Learning from the Student’s Perspective

by

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# **Abstract**

 Learning science takes on the challenge of understanding how students learn and the implications of the learning and studying process on student achievement in college. This thesis began with the assumption that student learning can not be defined by quantitative data, but rather that learning occurs as a function of experiences, attitudes and approaches from individual students. This research set out to discover what study practices students use and why they use them. Using qualitative methods, this research determined the level of motivation and specific study approaches that first-year students at a large, regional, comprehensive university had for their courses. The result was the discovery that even when exposed to effective study methods, students do not apply effective methods to their studies. This thesis begins to question why students know how they study more effectively but still do not. The answer might simply be a lack of motivation. This implies there is a story behind the GPA and the grades. Successful students on the surface might not have learned anything from their college courses. With this recognition of the student perspective, the scope of learning in college can be wholly evaluated.

*Keywords:* learning science, grit, study habits, qualitative research

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# **Introduction**

**The Problem**

It is important to determine the extent to which college campuses are facilitating and propagating an environment for students to learn. A frequent criticism of colleges across the nation is that students are not learning. If students do learn things from their college courses, it is not in consideration of long-term goals or with conscious effort toward attaining a college degree (Arum and Roksa, 2011). Perhaps students are not learning because they fail to utilize effective study techniques. Learning science research demonstrates that distributive practices, summarizing notes, and practice testing are highly effective study strategies. Yet, the study methods students use most (cramming and re-reading notes) are the least effective (Dunlosky, Rawson, Marsh, Nathan, and Willingham, 2013). The study and learning habits that students use affect the amount of information they learn in college courses. Another factor affecting learning is time spent studying. On average, college students report spending less time on academic work in college than they spent in high school, with more than 75% of first-year students stating they study less than ten hours a week (Eagan, Stolzenberg, Zimmerman, Aragon, Whang, and Rios-Aguilar, 2017). Not only is this frustrating for professors, it is also inherently destructive to a student’s success in college in terms of learning. Considering a larger picture, developing effective learning techniques prepare students to be thriving contributors to society through their chosen fields by preparing them for their eventual careers by increasing retention of content covered in class and providing a skill set from which students can learn any new content efficiently.

Many students come to college not only poorly prepared by prior schooling for highly demanding academic tasks that ideally lie in front of them, but – more troubling still – they enter college with attitudes, norms, values and behaviors that are often at odds with academic commitment (Arum and Roksa, 2011, p. 3).

Often, incoming first-year students rarely studied in high school or have never taken classes difficult enough to require intensive studying, which is true for many university students and the students in this study. Therefore, incoming students are not often exposed to the study process they would need to use to be successful or seem to not be using effective learning techniques (Arum and Roksa, 2011; Dunlosky, et al., 2013). In cases where they do know effective learning techniques, students choose not to apply them in their daily coursework because of lack of time, effort or motivation.

Rather than engaging in the material and learning the information to apply and use later, students continue to simply cram for exams and fail to store the information in their long-term memory (Charlene, Rajalakshmi, and Suresh, 2010). This means that shortly after an exam, students cannot remember that information, so it does not prove useful in the future.

Integral aspects of the student perspective on learning include how they study, their knowledge of research-proven learning and study techniques, and how exposure to research-proven methods contributes to their study practices in college. It is important to observe students and their study habits to better understand why they do or do not utilize the techniques that research demonstrates will lead them to better grades and overall better learning. Research in student learning is not just beneficial to students; it is helpful for professors to be aware of or integrate information that will lead students to achieve in the courses they are overseeing. This research and the effect it can have on student achievement transcends college life and academics; it lays a foundation for effective adulthood and prosperous contributors to society.

**Context**

Learning science emerged as a prevalent research theme primarily in the 1970s and has only grown in significance. One early study focused on the effects of note-taking on retention. Annis and Davis (1978) suggested that the highest-scoring students used both their own notes taken from lectures and the lecturer’s notes to study for exams. Perhaps, however, what is most relevant to this current study is the mention that students in the research group expressed their distaste for being forced to take notes, “since they usually *never* take notes,” (Annis and Davis, 1978, p. 109).

Extensive research on more prominent learning techniques took place largely in the late 1970s and early 1980s, which will be discussed in the literature review. Over time, research has shifted from what students were doing wrong to how instructors and institutions were not taking their role as educators seriously (Arum and Roksa, 2011). More recently, research has shifted toward neuroscience and cognition’s role in student learning. Cognitive and educational development occurs through combinations of social, emotional and cognitive growth intertwined to cultivate student’s performance and success (Jones and Kahn, 2017).

