to make-up work missed.
- o If you are going to be absent (school function) on a day that something is due, you must contact the professor prior to the absence and make arrangements for the assignment to be turned in on that day or discuss an alternate due date with the instructor prior to leaving. Assignments that are late will not be accepted unless you have made prior arrangements due to an absence. Tests that are scheduled for the day that you are gone will need to be made up before leaving.
- o The instructor has the right to allow for extreme cases and each student will be handled on an individual basis.
- o The *student* is responsible for all missed work/notes when absent from class and turning in homework in a timely fashion. Electronic assignments will be submitted utilizing Blackboard.

Electronic Communication Policy:

Any electronic communication will be conducted through ▮▮▮▮▮▮▮ e-mail. Please make sure you are checking your e-mail account at least twice a day. Information and assignments for this class will be emailed or posted on Blackboard. Failure to check email/blackboard does not constitute as a valid reason for assignments missed.

Extra Credit Policy:

Extra credit for an individual student is not an option. The professor reserves the right to make extra credit available to the entire class during the course of the semester. Extra credit may be in the form of written assignments or attendance to campus events. Inability to attend events due to student's schedule will not constitute in an alternative extra credit assignment.

Mobile Device Policy:

Cells phones, I-pods, or any other communication devices should be turned OFF and are not to be utilized during class. If so, the student will be asked to leave, and it will be recorded as an absence.

Usage of electronic devices for note taking is acceptable. If you are suspected of using electronics for any other reason other than note taking/class participation you will be unable to use electronics for any reason during class.

**HONOR CODE:** All students are expected to abide by the Honor Code of the university, specifically in regard to academic dishonesty. It is the student's responsibility to know what constitutes academic dishonesty and to abide by the Honor Code of the university. Violation of the Honor Code will result in judicial action with the appropriate authority (as outlined in the student handbook).

- • Academic dishonesty constitutes as sharing information on previously performed tests,

Globals, scenarios, practicals, and assignments. Suspicion of cheating can result in a zero and violation of the Honor Code.

**AMERICANS WITH DISABILITIES (ADA) STATEMENT**:  All requests for accommodation for this course or any school event are welcome from both students and parents.  Please make all such requests for this course through ███████████████████████████

████████

████████████████████████████████████████ provides peer tutoring for ████████████████ students.  Peer tutors will work with students to refine study skills and clarify course content.  Tutoring is offered on- campus in the ███████████████████████████ ██████████████████████.  **While** ████ **does not offer tutoring services for every course/subject,** ████ **strives to provide tutoring assistance for highly requested General Education Curriculum.  Students can search for courses in which tutoring services are offered by logging into** ██████████ **and clicking on "**██████████████████████████ ██████████████████████ **Should tutoring for certain course/subjects not be available, the student may contact the** ████ **Director to determine if other campus resources are available.** To schedule a peer tutoring appointment, students will need to log into ██████████ and click on "██████████████████████████████████████████ Prior to requesting a tutor, ████ recommends that an interested student speak first with his/her professor about concerns in a particular class; professors can provide insight into which areas need attention or which strategies might be helpful in specific courses.  Please contact ████ by emailing ████████████████████████ or visit our website at ██████████████████ Feel free to visit our office on the ████████████████████████

- Extra help/tutoring for Athletic Training courses should be directed to the instructor of the course

**EVACUATION PROCEDURES**: In the event of fire or emergency situation where it is needed to leave the building, all students are to meet in the parking lot of ████████████████████ ████████████████████████████████████████████ You are to wait in the parking lot until your attendance is accounted for. In the event of a tornado, intruder/active shooter all students are to barricade inside the storage closet in the ████ ████████████████

**METHODS OF INSTRUCTION:**
In class:  Any or all of the following methods may be used – lecture, lab, protocols, quizzes, exams, small/large group discussion, presentations, student presentations, and selected video or guest lecturer presentations.
Outside class:  Any or all of the following methods may be used – written assignments, individual research, readings, lab and other homework assignments.

**CLASS PARTICIPATION:** The student is expected to engage in class activities and/or discussions, come prepared with assignments/reading completed, ask questions, and interact appropriately. Use of personal electronic devices during class time will not be tolerated and **should be**

**silenced or turned off prior to class beginning.** All course communication will be conducted through Blackboard and/or ⬛⬛⬛⬛⬛⬛⬛⬛ supplied e-mail addresses. Please check these resources regularly in order to stay abreast of pertinent course information.

**OTHER:**
*\*Clinical paperwork must be completed and turned in to the CEC prior to ATS progressing to the next clinical experience. ATSs who do not have all necessary paperwork will not progress to next clinical experience and will lose 10 pts from final grade for each week paperwork is not turned in. CEC will contact the Instructor of the course to communicate the status of each ATS.*
*\*\*ATS is responsible for transportation to and from each clinical experience.*
*\*\*\*Mini/Affiliate clinical experiences require a minimum of 8 hours per week (i.e., mon-sun) and cannot occur in one day. A week must include at least two days.*

**EVALUATION:**
| | |
|---|---|
| Psychomotor Skill Assessment | 25% |
| Global Evaluations | 25% |
| Clinical Education | 30% |
| *(Evaluations & Journals/Papers)* | |
| Evidence Based Assignments | 20% |

**GRADING SCALE:**
A- 91.6-94.5    A 94.6-100
B- 82.6-85.5    B 85.6-89.5    B+ 89.6-91.5
C- 73.6-76.5    C 76.6-80.5    C+ 80.6-82.5
D- 64.6-67.5    D 67.6-71.5    D+ 71.6-73.5
F   0-64.5

**ASSIGNMENTS:**
**\*ALL ASSIGNMENTS/TESTS/PROJECTS/PRESENTATIONS THAT ARE TURNED IN MUST BE IN ELECTRONIC WORD DOCUMENT OR PDF UPLOADED TO BLACKBOARD. IN THE EVENT BLACKBOARD IS DOWN EMAIL THE ASSIGNMENT AND UPLOAD AS SOON TO BLACKBOARD AS SOON AS IT IS UP AND WORKING. NO PAPER FORMS WILL BE ACCEPTED, FAILURE TO TURN IN AN ASSIGNMENT IN ELECTRONIC FORM COULD RESULT IN POINTS DEDUCTED OR A ZERO. PLEASE NOTE THEY MUST BE A WORD DOCUMENT OR PDF. PLEASE USE THE FOLLOWING FORMAT: LASTNAME, FIRSTNAME_ASSIGNMENTTITLE**

**EX: ⬛⬛⬛⬛⬛⬛⬛ JOURNAL#1**

**IF THE FORMAT ABOVE IS NOT UTILIZED 10 POINTS WILL BE DEDUCTED. NO EXCUSES.**

Psychomotor Skill Assessment: (Learning objectives #6,7,8) Each psychomotor skill assessment has a skill subset that must be demonstrated. Each skill subset is worth 1 point if performed correctly and 0 points if performed incorrectly. These skills may be evaluated outside of class with any preceptor, especially the ATS's assigned preceptor. Students are encouraged to

complete their skill assessments with their assigned preceptors, students may not complete more than 25% of their clinical skills with a single preceptor other than their assigned preceptor. If the student does not have an assigned preceptor during the class, he/she is must follow the 25% rule with all preceptors. A student may only exceed the 25% rule with their assigned preceptor. Clinical skills will be evaluated through the use of mini scenarios.  Delivery of scenarios will vary depending on clinical skills and preceptor. ATS will be evaluated on clinical skills performed and according to the criteria on the skill sheet.  Due dates for completion of clinical skills are outlined on the syllabus and the preceptor may give the ATS any scenario he/she deems appropriated based from the clinical skills that are due in the time frame as indicated on the tentative course syllabus. The ATS will receive a 0 for that any skill that is not completed by the end of the allotted time as designated on the syllabus. The ATS is encouraged to house skills in a notebook that they carry with them to clinical experience. An ATS must achieve a score of 80% or higher in order to pass each individual proficiency.  If a student receives less than 80%, the skill must be re-attempted on another day until a passing score is achieved.  Scores from first-attempts will be averaged together to determine the overall grade for psychomotor skills, which accounts for 25% of the course grade.  For final grading purposes, a student will not receive credit for *any* evaluated skill until *all* skills have been passed.

Global Evaluations: (Learning objectives #5, 6, 7,8) Global Evaluations are performed by the ATS to demonstrate learning over time and to exercise sound decision-making.  Scenarios will be provided to the ATS based on the knowledge learned and the level attained in the Athletic Training Educational Program.  The Preceptor will notify the ATS of the global evaluations in advance.  The standard global evaluation grading sheet will be used each time, so please refer to this document for areas of focus for each global evaluation.  Global evaluations will occur during the course of the semester. If you are late or fail to show for a global you will receive a "0" for the global.

Clinical Education:

**Clinical Experience Evaluations:** Athletic Training Students will be formally evaluated twice during their major clinical experiences by their assigned CP.  These level-specific evaluations can be found on the Blackboard site for this course and in the Athletic Training Student Manual.  The ATS will be evaluated using a Likert scale on clinical skills and professional attributes clinical experience (please refer to the Clinical Experience syllabus found on the Blackboard site for specifics regarding the papers).  The total percentage from the evaluation will be applied to the Clinical Experience Grading Scale (attached) to reach the student's grade.  The grades from the two evaluations will be averaged and factored into the final grade for the course accounting for 30% of the grade.

**Weekly Clinical Experience Journal**: The ATS will be required to complete weekly clinical experience journals. The journal must be a minimum of one full-page in length. The purpose of the journals is for the ATS to write about what was observed and what was learned related to all aspects of athletic training including but not limited to prevention, any injuries/illnesses encountered, any treatment techniques (examples would include taping/wrapping, therapeutic modalities, etc.), or any rehabilitation techniques (examples

would include therapeutic exercises, therapeutic techniques, etc.).
- <u>Major Clinical Experience:</u>    Student will complete 12 clinical experience journals.
- <u>Mini Clinical Experience:</u>    Student will complete 4 clinical experience journals.
- <u>Affiliate Clinical Experience:</u>  Student will complete 4 clinical experience journals.

Journals will count and be submitted for a grade in the semester in which the ATS is completing each clinical experience (fall/spring).  In the event the ATS has a winter clinical experience the ATS will submit a selected number of journals in to the Instructors of ATTR 200 and ATTR 201.  The Instructor of each class will notify the ATS as to when and how many journals are due.

***Journals will be due to the Instructor each week.  Specific due dates indicated below.***

**End of semester experience paper**:  At the conclusion of the ATS's semester, the ATS will be required to write a minimum three full-page paper regarding his/her entire semester experience. The purpose of the paper is for the ATS to reflect back over the entire semester incorporating all experiences, both classroom/ clinical or didactic/psychomotor The paper should be affectively written and  incorporate at least 3 of the following content areas: 1) acknowledgment of the importance of the role of  injury and illness prevention programs; 2) acceptance of the moral and ethical obligations to provide care to the physically active; 3) the idea of professionalism; 4) personal clinical goals and how successfully those goals were achieved; 5) describe the strengths and  weaknesses of the entire experience; and 6) offer suggestions for improvement of the overall experience. The paper is due at the end of the semester. Specific due date indicated below.

*It is suggested that the ATS keep notes on any learning or practical applications that are observed, experienced or applied.  Each ATS should purchase a small pocket notebook to record daily notes for aid in the completion of the weekly clinical experience journals*

Format: All journals and papers must be typed, double-spaced, Times New Roman font, 12 pt., and have margins of one inch on all sides.

**Clinical Experience Evaluation Grading Scale:** Preceptor, please utilize the table below to find the equivalent numerical/letter grade for the average score calculated on second page of the Junior Clinical Experience Evaluation.  The converted numerical grade is the grade to be turned into the Athletic Training Clinical III or IV instructor for course grading purposes.

| Average Score | Grade Equivalent | Average Score | Grade Equivalent |
|---|---|---|---|
| **4.46 - 5.0** | 94.6-100% A | **2.66 - 3.05** | 76.6-80.5% C |
| **4.16 - 4.45** | 91.6-94.5% A- | **2.36 - 2.65** | 73.6-76.5% C- |
| **3.96 - 4.15** | 89.6-91.5% B+ | **2.16 - 2.35** | 71.6-73.5% D+ |

| | | | |
|---|---|---|---|
| **3.56 - 3.95** | 85.6-89.5% B | **1.76 - 2.15** | 67.6-71.5% D |
| **3.26 - 3.55** | 82.6-85.5 % B- | **1.46 - 1.75** | 64.6-67.5% D- |
| **3.06 - 3.25** | 80.6-82.5% C+ | **0.0 - 1.45** | 0-64.0 % F |

<u>Evidence Based Assignment: (Learning objectives # 1, 2,3,4)</u> Students will be given more detail via blackboard on the EBP assignments for this course.

Appendix J

ATTR 301: Athletic Training Clinical IV Syllabus

**Course:**          ATTR 301: Athletic Training Clinical IV
**Credit:**          2 hours
**Meeting times:**   █████████
**Location:**      ████████

**Instructor:**      ████████████
**Office:**          *Virtual Office
**Office Hours:**   **In Office:** By appt.
                **Virtual:** Via Zoom, you can email me to set up a virtual appointment which is conducive to your schedule
                *Please contact the professor via email to arrange a meeting if you cannot meet during office hours*
**Phone:**         █
**Email:**         ████████████

**COURSE DESCRIPTION:** In this course each student will demonstrate proficiency in cognitive and psychomotor skills learned in ATTR 324.  Athletic training students shall perform skills in their assigned clinical experience commensurate with their level of education, competence and experience.  Prerequisite: ATTR 201.

**TEXT REQUIRED:**          Clinical Notebook

**REQUIREMENTS FOR COURSE COMPLETION:** Abide by the university attendance policy, complete all elements listed under evaluation, and obtain a "C" (2.00) or better for advancement.

**COURSE OBJECTIVES:** At the completion of the semester ATS will:

**LEARNING OBJECTIVES:** At the completion of the semester the ATS will be able:
1. Use standard techniques and procedures such as respiratory, circulatory, and adnominal assessment in a clinical examination of common injuries, condition, illnesses and diseases (CE20)
2. Explain how the effectiveness of a prevention strategy can be assessed using clinical outcomes, surveillance, or evaluation data (PHP4).
3. Be able to describe the types of outcome measures for clinical practice as well as the type of evidences that are collected, understand and use the methods of assessing patient status and progress, apply and interpret clinical outcomes and determine the effectiveness and efficacy of an intervention (EBP10, 12, 13, 14).
4. Perform a comprehensive clinical examination of a patient with an upper extremity, lower extremity, head, neck, thorax, and/or spine injury or condition. This exam should incorporate clinical reasoning in the selection of assessment procedures and interpretation of findings to formulate a differential diagnosis and/or diagnosis, determine underlying impairments, and identify activity limitations and participation restrictions.  Based on the assessment data and consideration of the patient's goals, provide the appropriate initial care and establish overall treatment goals. Create and implement a therapeutic intervention that targets these treatment goals to include, as appropriate, therapeutic modalities, medications (with physician involvement

as necessary), and rehabilitative techniques and procedures. Integrate and interpret various forms of standardized documentation including both patient-oriented and clinician-oriented outcomes measures to recommend activity level, make return to play decisions, and maximize patient outcomes and progress in the treatment plan as it relates to the upper extremity, head and neck (CIP4)

5. Utilize documentation strategies to effectively communicate with patients, physicians, insurers, colleagues, administrators, and parents or family members while using appropriate terminology and complying with statues that regulate privacy of medical records. This includes using a comprehensive patient-file management system (including diagnostic and procedural codes) for appropriate chart documentation, risk management, outcomes, and billing and complying with statues that regulate privacy of medical records. This includes using a comprehensive patient-file management system (including diagnostic and procedural codes) for appropriate chart documentation, risk management, outcomes, and billing (CIP 9).

**GENERAL CLASS POLICIES:**
**ATTENDANCE POLICY:**
1. Attendance is required.  Each student is allowed 2 absences before penalty. Each student is encouraged to check the undergraduate catalog regarding absences.
2. Any student missing 25% of the class for any reason will receive an "0" in accordance with University policy.  Found here in the ██████████████████████████████.
3. Each absence after the 2$^{nd}$ absence will result in a reduction of the final grade 3 points per event; reduction of the final grade due to absences will be conducted at the end of semester.
4. The instructor has the right to allow for extreme cases and each student will be handled on an individual basis.
5. Three tardies will result in one absence. A tardy constitutes arriving to class after the time stated on the syllabus.
6. Sleeping in class and/or unauthorized use of electronic devices may be counted as an absence.
7. Assignments that are late will not be accepted, resulting in a zero unless you have made prior arrangements.
8. Assignments are due at the beginning of the class period of the due date unless otherwise specified. **If you are late to class your assignment is late and will not be accepted, resulting in a zero.  If class is cancelled due to the University closing, assignments are still due as stated unless otherwise noted/communicated.**
9. **You must be present for class when assignments are due electronically, if you are not in class, you will not receive credit for your assignment, resulting in a zero; unless you have made prior arrangements.**
10. Failure to be present or on time for a test, quiz, or lab will result in a grade of "0" unless extraordinary circumstances are involved. Student must contact professor prior to absence for consideration.
11. If class has an associated lab component. It is the student's responsibility to be dressed appropriately for designated lab days. In the event a student is not dressed appropriately they will be marked tardy for that day. Two tardies equal one absence for lab.

**MISSED CLASSWORK:**
- It is your responsibility to contact the professor in a timely manner (within 24 hrs.) if you are absent for unexpected reasons.  Each situation will be handled on an individual basis but do not expect to be allowed to make-up work missed unless prior arrangements have been made.
- If you are going to be absent (school function) on a day that something is due, you must contact the professor prior to the absence and make arrangements for the assignment to be turned in on that day or discuss an alternate due date with the instructor prior to leaving. Assignments that

are late will not be accepted unless you have made prior arrangements due to an absence. Tests that are scheduled for the day that you are gone will need to be made up before leaving.

- The instructor has the right to allow for extreme cases and each student will be handled on an individual basis.
- The *student* is responsible for all missed work/notes when absent from class and turning in homework in a timely fashion. Electronic assignments will be submitted utilizing Blackboard and due by stated due date.

Electronic Communication Policy:

Any electronic communication will be conducted through ▬▬▬▬▬▬ e-mail. Please make sure you are checking your e-mail account at least twice a day. Information and assignments for this class will be emailed or posted on Blackboard. Failure to check email/blackboard does not constitute as a valid reason for assignments missed.

Extra Credit Policy:

Extra credit for an individual student is not an option. The professor reserves the right to make extra credit available to the entire class during the course of the semester. Extra credit may be in the form of written assignments or attendance to campus events. Inability to attend events due to student's schedule will not constitute in an alternative extra credit assignment.

Mobile Device Policy:

Cells phones, I-pods, or any other communication devices should be turned OFF and are not to be utilized during class. If so, the student will be asked to leave, and it will be recorded as an absence.

Usage of electronic devices for note taking is acceptable. If you are suspected of using electronics for any other reason other than note taking/class participation you will be unable to use electronics for any reason during class.

**HONOR CODE:** All students are expected to abide by the Honor Code of the university, specifically in regard to academic dishonesty. It is the student's responsibility to know what constitutes academic dishonesty and to abide by the Honor Code of the university. Violation of the Honor Code will result in judicial action with the appropriate authority (as outlined in the student handbook).

- Academic dishonesty constitutes as sharing information on previously performed tests, Globals, scenarios, practicals, and assignments. Suspicion of cheating can result in a zero and violation of the Honor Code.