Learning occurs in the brain through a complex process. Memories exist in the brain as linked cells that fire together in certain patterns that the brain processes as pictures, thoughts or emotions (Carey, 2014). Learning happens as humans develop and learn emotions, new thoughts and perspectives about the society they live in (Jones and Kahn, 2017). The connections that cells make to associate a certain event or feeling strengthen with repetition, making memories more vivid the more a similar feeling or thought is provoked (Carey, 2014). The idea is that the more something is called upon out of memory, the more likely it is to be remembered clearly with the same cell connections as before.

Measuring learning and academic performance has always proven to be a difficult task. Recently, interest in college students has grown to determine effects of testing on their performance. While unique standardized testing like the Collegiate Learning Assessment has emerged to determine how much students have learned in college, the United States has fallen behind in college graduation rates compared to other wealthy nations, ranked at fourteenth, with 42% of 25-34-year-olds holding a higher education degree (OECD, 2012; Arum and Roksa, 2011). This shows that there is a gap forming between students and their ability to graduate, perhaps because they are not learning the information for their courses. The questions that come out of recent learning research begin with how students are applying themselves in college courses and what factors make students successful learners in college environments that do not always promote deep learning (Dunlosky, et al, 2013; Duckworth, Peterson, Matthews and Kelly, 2007; Arum and Roksa, 2011).

 However, quantifiable data is not always an accurate depiction of college students’ successes. Some research shows there is no correlation between the number of hours spent studying and higher exam scores (Gurung, 2005). This research suggests it is not just the amount of time spent studying that matters, but rather the quality of studying techniques that affect the learning process. For students, this might be good news because average students can spend as little as four hours studying for an exam (Gurung, 2005). High ACT scores or high school GPAs often do not indicate high college performance. A significant part of student success and quality of learning comes from previous experiences and habits that form before they attend college (Mayer and Ambrose, 2010). Approaches and attitudes toward studying and determination also play a key role in overall academic achievement (Duckworth, Peterson, Matthews and Kelly, 2007).

This thesis outlines the significance of students’ approaches to studying and learning. Generalized student data on the number of hours spent studying and types of study methods used simply does not paint a complete picture. Aside from the often-misinterpreted definition of studying for most students, there is also a disconnect between the data and the students’ stories.

When quantifying students study practices, it is difficult to discern their motivations or thought processes. GPA and test scores alone do not accurately depict a student’s educational experience or the influences behind their methods. Additionally, students often overexaggerate their test scores and GPAs when asked to report (Arum and Roksa, 2011). This type of data could become unreliable in determining the actual outcome of learning. While this study does utilize those numbers and similar data, they make up a smaller part in providing a broader depiction of the students. This study was constructed to understand how a small group of students study, with particular emphasis on determining why they use those practices. While the qualitative data in this study cannot be generalized to all students or even all university students, the pertinence and future significance of the students’ perspective is an emerging element of student research.

**Outline**

This research focused on five first-year students at a large, regional, comprehensive university. Through focus group sessions and written assignments, each student described the study methods they used, the way they understood proven study techniques, and how their chosen methods of studying affected their relative academic success. This study was undertaken with the assumption that there are research-proven study techniques but that students often do not utilize those effective study methods. The purpose of this study was to determine how students actually study and approach their schoolwork.

This thesis will progress by outlining relevant learning science research that informs those study techniques which are now considered to be most effective. This review of literature will define each study technique that is featured in the student interviews and assignments. Additionally, previous research that displays the differences between effective learning techniques and the techniques that students realistically utilize will be included. This important distinction is a fundamental aspect of this research. Grit, an aspect of students’ approach to their work, will also be defined.

Next, the methodology and hypotheses for this research project will be outlined. These sections will summarize the rationale behind the usage of qualitative research methods and the utilization of a five-person study with focus groups and individual assignments. Following these sections, the findings of the research will be expanded. The key terms in the literature review will be considered respectively and the students’ perspectives will be presented. The results of the study will be described and analyzed through the student’s individual perspectives, lending itself toward functions of academic grit and attitudes toward learning and studying.

Finally, the discussion section will outline ways that future research can expand on this study. It will identify areas of interest that academic research should target to further engage student success and improve studying techniques in college students. The conclusion will summarize the research done for this project and describe the relevance of the research to Middle Tennessee State University and similar research in this field.

# **Literature Review**

 Three main areas of previous research largely contributed to the outcomes of this research: learning science, research of study strategies, and academic grit. Understanding learning as a process is an integral part of student research because it lays a foundation and rationale for certain types of approaches and attitudes. In determining how the students in this research approach learning and studying for their college courses, the learning process provided a guideline for the different approaches. Study strategies have long been researched, and previous research in this field contributed to creating a basis for student achievement in this research. Methods that have been proven effective for learning in previous research could be compared with the students’ academic success in this research to determine the role of the application of study techniques on academic performance. Academic grit, a concept fairly new to the learning sciences field, proved to be a driving, yet often unnoticed, part of this research, which is further explained in the discussion section of this thesis. Grit is perhaps contributing to student success or lack thereof throughout this study, but it is especially relevant as a function of students’ reflections on their own work.

Learning science is a broad field with many aspects including memory and retention, instructor applications, and student’s ability. From this research, the focus is on how learning works in students. Those aspects are described in detail in the following literature review.

In *How Learning Works*, Mayer and Ambrose (2010) define learning as a process, not an outcome, and “not something done to students, but rather something students themselves do” (p. 3). Learning is a developmental process that, while it can be fueled by instructors, must come from the students’ experiences over time. In research about learning from the neurological perspective, there are two key elements: encoding and retrieval, which function as completely different cognitive processes (Davis, Chan and Wilford, 2017).

Retrieval is the process of recalling information a student has already learned (Davis, Chan and Wilford, 2017). Presumably, students come into each new semester with information they have learned from high school, previous college courses and past experiences. If the courses are related, a student would hope their prior knowledge and retrieval of already-learned information would aid them in achieving success in a course. Effective learning of information occurs when students can recall this information on command and use it in new contexts.

The second part of this learning process is in learning new information, or encoding (Davis, Chan and Wilford, 2017). Because learning is a process and not an event, it is key that students master basic concepts in order to construct a deeper learning of their fields of study. As students get into more difficult courses in their major, the idea is that both retrieval and encoding work in tandem to contribute to learning the necessary information. The key is for students to incorporate new information into their long-term memory, making it easy to retrieve in the future.

The learning process described above is represented in the following figure:

Information needed to comprehend new information

 **Figure 1.** The Learning Process

**Long-**

**Term**

**Memory**

Information to

be stored permanently

Information Selected for Processing

**Working Memory**

**Sensory
Memory**

Sensory
Information

Source: Korstange and Krahenbuhl, 2018, p. 26

Techniques for processing new information

For students, the goal of learning is to be able to recall information discussed in class for various exams. For that type of learning to occur, the student must pay careful attention to the content considered in class, seek to connect that information to their previous memories as much as possible, and use successful study practices (discussed below) to assist in the encoding of the information into their long-term memory.

**Study strategies**

Students use a variety of study techniques for their college courses. The methods that students prefer are at least based on varying exposure and background, the strategies their high school teachers advocated, and methods students learned on their own. Therefore, student’s learning experiences become highly individualized. While some students know and often utilize those study methods proven to be effective in learning science research, others do not use them, either because they simply never learned them or because they prefer other methods. The reality is that the study methods students choose to use do more than help students achieve a high score on an exam or pass a course; they affect the way students learn the material. If the goal of college in the United States is for students to learn information to use in their lives and careers, the importance of effective learning cannot be overstated. These effective methods are often verified by student performance, learning and retention.

 This research focuses on learning techniques such as summarization, rereading, mnemonic devices, practice testing, distributed practice, highlighting and underlining, interleaved practice, and associating facts with pictures, methods thoroughly researched in other studies (Dunlosky, et al, 2013; Annis and Davis, 1978; Gurung, 2005). Below, these terms researched by Dunlosky, et al. (2013) will be defined and listed according to their utility in the learning process and utilization by the students.

 **Summarizing.**

Summarizing, considered a low-utility learning technique, works as a function of external storage to later be returned to as additional study material and as a function of encoding new material while taking notes (Di Vesta and Gray, 1972; Dunlosky, et al., 2013). It works more effectively in situations of encoding as students decipher significant information and summarize parts of a lecture in note-taking, and it is assumed that it is ineffective to utilize summarizing strictly for external storage (Di Vesta and Gray, 1972). While summarizing information in the encoding process is beneficial, it is deemed a learning technique of low-utility because of the curve of making summaries effective for students. Students must be taught to accurately decipher significant information from a lecture or reading and it requires more effort than in unintentional summaries (Dunlosky, et al., 2013).