**AMERICANS WITH DISABILITIES (ADA) STATEMENT**: All requests for accommodation for this course or any school event are welcome from both students and parents. Please make all such requests for this course through ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ ▬▬▬▬

▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ provides peer tutoring for ▬▬▬▬▬▬ students. Peer tutors will work with students to refine study skills and clarify

course content.  Tutoring is offered on- campus in the ████████████████████ ████████████████. **While ████ does not offer tutoring services for every course/subject, ████ strives to provide tutoring assistance for highly requested General Education Curriculum.  Students can search for courses in which tutoring services are offered by logging into ████████ and clicking on "████████████████████████ ████████████████ Should tutoring for certain course/subjects not be available, the student may contact the ████ Director to determine if other campus resources are available.** To schedule a peer tutoring appointment, students will need to log into ████████ and click on "████████████████████████████████ Prior to requesting a tutor, ████ recommends that an interested student speak first with his/her professor about concerns in a particular class; professors can provide insight into which areas need attention or which strategies might be helpful in specific courses.  Please contact ████ by emailing ██████████████████ or visit our website at ████████████ Feel free to visit our office on the ████████████████████.

- Extra help/tutoring for Athletic Training courses should be directed to the instructor of the course

**EVACUATION PROCEDURES**: In the event of fire or emergency situation where it is needed to leave the building, all students are to meet in the parking lot of ████████████████ ████████████████████████████ You are to wait in the parking lot until your attendance is accounted for. In the event of a tornado, intruder/active shooter all students are to barricade inside the storage closet in the ████ ████████████.

**METHODS OF INSTRUCTION:**
In class:  Any or all of the following methods may be used – lecture, lab, protocols, quizzes, exams, small/large group discussion, presentations, student presentations, and selected video or guest lecturer presentations.
Outside class:  Any or all of the following methods may be used – written assignments, individual research, readings, lab and other homework assignments.

**CLASS PARTICIPATION:** The student is expected to engage in class activities and/or discussions, come prepared with assignments/reading completed, ask questions, and interact appropriately. Use of personal electronic devices during class time will not be tolerated and **should be silenced or turned off prior to class beginning.**  All course communication will be conducted through Blackboard and/or ████████████████ supplied e-mail addresses.  Please check these resources regularly in order to stay abreast of pertinent course information.

**OTHER:**
*Clinical paperwork must be completed and turned in to the CEC prior to ATS progressing to the next clinical experience.  ATSs who do not have all necessary paperwork will not progress to next clinical experience and will lose 10 pts from final grade for each week paperwork is not turned in.  CEC will contact the Instructor of the course to communicate the status of each ATS.*
**ATS is responsible for transportation to and from each clinical experience.*

*****Mini/Affiliate clinical experiences require a minimum of 8 hours per week (i.e., mon-sun) and cannot occur in one day.  A week must include at least two days.**

**EVALUATION:**

| | |
|---|---|
| Psychomotor Skill Assessment | 25% |
| Global Evaluations | 25% |
| Clinical Education | 30% |
| *(Evaluations & Journals/Papers)* | |
| Evidence Based Assignments | 20% |

**GRADING SCALE:**

| | | |
|---|---|---|
| A- 91.6-94.5 | A 94.6-100 | |
| B- 82.6-85.5 | B 85.6-89.5 | B+ 89.6-91.5 |
| C- 73.6-76.5 | C 76.6-80.5 | C+ 80.6-82.5 |
| D- 64.6-67.5 | D 67.6-71.5 | D+ 71.6-73.5 |
| F  0-64.5 | | |

**ASSIGNMENTS:**

**\*ALL ASSIGNMENTS/TESTS/PROJECTS/PRESENTATIONS THAT ARE TURNED IN MUST BE IN ELECTRONIC WORD DOCUMENT OR PDF UPLOADED TO BLACKBOARD. IN THE EVENT BLACKBOARD IS DOWN EMAIL THE ASSIGNMENT AND UPLOAD AS SOON TO BLACKBOARD AS SOON AS IT IS UP AND WORKING. NO PAPER FORMS WILL BE ACCEPTED, FAILURE TO TURN IN AN ASSIGNMENT IN ELECTRONIC FORM COULD RESULT IN POINTS DEDUCTED OR A ZERO. PLEASE NOTE THEY MUST BE A WORD DOCUMENT OR PDF. PLEASE USE THE FOLLOWING FORMAT: LASTNAME, FIRSTNAME_ASSIGNMENTTITLE**

**EX:** &#9608;&#9608;&#9608;&#9608;&#9608;&#9608;**JOURNAL#1**

**IF THE FORMAT ABOVE IS NOT UTILIZED 10 POINTS WILL BE DEDUCTED. NO EXCUSES.**

If you do not have Microsoft office, you may use your &#9608;&#9608;&#9608; email to access a free student version here.

**OTHER:**

*\*Clinical paperwork must be completed and turned in to the CEC prior to ATS progressing to the next clinical experience.  ATSs who do not have all necessary paperwork will not progress to next clinical experience and will lose 10 pts from final grade for each week paperwork is not turned in.  CEC will contact the Instructor of the course to communicate the status of each ATS.*

*\*\*ATS is responsible for transportation to and from each clinical experience.*

*\*\*\*Mini/Affiliate clinical experiences require a minimum of 8 hours per week (i.e., mon-sun) and cannot occur in one day.  A week must include at least two days.*

**Evaluation:**

| | |
|---|---|
| Psychomotor Skill Assessment | 25% |
| Global Evaluations | 25% |
| Clinical Education | 30% |
| Evidence Based Practice | 20% |

**GRADING SCALE:**

| | | |
|---|---|---|
| A+ 94.7+ | A 94.6-100 | A- 91.6-94.5 |
| B+ 89.6-91.5 | B 85.6-89.5 | B- 82.6-85.5 |
| C+ 80.6-82.5 | C 76.6-80.5 | C- 73.6-76.5 |
| D+ 71.6-73.5 | D 67.6-71.5 | D- 64.6-67.5 |
| | F 0-64.5 | |

## Assignment Descriptions

Psychomotor Skill Assessment:

Each psychomotor skill assessment has a skill subset that must be demonstrated.  Each skill subset is worth 1 point if performed correctly and 0 points if performed incorrectly. These skills may be evaluated outside of class with any preceptor, especially the ATS's assigned preceptor.  Students are encouraged to complete their skill assessments with their assigned preceptors. Students may not complete more than 25% of their clinical skills with a single preceptor other than their assigned preceptor. If the student does not have an assigned preceptor during the class, he/she is must follow the 25% rule with all preceptors. A student may only exceed the 25% rule with their assigned preceptor.  Clinical skills will be evaluated through the use of mini scenarios.  Delivery of scenarios will vary depending on clinical skills and preceptor. ATS will be evaluated on clinical skills performed and according to the criteria on the skill sheet.  Due dates for completion of clinical skills are outlined on the syllabus and the preceptor may give the ATS any scenario he/she deems appropriated based from the clinical skills that are due in the time frame as indicated on the tentative course syllabus. The ATS will receive a 0 for that any skill that is not completed by the end of the allotted time as designated on the syllabus; typically, the time period is before each global date. ATSs are encouraged to house skills in a notebook that they carry with them to clinical experience. An ATS must achieve a score of 80% or higher in order to pass each individual proficiency.  If a student receives less than 80%, the skill must be re-attempted on another day until a passing score is achieved. Scores from first-attempts will be averaged together to determine the overall grade for psychomotor skills, which accounts for 30% of the course grade.  For final grading purposes, a student will not receive credit for *any* evaluated skill until *all* skills have been passed.

Global Evaluations: *(Course objectives #1, 2, 3, 4, 5, 6, 8)*

Global Evaluations are performed by the ATS to demonstrate learning over time and to exercise sound decision-making.  Scenarios will be provided to the ATS based on the knowledge learned and the level attained in the Athletic Training Program.  The preceptor will notify the ATS of the global evaluations in advance.  The standard global evaluation grading sheet will be used each time, so please refer to this document for areas of focus for each global evaluation.  Global evaluations will occur periodically throughout the course of the semester. Global evaluations account for 25% of the student's grade.

Global Evaluations may be performed in the Learning Space system. You should use the following to access your recordings for review.
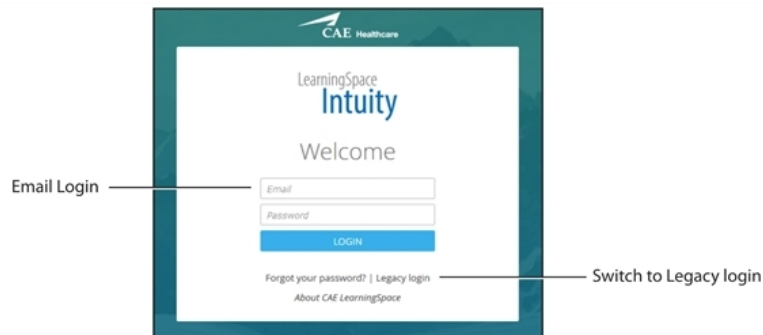
1. Use Chrome or IE browsers
2. Log into the following IP address ████████████████████████████
   ██████████████████████████████████
   ██████████████████████████████
5. Select tab for use: Video review, assignment, etc.

If for some reason you cannot see your video, please make sure you download S Player (version 2.1.56.)

Clinical Education:

**Clinical Experience Evaluations** - Athletic Training Students will be formally evaluated twice during their major clinical experiences by their assigned preceptor.  These level-specific evaluations can be found on the Blackboard site for this course and in the Athletic Training Student Manual.  The ATS will be evaluated using a Likert scale on clinical skills, professional attributes, and quality of summative/final papers written during the clinical experience (please refer to the Clinical Experience syllabus found on the Blackboard site for specifics regarding the papers).  The total percentage from the evaluation will be applied to the Clinical Experience Grading Scale (attached) to reach the student's grade.  The grades from the two evaluations will be averaged and factored into the final grade for the course accounting for 30% of the grade.

**Bi-Weekly Clinical Experience Journal-**The ATS will be required to complete bi-weekly clinical experience journals to be turned in every two weeks. The journal must be a minimum of two full-pages in length.  The purpose of the journal is for the ATS to write what was observed, what was learned and reflect on how the experience made the ATS feel (affective reflection). When writing the clinical experience journal, the ATS should consider the following: primacy of the patient, professionalism, your personal goals and how successfully those goals were achieved and your most beneficial experience.

- Major Clinical Experience:     The student will complete 6/8 bi-monthly journals
- Mini Clinical Experience:      The student will complete 2 bi-monthly journals
- Affiliate Clinical Experience:  The student will complete 2 bi-monthly journals

***Each journal completed during the major experience is due at the end of every two weeks. Each journal completed during the mini & affiliate experience will be due at the end of every two weeks. Specific due dates will be discussed in class and indicated below.***

Journals will count and be submitted for a grade in the semester in which the ATS is completing

each clinical experience (fall/spring).  In the event the ATS has a winter clinical experience the ATS will submit a selected number of journals in to the Instructors of ATTR 300 and ATTR 301. The Instructor of each class will notify the ATS as to when and how many journals are due.

**End of semester experience paper-** At the conclusion of the ATS's semester, the ATS will be required to write a minimum four full-page paper regarding his/her entire semester experience. The purpose of the paper is for the ATS to reflect back over the entire semester incorporating all experiences, both classroom/clinical or didactic/psychomotor. The paper should be affectively written and  incorporate at least 4 of the following content areas: 1) acknowledgment of the importance of developing a thorough, comprehensive injury and illness prevention program; 2) acceptance of the moral and ethical obligations to provide therapeutic agents, therapeutic rehabilitation or reconditioning to student-athletes and others involved in physical activity to the fullest extent possible; 3)the importance of a teamed approach to practice; 4) the idea of professionalism; 5) the legal obligations to practice Athletic Training; 6) the importance of advancing knowledge; 7) the importance of acknowledging culture differences and competence of; 8) personal clinical goals and how successfully those goals were achieved; 9) describe the strengths and  weaknesses of the entire experience; and 10) offer suggestions for improvement of the overall experience.  The paper is due at the end of the semester. Specific due date is indicated below.

*It is suggested that the ATS keep notes on any learning or practical applications that are observed, experienced or applied.  Each ATS should purchase a small pocket notebook to record daily notes for aid in the completion of the weekly clinical experience journals.*

Format: All journals and papers must be typed, double-spaced, Times New Roman font, 12 pt., and have margins of one inch on all sides.

**Clinical Experience Evaluation Grading Scale**
PRECEPTOR, please utilize the table below to find the equivalent numerical/letter grade for the average score calculated on second page of the Junior Clinical Experience Evaluation.  The converted numerical grade is the grade to be turned into the ATTR 300 or 301 instructor for course grading purposes.

| Average Score | Grade Equivalent | Average Score | Grade Equivalent |
|---|---|---|---|
| 4.46-5.0 | 94.6-100%A | 2.66-3.05 | 76.6-80.5% C |
| 4.16-4.5 | 91.6-94.5% A- | 2.36-2.65 | 73.6-76.5% C- |
| 3.96-4.15 | 89.6-91.5% B+ | 2.16-2.35 | 71.6-73.5%D+ |
| 3.56-3.95 | 85.6-89.5% B | 1.76-2.15 | 67.6-71.5 D |
| 3.26-3. 55 | 82.6-85.5 % B- | 1.46-1.75 | 64.6-67.5% D- |
| 3.06-3.25 | 80.6-82.5%C+ | 0.0-1.45 | 0-64.0 % F |

Evidence-Based Practice: Students will be given more detail via blackboard on the EBP assignments for this course.

Appendix K

ATTR 401: Athletic Training Clinical VI

**Course:**          ATTR 401 Athletic Training Clinical VI
**Credit:**           2 hours
**Meeting times:**    █████████████████
**Location:**         ████████

**Instructor:**      Sarah Rabe, MS, LAT, ATC
**Office:**          ████████
**Office Hours:**    **In office:** M 8:00-8:50, M-R 12:00-1:30PM, or by appt.
                  **Virtual:** M/W 3-5:30PM Via Zoom, you can email me to set up a virtual appointment which is conducive to your schedule
                  *Please contact the professor via email to arrange a meeting if you cannot meet during office hours*
**Phone:**          ████████████
**Email:**          ████████████████

**COURSE DESCRIPTION:**  In this course each student will demonstrate proficiency in cognitive and psychomotor skills learned in ATTR 402.  Athletic training students shall perform skills in their assigned clinical experience commensurate with their level of education, competence and experience.  Prerequisite: ATTR 400.

**TEXT REQUIRED:**     Clinical Notebook

**REQUIREMENTS FOR COURSE COMPLETION:**  Abide by the university attendance policy, complete all elements listed under evaluation, and obtain a "C" (2.00) or better for advancement.

**LEARNING OBJECTIVES:** At the completion of the semester the ATS will be able:
1. Use of standard techniques during a clinical examination of common injuries and illnesses to include such tools as a glucometer, otoscope, etc. (CE20j)
2. Assess and interpret the finding from a physical examination based of clinical presentation for pulmonary, gastrointestinal, dermatological, genitourinary, and ocular function (CE21).
3. Be able assess for an asthmatic event through use of a peak-flow meter and signs and symptoms to determine when to use a metered-dose inhaler and be able to instruct a patient on how to use.  In addition, be able assist in a nebulizer treatment for an asthmatic event (AC 31,33; PHP 16).
4. Assess oxygen saturation and understand the difference between normal and abnormal finding to guide in the decision-making process (AC18).
5. Use a glucometer to monitor blood glucose levels, determine participation status, and make referral decisions (PHP15).
6. Assess core body temperature using a rectal probe (AC29).
7. Demonstrate the use of an auto-injectable epinephrine in the management of allergic anaphylaxis. Decide when auto-injectable epinephrine use is warranted based on a patient's condition (AC35).

8. Use an electronic drug resource to locate and identify indications, contraindications, precautions, and adverse reactions for common prescription and nonprescription medications (TI23).

9. Properly assist and/or instruct the patient in the proper use, cleaning, and storage of drugs commonly delivered by metered dose inhalers, nebulizers, insulin pumps, or other parenteral routes as prescribed by the physician (TI28).

10. Optimize therapeutic outcomes by communicating with patients and/or appropriate health-care professionals regarding compliance issues, drug interactions, adverse drug reactions, and sub-optimal therapy (TI 31).

11. Administer testing procedures to obtain baseline data regarding a client's/patient's level of general health (including nutritional habits, physical activity status, and body composition). Use this data to design, implement, evaluate, and modify a program specific to the performance and health goals of the patient. This will include instructing the patient in the proper performance of the activities, recognizing the warning signs and symptoms of potential injuries and illnesses that may occur, and explaining the role of exercise in maintaining overall health and the prevention of diseases. Incorporate contemporary behavioral change theory when educating clients/patients and associated individuals to effect health-related change. Refer to other medical and health professionals when appropriate (CIP1).

12. Develop, implement, and monitor prevention strategies for at-risk individuals (e.g., persons with asthma or diabetes, persons with a previous history of heat illness, persons with sickle cell trait) and large groups to allow safe physical activity in a variety of conditions. This includes obtaining and interpreting data related to potentially hazardous environmental conditions, monitoring body functions (e.g., blood glucose, peak expiratory flow, hydration status), and making the appropriate recommendations for individual safety and activity status (CIP 3).

13. Perform a comprehensive clinical examination of a patient with a common illness/condition that includes appropriate clinical reasoning in the selection of assessment procedures and interpretation of history and physical examination findings in order to formulate a differential diagnosis and/or diagnosis. Based on the history, physical examination, and patient goals, implement the appropriate treatment strategy to include medications (with physician involvement as necessary). Determine whether patient referral is needed and identify potential restrictions in activities and participation. Formulate and communicate the appropriate return to activity protocol (CIP5).

**GENERAL CLASS POLICIES:**

Attendance Policy:

- Attendance is required.  Each student is allowed 2 absences before penalty. Each student is encouraged to check the undergraduate catalog in regard to absences.
  - Any student missing 25% of the class for any reason will receive an "F" in accordance with University policy.
- Each absence after the 2nd absence will result in a reduction of the final grade 3 points per event. An excess of absences will result in a reduction of the final grade.

- o The instructor has the right to allow for extreme cases and each student will be handled on an individual basis.
- Three tardies will result in one absence. A tardy constitutes arriving to class after the time stated on the syllabus.
- Sleeping in class and/or unauthorized use of electronic devices may be counted as an absence.
- Assignments that are late will not be accepted unless you have made prior arrangements.
- Assignments are due at the beginning of the class period of the due date unless otherwise specified. **If you are late to class your assignment is late and will not be accepted. If class is cancelled due to the University closing, assignments are still due unless otherwise noted/communicated.**
- **You must be present for class when assignments are due electronically, if you are not in class, you will not receive credit for your assignment unless you have made prior arrangements.**
- Failure to be present for a test, quiz or lab will result in a grade of "0," unless extraordinary circumstances are involved. Student must contact professor prior to absence for consideration.
- If class has an associated lab component. It is the student's responsibility to be dressed appropriately for designated lab days. In the event a student is not dressed appropriately they will be marked tardy for that day. Two tardies equal one absence for lab.
- Class Work Missed
  - o It is your responsibility to contact the professor in a timely manner (typically within 24 hrs.) if you are absent for unexpected reasons. Each situation will be handled on an individual basis but do not expect to be allowed to make-up work missed.
  - o If you are going to be absent (school function) on a day that something is due, you must contact the professor prior to the absence and make arrangements for the assignment to be turned in on that day or discuss an alternate due date with the instructor prior to leaving. Assignments that are late will not be accepted unless you have made prior arrangements due to an absence. Tests that are scheduled for the day that you are gone will need to be made up before leaving.
  - o The instructor has the right to allow for extreme cases and each student will be handled on an individual basis.
  - o The *student* is responsible for all missed work/notes when absent from class and turning in homework in a timely fashion. Electronic assignments will be submitted utilizing Blackboard.

Electronic Communication Policy:

Any electronic communication will be conducted through ▇▇▇▇▇▇ e-mail. Please make sure you are checking your e-mail account at least twice a day. Information and

assignments for this class will be emailed or posted on Blackboard. Failure to check email/blackboard does not constitute as a valid reason for assignments missed.

Extra Credit Policy:

Extra credit for an individual student is not an option.  The professor reserves the right to make extra credit available to the entire class during the course of the semester. Extra credit may be in the form of written assignments or attendance to campus events. Inability to attend events due to student's schedule will not constitute in an alternative extra credit assignment.

Mobile Device Policy:

Cells phones, I-pods, or any other communication devices should be turned OFF and are not to be utilized during class.  If so, the student will be asked to leave, and it will be recorded as an absence.