**Rereading.**

Rereading is a frequently utilized learning technique among students. Rereading works as a function of repeated exposure to material, causing greater likeliness of recall. It also appears to be an unreliable measure of retention of information because it is likely that only functionally important information is remembered (Bromage and Mayer, 1986). There are also limitations in terms of the effectiveness and timing of rereading as a learning method. Research suggests that mass rereading works better for an immediate exam but spaced rereading leads to more retention for a delayed exam (Rawson and Kinstch, 2005). Despite their research categorizing rereading as low learning utility, Dunlosky and his colleagues mention, “Even high-performing students appear to use rereading regularly” (p. 27). This suggests that students are likely utilizing rereading along with more effective methods to attain academic success.

**Highlighting and underlining.**

Highlighting and underlining are two of the most popular and preferred methods used by students, and that is true for the students in this study as well (Annis and Davis, 1978). They are not altogether time-consuming, require little effort to complete, and they are not skills that must be taught. The idea behind these study methods are to highlight or underline important information, key words, dates, vocabulary and otherwise significant text while reading material for a class. These methods work by searching and selecting important information to encode into learning, making large amounts of information easily digested (Blanchard and Mikkelson, 1987). They are considered to be low in effectiveness because they often support isolated memorizing and retention of the information highlighted or underlined, instead of relating material to previous knowledge or other relevant study materials (Dunlosky, et al, 2013). Students may recognize the material more but fail to process the information into their long-term memory. It is also found to be an ineffective method of studying in a situation where students know little about the subject, as it then presents itself as difficult to pick out which areas of the information are most significant. For the reasons listed and extensive research done among many generations of students, highlighting and underlining are deemed to be of low-utility in learning effectiveness. Previous research on the utility of these methods is mixed as well (Dunlosky, et al, 2013; Annis and Davis, 1978; Bell and Limber, 2009). This is because it can be used effectively if the information deemed important is reviewed and reassessed as study material, instead of highlighting or underlining and never returning to the material marked significant (Blanchard and Mikkelson, 1987). In courses with heavy reading, noting important words or phrases can be a valuable tool to refer back. The limitations of these methods, however, exist in the student’s ability to accurately determine the significant aspects of the reading material. Additionally, it is proven to be an ineffective method if students utilize material highlighted or underlined by a previous student, meaning that this method cannot be used effectively as a way to quickly study for an exam (Bell and Limber, 2009). As with rereading, the analysis suggests that highlighting and underlining can be tools used by successful students among other, more robust techniques.

**Mnemonic devices.**

Mnemonic devices work as a function of encoding unfamiliar information is a way that will be easy to retrieve (Mastropieri, Scruggs and Levin, 1985). This is often used in the study of a second language for vocabulary:

To use this mnemonic, the student would first find an English word that sounds similar to the foreign cue word, such as dentist for “la dent” or cliff for “la clef.” The student would then develop a mental image of the English keyword interacting with the English translation. So, for la dent–tooth, the student might imagine a dentist holding a large molar with a pair of pliers (Dunlosky, et al., 2013, p. 22).

By creating a mnemonic device, the idea is to make the information easier to retrieve later on when a student remembers the associations with cues from the vocabulary. Research shows that while it can be a moderately effective learning technique in short-term retention, it is unreliable as a method for long-term retrieval because it does not sustainably encode into a student’s memory (Campos, Gonzalez and Amor, 2003). It is considered to be of low effectiveness because of its inability to translate to diverse course subjects and its limitations in extensive learning. Often, mnemonic devices can become muddled in alternative representations or fail to be retrieved because of the intricacies of the cues for the device. To become an effective method for studying, they must be consistently practiced and recalled in order to achieve long-term results (De Beni and Moè, 2003). This is also assuming the mnemonic device itself does not prove more memorable than the actual content.

 **Associating facts with pictures.**

The association of facts with pictures are learning methods that make retention easier by relating new information to a spontaneous visual representation. Essentially, the context of the visual image determines the effectiveness of the learning tool. It lends more memorable and long-term results in courses with natural images correlating to the material. This premise is for students to mentally imagine or visually express images that represent information from text. The idea is that it would draw from a student’s prior knowledge and make connections that promote better understanding (Dunlosky, et al., 2013). While this method might be more effective if an image is provided to students in the learning process, it is not effective when students are left to create a visual representation. The self-regulated creation of a visual aid for the purpose of studying can lead to cognitive overload, prohibiting students from retaining the excessive information in front of them (Leutner, Leopold and Sumfleth, 2009). It can hinder effective learning if students are putting extensive effort in learning new material and essentially creating new visual material to learn as well. The use of imagery in learning new information is also limited to the extent that the presented information is compatible with the creation of effective and related imagery (De Beni & Moè, 2003).