Usage of electronic devices for note taking is acceptable. If you are suspected of using electronics for any other reason other than note taking/class participation you will be unable to use electronics for any reason during class.

**HONOR CODE:** All students are expected to abide by the Honor Code of the university, specifically in regard to academic dishonesty.  It is the student's responsibility to know what constitutes academic dishonesty and to abide by the Honor Code of the university.  Violation of the Honor Code will result in judicial action with the appropriate authority (as outlined in the student handbook).

- Academic dishonesty constitutes as sharing information on previously performed tests, Globals, scenarios, practicals, and assignments. Suspicion of cheating can result in a zero and violation of the Honor Code.

**AMERICANS WITH DISABILITIES (ADA) STATEMENT**:  All requests for accommodation for this course or any school event are welcome from both students and parents.  Please make all such requests for this course through ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮

▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ provides peer tutoring for ▮▮▮▮▮▮▮▮▮▮ students.  Peer tutors will work with students to refine study skills and clarify course content.  Tutoring is offered on- campus in the ▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮. **While ▮▮▮ does not offer tutoring services for every course/subject, ▮▮▮ strives to provide tutoring assistance for highly requested General Education Curriculum.  Students can search for courses in which tutoring services are offered by logging into ▮▮▮▮▮▮▮ and clicking on "▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ Should tutoring for certain course/subjects not be available, the student may contact the ▮▮▮ Director to determine if other campus resources are available.** To schedule a peer tutoring appointment, students will need to log into ▮▮▮▮▮▮▮ and click on "▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ Prior to requesting a tutor, ▮▮▮ recommends that an interested student speak first with his/her professor about

concerns in a particular class; professors can provide insight into which areas need attention or which strategies might be helpful in specific courses.  Please contact ████ by emailing ████████████████████ or visit our website at ████████████████ Feel free to visit our office on the ████████████████████████

- Extra help/tutoring for Athletic Training courses should be directed to the instructor of the course

**EVACUATION PROCEDURES**: In the event of fire or emergency situation where it is needed to leave the building, all students are to meet in the parking lot of ██████████████████ ████████████████████████████████████ You are to wait in the parking lot until your attendance is accounted for. In the event of a tornado, intruder/active shooter all students are to barricade inside the storage closet in the ████ ████████████

**METHODS OF INSTRUCTION:**

In class:  Any or all of the following methods may be used – lecture, lab, protocols, quizzes, exams, small/large group discussion, presentations, student presentations, and selected video or guest lecturer presentations.

Outside class:  Any or all of the following methods may be used – written assignments, individual research, readings, lab and other homework assignments.

**CLASS PARTICIPATION:** The student is expected to engage in class activities and/or discussions, come prepared with assignments/reading completed, ask questions, and interact appropriately. Use of personal electronic devices during class time will not be tolerated and **should be silenced or turned off prior to class beginning.**  All course communication will be conducted through Blackboard and/or ████████████████████ supplied e-mail addresses.  Please check these resources regularly in order to stay abreast of pertinent course information.

**OTHER:**

*Clinical paperwork must be completed and turned in to the CEC prior to ATS progressing to the next clinical experience.  ATSs who do not have all necessary paperwork will not progress to next clinical experience and will lose 10 pts from final grade for each week paperwork is not turned in.  CEC will contact the Instructor of the course to communicate the status of each ATS.*
*\*\*ATS is responsible for transportation to and from each clinical experience.*
*\*\*\*Mini/Affiliate clinical experiences require a minimum of 8 hours per week (i.e., mon-sun) and cannot occur in one day.  A week must include at least two days.*

**EVALUATION:**

| | |
|---|---|
| Psychomotor Skill Assessment | 25% |
| Global Evaluations | 25% |
| Clinical Education | 30% |
| *(Evaluations & Journals/Papers)* | |
| Evidence Based Assignments | 20% |

**GRADING SCALE:**
A- 91.6-94.5     A 94.6-100
B- 82.6-85.5     B 85.6-89.5     B+ 89.6-91.5
C- 73.6-76.5     C 76.6-80.5     C+ 80.6-82.5
D- 64.6-67.5     D 67.6-71.5     D+ 71.6-73.5
F   0-64.5

**ASSIGNMENTS:**
**\*ALL ASSIGNMENTS/TESTS/PROJECTS/PRESENTATIONS THAT ARE TURNED IN MUST BE IN ELECTRONIC WORD DOCUMENT OR PDF UPLOADED TO BLACKBOARD. IN THE EVENT BLACKBOARD IS DOWN EMAIL THE ASSIGNMENT AND UPLOAD AS SOON TO BLACKBOARD AS SOON AS IT IS UP AND WORKING. NO PAPER FORMS WILL BE ACCEPTED, FAILURE TO TURN IN AN ASSIGNMENT IN ELECTRONIC FORM COULD RESULT IN POINTS DEDUCTED OR A ZERO. PLEASE NOTE THEY MUST BE A WORD DOCUMENT OR PDF. PLEASE USE THE FOLLOWING FORMAT: LASTNAME, FIRSTNAME_ASSIGNMENTTITLE**

**EX:** ▬▬▬▬▬▬**JOURNAL#1**
**IF THE FORMAT ABOVE IS NOT UTILIZED 10 POINTS WILL BE DEDUCTED. NO EXCUSES.**

Exam Preparation:
**Comprehensive MC and Applied Decision-Making Exam:** You will complete on your own, one online timed 2-hour multiple choice test and one online timed 40-minute applied decision-making exam from your text book under the section of knowledge assessment and the section applied decision-making that covers all domains of athletic training. The purpose of the comprehensive exam is to give you a pre-test for the BOC examination prior to beginning the Domains study.

**Homework Assignments**: Prior to the start of each domain section, you will complete assigned questions out of your text.  You will be expected to complete each question with an explanation of why you chose the answer you did.  Answers and explanation should be turned in to the blackboard submission link prior to the beginning of class on the designated due date. Assignments must be typed.
Text: Athletic Training Exam Review

- Prevention and Health Promotion: complete MC problems 1-10 (p. 9), T/F 1-5 (p. 126), and Applied Decision-Making Problem 1 (p. 132)
- Immediate Care: complete MC problems 15-25 (p. 42), T/F 1-5 (p. 128), and Applied Decision-Making Problem 12 (p. 141)
- Clinical Examination: complete MC problems 25-45 (p. 24), T/F 6-10 (p. 126), and Applied Decision-Making Problem 20 (p. 146)
- Treatment and Rehabilitation: complete MC problems 90-100 (p. 57), T/F 1-5 (p. 127), and Applied Decision-Making Problem 7 (p. 137)
- Health Care Administration: complete MC problems 1-10 (p. 79), T/F 5-10 (p. 128), and Applied Decision-Making Problem 13 (p. 141)
- Psychology: MC problems 1-3 (p. 109), Pharmacology: MC problems 1-4 (p. 116), and

Nutrition: MC problems 3-5 (p. 114) T/F <u>Psychology:</u> 1-5 (127), and Applied Decision-Making Problem 5 (p. 135)

**Domain Quizzes**: There will be quizzes at the conclusion of each domain of study that will consist of a written, oral, and simulation section. These will take place in class.

**Exit Exam:** Athletic Training Students will complete a three-part exam as a requirement of ATTR 401 and for a graduation requirement.  During this exam, students will complete a written portion, a practical portion and a written simulation portion.   Remember this is a test.  You are to work on the test alone and without a book.

<u>Psychomotor Skill Assessment:</u> (Learning objectives #6,7,8) Each psychomotor skill assessment has a skill subset that must be demonstrated.  Each skill subset is worth 1 point if performed correctly and 0 points if performed incorrectly.  These skills may be evaluated outside of class with any preceptor, especially the ATS's assigned preceptor.  Students are encouraged to complete their skill assessments with their assigned preceptors, students may not complete more than 25% of their clinical skills with a single preceptor other than their assigned preceptor. If the student does not have an assigned preceptor during the class, he/she is must follow the 25% rule with all preceptors. A student may only exceed the 25% rule with their assigned preceptor. Clinical skills will be evaluated through the use of mini scenarios.  Delivery of scenarios will vary depending on clinical skills and preceptor. ATS will be evaluated on clinical skills performed and according to the criteria on the skill sheet.  Due dates for completion of clinical skills are outlined on the syllabus and the preceptor may give the ATS any scenario he/she deems appropriated based from the clinical skills that are due in the time frame as indicated on the tentative course syllabus. The ATS will receive a 0 for that any skill that is not completed by the end of the allotted time as designated on the syllabus. The ATS is encouraged to house skills in a notebook that they carry with them to clinical experience. An ATS must achieve a score of 80% or higher in order to pass each individual proficiency.  If a student receives less than 80%, the skill must be re-attempted on another day until a passing score is achieved.  Scores from first-attempts will be averaged together to determine the overall grade for psychomotor skills, which accounts for 25% of the course grade.  For final grading purposes, a student will not receive credit for *any* evaluated skill until *all* skills have been passed.

<u>Global Evaluations: (Learning objectives #5, 6, 7,8)</u> Global Evaluations are performed by the ATS to demonstrate learning over time and to exercise sound decision-making.  Scenarios will be provided to the ATS based on the knowledge learned and the level attained in the Athletic Training Educational Program.  The Preceptor will notify the ATS of the global evaluations in advance.  The standard global evaluation grading sheet will be used each time, so please refer to this document for areas of focus for each global evaluation.  Global evaluations will occur during the course of the semester. If you are late or fail to show for a global you will receive a "0" for the global.

<u>Clinical Education:</u>
**Clinical Experience Evaluations:** Athletic Training Students will be formally evaluated twice

during their major clinical experiences by their assigned ACI.  These level-specific evaluations can be found on the Blackboard site for this course and in the Athletic Training Student Manual. The ATS will be evaluated using a Likert scale on clinical skills and professional attributes clinical experience (please refer to the Clinical Experience syllabus found on the Blackboard site for specifics regarding the papers).  The total percentage from the evaluation will be applied to the Clinical Experience Grading Scale (attached) to reach the student's grade.  The grades from the two evaluations will be averaged and factored into the final grade for the course accounting for 30% of the grade.

**Monthly Clinical Experience Journal**: The ATS will be required to write summative papers about his/her clinical experience.  The monthly journal must be a minimum of four full- pages in length. The objective of each journal is for the ATS to reflect on his/her clinical experience and the ATS's exposure to psychomotor skills used during the clinical experience.  While writing the monthly journal, the ATS should consider and include each of the following: 1) acknowledgment of the importance of developing and implementing a thorough, comprehensive injury and illness prevention program; 2) acceptance of the moral and ethical obligations to provide therapeutic agents, therapeutic rehabilitation or reconditioning to student-athletes and others involved in physical activity to the fullest extent possible; 3)the importance of the primacy of the patient; 4) the legal obligations to practice Athletic Training; and 5) the idea of professionalism.
- <u>Major Clinical Experience</u>:     Student will complete 3 monthly journals
- <u>Mini Clinical Experience</u>:     Student will complete 1 monthly journal
- <u>Affiliate Clinical Experience</u>:  Student will complete 1 monthly journal

### *Journals will be due to the Instructor each week.  Specific due dates indicated below.*

Monthly journals will count and be submitted for a grade in the semester in which the ATS is completing each clinical experience (fall/spring).  In the event the ATS has a winter clinical experience the ATS will submit a selected number of monthly journals in to the Instructors of ATTR 400 and ATTR 401.  The Instructor of each class will notify the ATS as to when and how many monthly journals are due.

**End of semester experience paper**:  At the conclusion of the ATS's semester, the ATS will be required to write a minimum five full-page paper regarding his/her entire semester experience. The purpose of the paper is for the ATS to reflect back over the entire semester incorporating all experiences, both classroom/ clinical or didactic/psychomotor. The paper should be affectively written and  incorporate at least 6 of the following content areas four of which should be 3,4,5, 7: 1) acknowledgment of the importance of developing a thorough, comprehensive injury and illness prevention program; 2) acceptance of the moral and ethical obligations to provide therapeutic agents, therapeutic rehabilitation or reconditioning to student-athletes and others involved in physical activity to the fullest extent possible; 3)the importance of a teamed approach to practice; 4) the idea of professionalism; 5) the legal obligations to practice Athletic Training; 6) the importance of advancing knowledge; 7) the importance of acknowledging culture differences and competence of; 8) personal clinical goals

and how successfully those goals were achieved; 9) primacy of patient; and 10) offer suggestions for improvement of the overall experience.  The paper is due at the end of the semester. Specific due date is indicated below.

*It is suggested that the ATS keep notes on any learning or practical applications that are observed, experienced or applied.  Each ATS should purchase a small pocket notebook to record daily notes for aid in the completion of the weekly clinical experience journals.*

Format: All journals, summative papers, and end of the semester experience papers must be typed, double-spaced, and have margins of one inch on all sides.

**Real-time evaluations (*Learning objective #1-6, 8):*** Real-time evaluations are those evaluations performed & completed by the ATS in a real- life situation and evaluated by the assigned Preceptor at the clinical experience.  The ATS is expected to complete the specified number of evaluations (ranging from upper-extremity evaluations to designing and implementing rehabilitation protocols) by designated due dates provided on the form.  The Individual record form is kept in the ATS's Gray, Clinical experience notebook.  The Preceptor indicates the specific skill performed by the ATS and records it on the record form.  In addition, a clinical SOAP note is provided as evidence of completion. The specific real-time evaluations due for this course are rehabilitation and miscellaneous.  The points (25 points per real-time evaluation) are included as part of the clinical education section.

**Clinical Experience Evaluation Grading Scale:** Preceptor, please utilize the table below to find the equivalent numerical/letter grade for the average score calculated on second page of the Junior Clinical Experience Evaluation.  The converted numerical grade is the grade to be turned into the Athletic Training Clinical III or IV instructor for course grading purposes.

| Average Score | Grade Equivalent | Average Score | Grade Equivalent |
|---|---|---|---|
| **4.46 - 5.0** | 94.6-100% A | **2.66 - 3.05** | 76.6-80.5% C |
| **4.16 - 4.45** | 91.6-94.5% A- | **2.36 - 2.65** | 73.6-76.5% C- |
| **3.96 - 4.15** | 89.6-91.5% B+ | **2.16 - 2.35** | 71.6-73.5% D+ |
| **3.56 - 3.95** | 85.6-89.5% B | **1.76 - 2.15** | 67.6-71.5% D |
| **3.26 - 3.55** | 82.6-85.5 % B- | **1.46 - 1.75** | 64.6-67.5% D- |
| **3.06 - 3.25** | 80.6-82.5% C+ | **0.0 - 1.45** | 0-64.0 % F |

Evidence Based Assignment: (Learning objectives # 1, 2,3,4) The purpose of this assignment is to now take the specific information of your clinical case and write it up for presentation.  Presenting is a graduation requirement.  All students will present at LOTS Multi-disciplinary conference on Gardner-Webb's Campus as a practice run.  In the event that a student was not accepted to a professional conference off-campus the presentation at LOTs will be used for the students' grade and meeting the graduation requirement.  Please note: students must submit and provide proof of submission; and be declined in order to have LOTS satisfy the above requirements. Students will be given more detail via

blackboard on the EBP assignments for this course.

Appendix L

Perception Surveys

**Perception Survey Questions**

Week 13 Survey:

1. How did you feel at the start of this semester about your ability to utilize course skills and knowledge in real-life situations?
2. How do you feel now about your ability to utilize course skills and knowledge after receiving the lesson on growth mindset?
3. What has influenced this change if any?
4. Please describe what you believe growth mindset is.


Week 16 Survey:

1. Tell me about a time when hard work contributed to your desired outcome. Please give as much explanation as possible.
2. Can you describe how you felt during the time hard work contributed to your desired outcome? Please provide as much detail as possible.
3. Please describe how you feel when you see others succeed at something you have difficulty doing?
4. In school, do you prefer to do things that are easy or hard? Please explain and give an example.
5. What do you believe about your intelligence and whether it can change or not?
6. Please tell me how you felt about the feedback you received on the applied decision-making activities in the second half of the course. Please provide as much as detail as possible.
7. How prepared do you feel in utilizing the course skills and knowledge in real-life situations?
8. How do you feel the new activities and lessons in the course have impacted how prepared you feel in utilizing the course skills and knowledge in real-life situations?
9. How do you feel about the choices you were given in completing the global assessments in the second half of the semester?
10. What impact did the ability to choose between one more challenging global or two less challenging globals have on your selection of globals during the semester?
11. Why do you feel you chose the way you did when making the selection between one more challenging global or two less challenging globals?
12. What factors determined your choice in selection of the globals?
13. Please explain whether you feel you have adopted a growth mindset during the course of this semester? Can you explain why you feel this way?
14. Please describe what you feel a growth mindset is.

Appendix M

Instrument Releases

Dweck's (2000) Instrument Release

| | |
|---|---|
| **In the following language(s)** | Original language of publication |
| **With incidental promotional use** | no |
| **Lifetime unit quantity of new product** | Up to 499 |
| **Title** | Learning from Failure: A Case Study on Developing Growth Mindset Through Academic Risk-Taking in an Athletic Training Program |
| **Instructor name** | ▇▇▇▇▇▇▇▇▇ |
| **Institution name** | ▇▇▇▇▇▇▇▇▇ |
| **Expected presentation date** | Aug 2018 |

**Note:** This item was invoiced separately through our **RightsLink service.**  More info                    $ 0.00

**Total order items:  1**                    **Order Total: $0.00**

Robinson's (2012) Instrument Release

January 11, 2018

Dear Dr. Linda E. Robinson,

I am completing a doctoral dissertation at �the████████████ entitled Learning from Failure: A Case Study on Developing Growth Mindset Through Academic Risk-Taking in an Athletic Training Program. I would like your permission to reprint in my dissertation excerpts from your dissertation titled: Academic Risk-Taking in an Online Environment, Univ. of Connecticut, 2012.
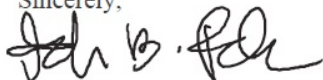
The excerpts to be reproduced are: Appendix B (Propensity for Academic Risk-Taking (PART) Survey and Appendix C (Appraisal/Perception of Academic Risk-Assessment (APARA) Survey.

My dissertation will be produced electronically and made available through the ████████████ Library and its publication partners. I am requesting permission to include the excerpts in current and future revisions and editions of my dissertation, and to grant others the right to reproduce my entire dissertation, including the excerpts described above, for educational, non-commercial purposes. These rights will in no way limit republication of the material(s) in any other form by you or others authorized by you. I am currently in the proposal phase of the dissertation; therefore, the title of my dissertation may change from the above title if needed. I will provide you with a copy of the final dissertation at your request.

Your signing will verify that you own the copyright to the above material(s).

If this meets with your approval, please electronically sign this letter below and return it to me at your earliest convenience. Thank you very much for your time and consideration.

Sincerely,

Sarah B. Rabe, M.S., LAT, ATC

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

Linda E. Robinson
Digitally signed by Linda E. Robinson
Date: 2018.01.12 07:28:39 -05'00'

Linda E. Robinson

Bryscaz's (2017) Instrument Release

January 29, 2018

Dear Dr. Lynn M. Brysacz,

I am completing a doctoral dissertation at ██████████████████ entitled *Learning from Failure: A Case Study on Developing Growth Mindset Through Academic Risk-Taking in an Athletic Training Program*. I would like your permission to reprint and adapt survey questions in my dissertation, excerpts from your dissertation titled: *Ready, Set, Succeed! Growth Mindset Instruction in a Community College Success Class*, Arizona State University, 2017
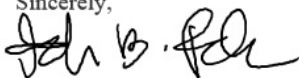
The excerpts to be reproduced/adapted are: Appendix C: Semi-Structured Interview Questions and Appendix D: Growth Mindset Lesson Plans.

My dissertation will be produced electronically and made available through the ██████████████ Library and its publication partners. I am requesting permission to include the excerpts in current and future revisions and editions of my dissertation, and to grant others the right to reproduce my entire dissertation, including the excerpts described above, for educational, non-commercial purposes. These rights will in no way limit republication of the material(s) in any other form by you or others authorized by you. I am currently in the proposal phase of the dissertation; therefore, the title of my dissertation may change from the above title if needed. I will provide you with a copy of the final dissertation at your request.