**Practice testing.**

Practice testing, often regarded as retrieval practice, is one of the most verified and most useful learning techniques (Rawson and Dunlosky, 2011; Dunlosky, et al., 2013; Roediger and Butler, 2011). It is the concept of practicing the retrieval of information from external storage and short-term memory in order to better retain it in long-term memory, especially through gapped intervals of practice (Roediger and Butler, 2011; Rawson and Dunlosky, 2011). Though originally thought to be useful for its ability to assist the student in determining which information they have learned, it has developed into the practice of effortfully calling upon knowledge for longer retention. The research of Roediger and Butler (2011, p. 6) found the following: “First, retrieval practice often produces superior long-term retention relative to studying for an equivalent amount of time. Second, repeated testing is better than taking a single test.” Practice testing works better through longer periods of time and after multiple retrievals, and it proves to be more effective if there is significant time between practicing sessions (Rawson and Dunlosky, 2011).

**Distributed practice.**

Distributed practice is a learning technique supported by robust research and significant student performance and is therefore considered a method of high utility in this research. According to Benjamin and Tullis (2010), distributed practice works by “increasing performance as a function of spacing derive[d] from an increasing degree of independence between the individual study events” (p. 230), existing as the exact opposite learning method to cramming. It is highly effective because it promotes distributed and multiple encoding of the same material into memory instead of recalling material shortly after the original encoding (Cepeda, et al., 2006; Dunlosky, et al., 2013). The idea is that learning sessions would be spaced over time in preparation for an exam, allowing adequate time for longer gaps between sessions. It is also the case that the time between initial and subsequent encoding facilitates a forgetfulness that can be advantageous to overall learning:

Spacing causes forgetting between learning events –whereas massing prevents such forgetting – and forgetting an initial presentation increases the potency of encoding on subsequent presentations (Vlach, Sandhofer, and Kornell, 2008, p. 164).

Because of this, distributed practice is a valuable learning technique for students, especially in long-term retention of material.

 **Interleaved practice.**

Similarly, spacing the content of encoded material produces higher retrieval performance due to the exposure of practical situations of differing encounters with information (Kang and Pashler, 2011). This method is known as interleaved practice, or the spacing effect (Dunlosky, et al., 2013; Kang and Pashler, 2011; Rohrer and Taylor, 2007). The reality of learning is that information is not likely to be presented in identical ways more than once, so spacing material and distributing information is likely to promote more effective retrieval in an exam setting (Rohrer and Taylor, 2007). It is considered, for this research, a moderate-utility method but with potential for more effectiveness when used in conjunction with other effective methods. Students benefit from this method as a function of inductive learning, “learning to generalize from relevant prior encounters” (Kang and Pashler, 2011, p. 97) because it allows them to draw on past experiences to aid in successful retrieval. This transcends basic learning into interpolating information and encoding information in distinct contexts.

The following table summarizes the study methods discussed above and lays out their usefulness as categorized by Dunlosky and his colleagues (2013). Finally, these methods are correlated with the study methods that the students in this study reported using.

**Table 1.** Learning Techniques and Their Effectiveness

|  |  |  |
| --- | --- | --- |
| Technique | Effectiveness | Students Using This Method(out of 5) |
| Highlighting and underlining | Low | 4 |
| Mnemonic devices | Low | 1 |
| Associating facts with pictures | Low | 1 |
| Rereading | Low | 5 |
| Summarizing  | Low | 0 |
| Practice testing(including flash cards) | High | 2 |
| Distributed practice | High | 0 |
| Interleaved Practice | Moderate | 0 |

Source: Dunlosky, J., Rawson, K., Marsh, E., Nathan, M. and Willingham, D. (2013). “Improving Students’ Learning with Effective Learning Techniques”. Psychological Science in the Public Interest, 14(1), p. 45.

The third column drove the results of this research because the most frequently used study methods by the students in this study are the methods Dunlosky calls ineffective. The highly effective methods are those used infrequently.

 Unsurprisingly, each method extensively researched and determined to be effective requires significant effort from students. For this reason, students often default to their habitual methods or the easiest methods because of their lack of motivation to put effort into their college courses.