Your signing will verify that the above material(s) has been published in your dissertation and you are granting permission to use such material(s).

If this meets with your approval, please electronically sign this letter below and return it to me at your earliest convenience. Thank you very much for your time and consideration.

Sincerely,

*Sarah B. Rabe*

Sarah B. Rabe, M.S., LAT, ATC

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

_____

Dr. Lynn M. Brysacz, M.C., LPC, Ed.D

**Signature:** *Dr. Lynn M Brysacz*
Dr. Lynn M Brysacz (Jan 29, 2018)

**Email:** lynn.brysacz@gccaz.edu

Appendix N

Growth Mindset Lesson Plans

Lesson Plan 1

Lesson One: Learning and Your Flexible Brain
Learning Outcomes:
After this lesson, students will be able to:
1. Identify growth mindset as belief that the brain is flexible and learning happens with effort.
2. Recall the three principles of deep and lasting learning.
3. Identify something that she has learned well and write about how the three principles of deep and lasting learning were met and discuss with class.
4. Discuss how these principles can benefit them personally in their college career.

Summary:
Introduce principle of malleability of the brain through video, discussion, reflection of personal experience, and theory.

Step-by-Step Description:
Brief announcement of topic
Watch: The Learning Brain Video, (7 minutes)
Lecture briefly on growth mindset, the malleability of the brain, and three principles of deep and lasting learning. (15 minutes)
Students share something they are very good at and reflect on how they learned it. (10 minutes)
Read section 21-28 in text on Active Learner, discuss how they can benefit from this concept currently in their classes.
Reading: "Becoming an Active Learner" in On Course, Study Skills Plus 2nd. Ed. (Downing, 2011)

Lesson Plan Two
Lesson Two: Growth vs. Fixed Mindset
Learning Objectives:
1. Students will be able to recognize the difference between growth and fixed mindset beliefs.
2. Students will be able to recognize growth (creator) and fixed (victim) mindset language.
3. Students will be able to change victim statements into creator statements.
4. Students will recognize creator and victim attitudes in themselves.

Summary: Use visual images and reading from the text as well as instruction, discussion, and practice to help students recognize and adapt creator (growth) and victim (fixed) mindset language.

Step-by-Step Description:
Introduce topic with discussion.
Show: TEDx: The Power of Yet, Carol Dweck (10 minutes)
Creator vs Victim Language Give examples of creator and victim statements, work together to identify each statement. (10 minutes)
Power of TED (5 minutes)
Read and discuss: "The Language of Responsibility," On Course, Study Skills Plus 2nd Ed. (Downing, 2011)

Appendix O

Theme Analysis of Qualitative Data

| Terms to Identify | Excerpts from Data |
|---|---|
| Academic Risk-Taking/Risk-Taking/Risk Performance | |
| Growth Mindset | P2: Growth mindset is the ability to grow and change what your initial mindset is, to become more confident. |
| | P3: Growth mindset is your ability to grow intellectually and to know that you can learn more. |
| | P3: i have adopted the growth mindset because i feel like i can do anything now that i passed the big test and i know that if i try hard enough i can do anything |
| | P3: Growth mindset is the ability to learn more and know that you can learn anything you set your mind to. |
| | P4: I feel a growth mindset is deciding to complete challenge tasks to grow your mind and knowledge. |
| Fixed Mindset | |
| Learning/Growing | *P4 Not necessarily. Everyone has their own opinions it's just up to you as to whether you stick to your opinion or* ==learn== *to sway from it based on other people's opinions.* |
| | *P5: I wish I had more confidence, but I feel like I've learned more* |
| | *P5: As the semester went on I knew I learned more but my confidence level is low still.* |
| | *P1: When you grow better and are confident in the skill.* |
| | *P2: Growth mindset is the ability to grow and change what your initial mindset is, to become more confident.* |
| | *P3: Growth mindset is your ability to grow intellectually and to know that you can learn more.* |
| | *P4: I believe it is allowing your brain and the way you think to grow, and change based on how you have experienced situations in that past.* |
| | *P5: I prefer things that are easy because then I feel more confident about my grade, I also prefer the* |

*harder things so I can learn more even if my grade is poorly affected.*
*P5: I think the more I learn the more my intelligence is increased.*
P4: I believe I did because I know that in order to grow as a student I need to grow my knowledge and my mind.
P5: I think I have adopted mind growth because I feel like my intelligence has developed further.
P5: I think I have adopted mind growth because I feel like my intelligence has developed further.
P3: Growth mindset is the ability to learn more and know that you can learn anything you set your mind to.
P4: I feel a growth mindset is deciding to complete challenge tasks to grow your mind and knowledge.
P5: The ability to expand brain knowledge based off of what one learns and how they apply it.
P5: I wish I had more confidence, but I feel like I've learned more
P5: As the semester went on I knew I learned more but my confidence level is low still.
P1: Learning, my grade.

| Participation | P2 Participation should be graded on just participating, not what you have to say but the fact that you are talking or doing what you are supposed to do.<br>P4 I believe participation should be graded based off how much one actually does participate. It's one thing to just show up but it's important to put in effort |

and express your ideas. I believe THAT Is participation.

P5 I think they should assess participation by the amount of attention being given by the student. Not every class do I have a lot of questions so the classes with fewer questions I don't talk as much but am still paying attention.

P3 I think they should grade based on class participation which includes answering questions in class because I feel not all people do that but that it could help everyone in class.

P5 I feel like grades should be assessed by the amount of participation, not on right or wrong because asking questions or answering them is participation even if they are incorrect.

Error/Failure
Career Readiness/Prepare

P1: Better, more prepared.
P1: Better, more prepared.
P1: Fairly prepared, I think I would do well in the moment.
P5: I feel like I could be more prepared, but mostly in my confidence level.
P3: I feel more prepared then before in my clinical classes because i have new ways to think about things

knowledge

P3: I was overwhelmed and worried that I would not do well in real-life situations because I wasn't going to know all of my knowledge.
P3: I feel better but still sometimes am worried that I don't know enough.

P4: I feel better. After doing the lesson, it made me realize critical thinking is key and knowing the situation and what needs to be done according to what is most important.

P2: Growth mindset is the ability to grow and change what your initial mindset is, to become more confident.

P3: Growth mindset is your ability to grow intellectually and to know that you can learn more.

P5: I think this is the ability to expand the amount of knowledge that you have.

P3: I felt very frustrated and stressed studying so hard because i felt like i had so much to know and not enough time or smarts to know it.

*P4: I believe I did because I know that in order to grow as a student I need to grow my knowledge and my mind.*

P1: Expanding your knowledge.

P3: Growth mindset is the ability to learn more and know that you can learn anything you set your mind to.

P4: I feel a growth mindset is deciding to complete challenge tasks to grow your mind and knowledge.

P5: The ability to expand brain knowledge based off of what one learns and how they apply it.

P3: I was overwhelmed and worried that I would not do well in real-life situations because I wasn't going to know all of my knowledge.

P3: I feel better but still sometimes am worried that I

don't know enough.

P4: I feel better. After doing the lesson, it made me realize critical thinking is key and knowing the situation and what needs to be done according to what is most important.

P1: They were challenging but I had gained the knowledge to do them.

P4: Knowing that I needed to know the skills and be able to apply them for when it happens in the real world.

intelligence
Success

P4 No. I believe everyone has their own opinion and they are entitled to it. If a professor disagrees with your opinion, then it should not affect your success in the class.

P5 No, I feel like to be more successful I need to agree with my own views rather than someone else's.

P4 I think that everyone has their own ways of completing tasks and if it's successful, I say do it!

P1: I think intelligence can change, for better or for worse.

P3: i believe i am intelligent and i can change it

P4: I believe intelligence can be changed as long as you work hard to attain it.

P5: I think the more I learn the more my intelligence is increased.

P5: I think I have adopted mind growth because I feel like my intelligence has developed further.

P1: I wanted to be challenged while still obtaining a good grade. Studying before allowed

| | |
|---|---|
| | me to choose the harder and still be successful. |
| Perception/ /Feeling/Belief | P3 No, I believe that a good conversation about the right answer is always good |
| | P4 No. I believe everyone has their own opinion and they are entitled to it. If a professor disagrees with your opinion, then it should not affect your success in the class. |
| | P3 I think they should grade it more aggressive and compare in the class because some people answer 1 question every week when others try and answer every question all week long and i do not believe those people should get the same grade |
| | P4 I believe participation should be graded based off how much one actually does participate. It's one thing to just show up but it's important to put in effort and express your ideas. I believe THAT Is participation. |
| | P4: I believe it is allowing your brain and the way you think to grow, and change based on how you have experienced situations in that past. |
| | P3: i believe i am intelligent and i can change it |
| | P4: I believe intelligence can be changed as long as you work hard to attain it. |
| | P5: how I was feeling, and what mood the teacher was in |
| Confidence | P4: I felt okay. As the semesters go on and the more I practice my skills and scenarios, I seem |

| | | |
|---|---|---|
| | | to feel more comfortable with them and my confidence slowly improves. |
| | | P5: I wish I had more confidence, but I feel like I've learned more |
| | | P5: As the semester went on I knew I learned more but my confidence level is low still. |
| | | P4: I felt okay. As the semesters go on and the more I practice my skills and scenarios, I seem to feel more comfortable with them and my confidence slowly improves. |
| | | P5: I wish I had more confidence, but I feel like I've learned more |
| | | *P5: As the semester went on I knew I ==learned== more but my ==confidence== level is low still.* |
| | | P5: I feel like I could be more prepared, but mostly in my confidence level. |
| | | P3: I did great on the challenging global which boosted my confidence |
| Grades/Scores | | P1 I usually speak my mind. Grades should not be affected by opinions. |
| | | P2 Yes, the professor has control over my grades and even if they assure me that my opinion would not affect my grades I would still be hesitant to disagree with them. |
| | | P2 Sometimes, I think the professors can be biased at times and it could affect your grade. |
| | | P2 Participation should be graded on just participating, not what you have to say but the fact that you are talking or doing what you are supposed to |

do.