**Academic Grit**

For over a century, research has made it clear that intelligence alone is not enough for success. Duckworth discovered a non-cognitive trait that correlates with academic achievement. She calls the trait “grit,” which she defines as “perseverance and passion for long-term goals” (Duckworth, Peterson, Matthews and Kelly, 2007, p. 1). According to Duckworth, it is in this trait that drives students’ success as they are more likely to work hard for long-term goals. Perhaps more noteworthy is Duckworth’s suggestion that grit is not related to intelligence but rather has the opposite relationship. It is more likely that less intelligent students have increased levels of grit.

Though not a comprehensive test, Duckworth has a basic set of questions she uses to determine whether a student may be gritty. It includes questions about new projects, obstacles, interests, goals and work ethic. Upon completion of the questions, grittiness is measured on a scale of zero to five, with a five being the grittiest (Duckworth).

Students are often shown to do what they have always done (Mayer and Ambrose, 2010). If students have grit, they are more likely to achieve higher than people of equal or greater intelligence because of perseverance and attention to their goals; “in fact, many were awed by the achievements of peers who did not at first seem as gifted as others but whose sustained commitment to their ambitions was exceptional” (Duckworth, Peterson, Matthews and Kelly, 2007). It is clear that the attention to long-term goals drives a motivation to study effectively in college courses because of that desire to succeed. In this research, students that were not aware or introspective of their goals did not utilize effective study methods. This study also showed that the most intelligent students on paper are not always the most academically successful.

# **Method**

**Participants**

 The students involved in this research were first-year students. Their names were changed to protect their identity.

**Table 2.** Research Participants

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Kate** | **Zoey** | **Adam** | **Matt** | **Emily** |
| **Age** | 18 | 19 | 19 | 19 | 19 |
| **Semesters of college completed** | 1 | 1 | 0 | 1 | 0 |
| **College major** | Social Work | Criminal JusticeAdministration | Social Work | Political Science | Business Administration |
| **High school GPA** | 3.5 | 3.1 | 3.6 | 3.0 | 3.4 |
| **Self-reported high school GPA** | 3.5 | 3.2 | 3.2 | 3.0 | 3.9 |
| **ACT score** | 17 | 18 | 28 | 26 | 19 |
| **Courses taken the semester of study** | 5 | 5 | 5 | 5 | 4 |
| **Cumulative GPA** | 3.4 | 2.5 | 2.1 | 2.2 | 3.4 |

 This begins to paint a picture of the students in this study. It sets a foundation for conceivable assumptions such as predicting Adam and Matt will be highly successful college students. It also exemplifies the diversity in chosen college major and range of scores and GPAs.

**The Study**

As a direct benefit of qualitative research, each student in this study could be observed with great detail. Their personalities, academic habits, and learning methods became clear through focus group sessions and worksheet assignments.

Over the course of the semester, the research inquired about student’s techniques, preferred study methods and attitudes toward learning in college. They were first given an introductory assignment about their background and their perceptions on the study techniques researched in this project. To determine their knowledge of study techniques, the students were given a chart and asked to describe how each of the techniques discussed in this research works. Then, students were given the opportunity to speak in focus group sessions. The next assignment was to assume they had a test in two weeks in one of their courses during that semester. They were to design a study plan and then turn it in. After that, the students were asked to reflect on their challenges and success during that semester and how they plan to change, if at all, their behavior in the following semesters.

This study consisted of written work by the students and two focus group sessions. The first focus group centered around the techniques that students were utilizing to study, especially based on prior habits. These focus groups were run in a semi-structured format. The questions that guided both focus groups are included in Appendix D and Appendix E. They were asked about the extent to which they were required to study in high school, and if they did study, how they studied their academic material. To determine correlation between their study methods and test type, the students were asked about the kind of testing administered at the high schools they attended. This focus group then changed to a focus on the academic differences between high school and college, with a special interest in their observations from their first or second semester. At the end of this session, the students were asked if their study methods had changed from high school to college.

In the second focus group session, the students were asked to think about the specific study methods that could be used to prepare for exams. Each study method mentioned in the class was evaluated individually with questions about their perceived effectiveness and usage in preparation for tests. They were asked questions about the specific study methods and for which content those methods proved useful. This focus group also asked the students to describe their motivations for studying, especially in terms of their long-term goals for college. Finally, the students were asked at what point they knew they were ready to take an exam for a course.

The written work was designed to illuminate the study methods students thought were effective and practically used. Their first assignment, as shown in Appendix C, was a survey of their awareness of the effectiveness of learning techniques. The students were asked to check which methods they knew to be effective methods for learning. They were also asked to check the boxes of the methods they used most frequently in order to draw attention to any discrepancies.