P3 I think they should grade it more aggressive and compare in the class because some people answer 1 question every week when others try and answer every question all week long and i do not believe those people should get the same grade

P4 I believe participation should be graded based off how much one actually does participate. It's one thing to just show up but it's important to put in effort and express your ideas. I believe THAT Is participation.

P2 They should grade it as your speaking in class, not by your answers

P3 I think they should grade based on class participation which includes answering questions in class because I feel not all people do that but that it could help everyone in class.

P5 I feel like grades should be assessed by the amount of participation, not on right or wrong because asking questions or answering them is participation even if they are incorrect.

P4: There was a time when I was working on a group presentation and my partner wasn't putting forth effort so I busted my tail to get my work done and in turn I got a better grade than he did because I worked hard to get it done.

P3: i like to get good grades but i like to do the hard things because when i accomplish them i feel better.

P5: I prefer things that are easy

because then I feel more confident about my grade, I also prefer the harder things so I can learn more even if my grade is poorly affected.

P1: I wanted to be challenged while still obtaining a good grade. Studying before allowed me to choose the harder and still be successful.

P1: Learning, my grade.

Appendix P

Data Analyzation and Comparison

*Quan/Qual Convergent Data Analysis Comparative Matrix for RQ1*

| Qualitative data | | Quantitative data | |
|---|---|---|---|
| Collected | Data | Collected | Data |
| **PART Survey Q13-16** | Q13 Pre/Post: 1) sharing opinions is important and 2) course evaluation should not be connected to opinions | **PART Survey Q1-12** | Medium level of academic risk taking |
| | Q14 Pre: positive support for thinking outside of the box and embracing new ideas: 1) teachers like it and 2) makes it more interesting | **Theories of Intelligence Scale** \*remember one didn't answer all post | Intelligence can be changed Pre: levels of agree: 17 levels of disagree: 3 |
| | Q14 Post: support of creativity | | Intelligence can be changed Post: levels of agree: 15 levels of disagree: 1 |
| | Q15 Pre: acknowledgement of the difficultness of differing opinions but also a theme of compromise | | Intelligence can't be changed Pre: levels of agree: 18 levels of disagree: 2 |
| | Q15 Post: acceptance of differences | | Intelligence can't be changed Post: levels of agree: 16 levels of disagree: 0 |
| | Q16 Pre: participation should be graded through interaction, attention, and effort; not based on right or wrong answers | **Confidence in One's Intelligence** | S1: increased/In: 3 maintained/M: 1 lack increased/LIn: 0 lack maintained/LM: 1 |
| **Task-Choice Goal Measure Q1** | Learning: 4 P/no challenge: 1 | | S2: increased/In: 0 maintained/M: 4 lack increased LIn: 0 lack maintained/LM: 1 |
| **Questionnaire Goal Choice Item Q4** | Pre: Grade: 5 Challenge: 0 | | S3: increased/In: 2 maintained/M: 2 lack increased LIn: 1 lack maintained/LM: 0 |
| | Post: Grade: 3 Challenge: 1 | **CIOI-QGCI** | P1: didn't complete post CIOI P2: 7/8 GM-MI/InL P3: 8/8-In/M P4: 8/8-M P5: 8/8 In/M |
| | | **Questionnaire Goal Choice Item Q1-3** | S1: Learning: 4 Performance: 1 S2: Learning: 2 Performance: 3 S3: Learning: 3 Performance: 2 |
| Analysis | | Analysis | |
| PART→ sharing, new ideas, interesting, compromise/accepting of new ideas **PARTICIPATION MORE THAN RIGHT OR WRONG** Task Choice→ Learning Goals Goal Choice→ **GRADES ARE STILL MORE IMPORTANT THAN LEARNING** | | PART→ **MEDIUM LEVEL=GROWTH MINDSET/GOOD** Confidence→ S1: Usually/Wonder I am Intell S2: Usually/Often not able to problem solve S3: Confident/not in intel ability | |

| Results | Data Results |
|---|---|
| Sharing/creativity <br> **Participation more than being right→discussion?? Learning?** <br><br> Learning goals <br><br> Ultimately grades are more important than learning *(handwritten in red: why?)* | **MED PROPENSITY FOR ART** <br><br> Confidence→ confident that are intel increase... feel more confident they are intel?? Problem solving—usually **MAINTAINED** <br> INTELL ABILITY→SPLIT but used term VERY and PRETTY *(handwritten in green: BIG GAP in data)* |

### Compare and Contrast

They SAY: important to discuss→participation over being right
Learning goals in one measure BUT performance in another—GRADES ARE IMPORTANT

Medium level for propensity: like/used to taking academic risks?

Seem confidence in intel and when term like very and pretty are used in intel ability they are split but those terms are close.
Confident but still seems to be hesitation with problem solving—so they think they can but still see being wrong as not good?

### Interpretation/Triangulation (Qual + Quan)

**RQ1: What is the impact of implementing academic risk-taking activities on students' scores on academic risk-taking and growth mindset measures?**

Does the qualitative and quantitative data answer the research questions? *(handwritten in green: YES)*
QUAL: Sharing opinions are good- should not be a negative aspect for pre/post—THIS MAINTAINED—GOOD
: LEARNING GOALS ARE IMPORTANT BUT STILL STRUGGLE WITH A GOOD GRADE

QUAN: Medium ART propensity
: OVERALL CONFIDENT IN INTEL

Does the qualitative and quantitative data report like results for the research questions?
YES: interventions maintained or improved scores BUT NOTE TRIANGULATION WITH grades and maintained confidence on problem solv...

*(handwritten in red: future research)*

### Questions

What patterns/common themes emerge around specific items in the data?
Sharing opinions are important and differing opinions shouldn't be held against students
New ideas/embrace/creativity—but only bc teachers like it?
Diff opinions are difficult but important to compromise/accept differences
Important for participation: interaction and effort not right answers
  – How do these patterns (of lack thereof) help to shed light on the broader study questions?
  – Support- student data maintained or increased in GM and ART overall
Are there any deviations from these patterns?
Teachers like it—interesting
  – If yes, what factors could explain these atypical responses?
  – Wanting to please instructors?
What interesting stories emerge from the data?
Understanding of GM and ART
Grades are ultimately important
  – How can these stories help to shed light on the broader study questions?
  – Effects of error are still present... due to grades?
Do any of the patterns/emergent themes suggest additional data needs to be collected?
Notes for future research...
  – Do any of the study questions need to be revised?
  – No

      Do the patterns that emerge support the findings of other corresponding qualitative data analysis that have
      been conducted?
      Yes

*Quan/Qual Convergent Data Comparative Matrix for RQ2*

| Qualitative data mid | | Qualitative data end | |
|---|---|---|---|
| Collected | Data | Collected | Data |
| Perception Survey 13 | Q1: most participants felt nervous and overwhelmed in their ability to perform skills due to uncertainty | Perception Survey 16 Q1-5, 13-14 | Q1: effort and determination |
| | Q2: positive, revealing a feeling of comfort after the lesson | | Q2: feelings of stress, fatigue, frustration, and then elation upon completion of the work |
| | Q3: practice in working through the skills was a main contributor | | Q3: range from support for the other's success to frustration. P5 revealed a personal reflection on intelligence |
| | Q4: a development of confidence and belief in the benefits of learning more and expanding from this knowledge | | Q4: ease of tasks may increase confidence and good grades, but participants also desire to be challenge *one no response |
| | | | Q5: beliefs that intelligence can be changed *one no response |
| | | | Q13: felt as if they had adopted a growth mindset over the course of the semester. Reasons for such assertions included hard work, increase knowledge, and increase motivation in completing tasks. |
| | | | Q14: learning and expanding knowledge and application of knowledge |

| Analysis | Analysis |
|---|---|
| Nervous/overwhelm/uncertain | Challenge→ effort/determined |
| Lesson=comfort | Struggle but then elation |
| | When others success—resent? Personal reflection of failure. |
| Working through→effort? | |
| Develop confidence. knowledge | INTELLIGENCE CAN BE CHANGED |
| | ADAPTED GM→ hard work/increase knowledge/motivation |

| Results | Results |
|---|---|
| Nervous but with time and practice. better | Struggles of stress but overall positive |

Compare and Contrast

There was growth

Interpretation/Triangulation (Qual + Quan)

**What is the impact of participating in academic risk-taking activities on students' perceptions of error/failure in athletic training courses?**

Does the qualitative data answer the research questions?
YES- at first nervous then confident, want challenge, hard work
Understand easy may make feel good but want to learn…

*Quan/Qual Convergent Data Comparative Matrix for RQ3*

| Qualitative data mid | | Qualitative data end | |
|---|---|---|---|
| Collected | Data | Collected | Data |
| Perception Survey 13 Q1-3 | Q1: most participants felt nervous and overwhelmed in their ability to perform skills due to uncertainty | Perception Survey 16 Q6-12 | Q6: feedback was helpful, assisted in decision making and improving |
| | Q2: positive, revealing a feeling of comfort after the lesson | | Q7: preparedness in utilizing skills in real-life situations |
| | Q3: practice in working through the skills was a main contributor | | Q8: increased effort to complete tasks, and an increased in preparedness |
| | | | Q9: enjoyment with the choice as a way of allowing them to choose to be challenged |
| | | | Q10: the choices allowed them to challenge themselves |
| | | | Q11: more enjoyment with being able to challenge themselves with the choices |
| | | | Q12: learning, challenge, desire to be prepared, and environmental factors such as the teachers mood |

|  Analysis | Analysis |
|---|---|
| Nervous/overwhelm=control?<br>Comfort→ effort/practice | Feedback is helpful→improve decision making<br>Choice→ still want to be challenged<br><br>Teacher influence? |
| Results | Data Results |

Compare and Contrast

Moved to understanding feedback as learning, want to be challenged

Interpretation/Triangulation (Qual + Quan)

**What is the impact of participating in academic risk-taking activities in athletic training courses on students' perceptions of preparedness in utilizing the course skills and knowledge in real-life situations?**

Does the qualitative data answer the research questions?

Yes-effort improves, feedback improved