The student’s final assignment was to reflect on their semester as a whole. They were asked about the challenges they faced, how they overcame them, and how they expected to tackle anticipated challenges in the next semester. The complete list of questions (Appendix F) facilitated introspection on how the student’s methods led to their level of success and questioned whether their methods needed to be adjusted to fit the rigor of their college courses.

The research was conducted using a qualitative design because of the desire to gain knowledge of the student perspective and the means through which they do or do not achieve success in college. The students’ work was analyzed based on their individual answers, given that some students clearly identified that they did not study, and some students did. If a student was found to have not studied, their answers to reflection questions and focus group sessions were analyzed to determine what factors might lead them to not study. It was imperative to let the students’ voices be heard so that this study remained relevant for the future of higher education research. It is difficult to generalize or assume all students react or act upon their schoolwork in similar ways. The goal from this research was not to inform a study applicable to many students but rather to discover how five students came to have their particular study habits, motivations and perspectives. The nature of the study consisted of acknowledging the influences of the students’ high school study habits on their college experience and noting the implications of those influences. At this level, it was important to gain qualitative data that went beyond numbers and percentages. It is often found that in composing general statistics about student study methods, students are more likely to overestimate the quality and time spent on study techniques. (Ehrlinger and Dunning, 2003). Qualitative data is also helpful because it allows researchers an entry point into the reasons why students make certain choices.

Each focus group session was recorded, transcribed and coded for trends or themes in the students’ responses. The transcriptions and written assignments were coded for elements of self-discovery or reflection, recognition of the downfalls of ineffective methods, cramming, study strategies, and elements of academic grit. Trends in the student’s responses were used to analyze the student’s academic approaches and their chosen study techniques.

**Hypotheses**

Three fundamental hypotheses guided this research and framed the methodology of this research, focusing heavily on determining the student’s perspective on the academic choices they make through the semester.

* **Hypothesis One:** Students do not always utilize effective learning techniques. College students tend to utilize ineffective learning strategies because they are faster, less complex and require little effort (Annis and Davis, 1978; Arum and Roksa, 2011; Dunlosky, et al, 2013; Gurung, 2005).
* **Hypothesis Two:** When given increased exposure to research-proven study methods, students would begin to incorporate those methods into their study practices (Dunlosky, et al. 2013; Arum and Roksa, 2011; Duckworth, Peterson and Kelly, 2007; Jones and Kahn, 2017; Mayer and Ambrose, 2010).
* **Hypothesis 3:** A student’s preferred study practices reflect their realization and persistence toward long-term goals for their college education (Duckworth, Peterson and Kelly, 2007; Charlene, Rajalakshmi, and Suresh, 2010; Ehrlinger and Dunning, 2003; Jones and Kahn, 2007; Rimfield, Kovas, Dale and Plomin, 2016).

These hypotheses derived from research that students do not utilize effective

methods and do not adequately prepare for exams (Arum and Roksa, 2011; Dunlosky, et al., 2013). By focusing on the students’ perspective, this research hoped to bring light to the students’ reasoning behind not utilizing effective methods and determine their willingness to learn and apply effective techniques.

# **Results**

As previously mentioned, it was hypothesized that although students did not use the most effective study methods, they could learn to utilize more effective methods, especially if they recognized discrepancies in the effectiveness of their chosen techniques. The results from the focus groups and individual student work indicated the incorrectness of that hypothesis. In the beginning stages of the research, it became evident that the students were not using effective learning methods. In the course where this study took place, the professor spent class time teaching research-proven learning techniques like practice testing. Nearing the end of the semester, it was clear these students had not incorporated these methods into their routines, despite the encouragement from the course.

**Table 3.** Most Effective Techniques from the Student Perspective

|  |  |
| --- | --- |
| Student | Most Effective Techniques |
| Emily | Practice TestingHighlighting / Underlining |
| Matt | Flash Cards / Practice Testing(Teaching Someone) |
| Kate | Flash Cards / Practice Testing |
| Adam | None |
| Zoey | Flash Cards / Practice TestingRereading NotesMnemonic DevicesDistributed PracticeHighlighting / UnderliningSummarizingAssociating Facts with Pictures |

At the beginning of this research, each student took a survey detailing the study practices they use, and which ones they thought were effective. From this data alone, it is clear that some students are aware of the effective methods of studying. Practicing testing, listed by Dunlosky and his colleagues (2013) as one of the most effective learning techniques, was a consistently marked effective method. While students knew which methods were effective, this knowledge did not inform their practice (Dunlosky, et al., 2013). In the second focus group, Matt said, “Well, anything is better than cramming. Although that's what I use most.” Adam and Matt agreed that cramming was their most frequently utilized learning method, but not everyone in that focus group agreed. When asked about its limits, the students mentioned that cramming puts a lot of pressure on the student right before the exam. For example, Emily stated:

I would feel like if you're cramming, I would hate that if you did all that and you didn't learn anything. Like you'd sit there and read all the notes before a test or something, and then the test comes and you're like, ‘I don't remember any of this.’ You're just blank because you're trying to force everything into your head at one time. And then when you actually have a break or when you get the test, it's just like, I don't know any of this.

Emily understood that cramming was an ineffective method. More than that, she recognized its limitations and decided not to cram. It was obvious that experiences in her life have made her choose better learning techniques, perhaps through previous failures or high academic expectations. Alternatively, Matt and Adam lack the same motivations and were not convinced to stop cramming to prepare for exams.

**The Study Process**

To illustrate their study process, each student was asked to describe how they would prepare for a test in one of their courses this semester. The question was presented given that the hypothetical test was two weeks away. How would they study for it? Separately, how *should* they have studied for it?

Emily wrote that she would begin by working on a study guide provided by the professor and highlighting or underlining key points. She would also make flashcards for formulas, and practice homework assignments. In response to how she *should* study, she listed that she should ask “tons of questions in class,” as well as go over the study guide. Her approach includes details and tangible goals, like asking questions and making flashcards, that allow her to gauge her learning as she prepares for an exam. In using practice testing, Emily was utilizing effective methods to prepare for exams and gauge her level of preparedness (Dunlosky, et al., 2013).

When asked how she would prepare for an exam two weeks away in one of her classes, Zoey said that she would make sure she had taken notes, check those notes with a peer to recognize disparities, and look over any course assignments. She also said she would make notecards and quiz herself. Alternatively, her listed ideal study strategies would include making sure she attends class, taking good notes, making flashcards and not being afraid to ask questions during class if she was confused. Her approach was detailed and has elements of effective learning practices, but it also lists some issues that might have been impending her academic success, such as failing to attend class every day.

Matt took a more straightforward approach. His plan of action was to “remind myself I have a test,” and maybe looking over his notes right before the exam. He describes what he *should* do as spending at least three hours a week leading up to the test reviewing the lessons and going over his notes. This approach follows a consistent pattern in Matt’s academic methods, illustrating that he does not incorporate effective learning techniques to his academic work. His past academic experiences have allowed him to create habits that work, achieving passing grades in every course. He utilizes no technique at all in reminding himself that he has an exam, and that tactic sets him up to learn little for his test (Arum and Roksa, 2011).

For Kate, her first way to prepare for an upcoming exam would be to read over her notes. She would also quiz herself, spend one hour a day leading up to the test going over her notes, making sure she understood the concepts on the exam. When asked to describe how she *should* prepare, she said she must “attend class every day and listen to understand,” as well as ask the professor questions. The similarities in her method with Zoey’s methods are interesting because their comments in the focus groups seemed to demonstrate more differences than similarities in their techniques. For example, while discussing the effect of lecture classes on their ability to learn the information, Kate stated, “That’s my favorite thing about lecture classes. You don't have to go, and then if you know somebody you can just be like, ‘Can you, like, send me the notes?’” However, Zoey implied numerous times that her high school challenged her academically, and that forced her to learn and study on her own. Therefore, the similarities in their descriptions provide insight into how previous experiences can create habits and also how students can recognize failed learning techniques but still not adjust their approaches.

Adam provides a time line of the two weeks leading up to the exam. He would first “try to pay attention in class.” He would take notes, and a week away from the exam, “start paying closer attention.” Two to three days away from the exam, Adam said he would spend ten minutes looking over the notes he took in class. On the day before the exam, he would look over his notes to tackle any problems he thinks might be particularly difficult. Alternatively, he said that he *should* study for at least thirty minutes every day until the exam, including finding a study group, mixing up his study methods and using flashcards. He also outlined that he should take notes and pay attention. While his plan provides a detailed timeline, it did not include effective learning techniques. The concept of paying closer attention would be a difficult strategy to track progress, and the method does not inform successful learning. Reviewing notes is one of the least useful methods described in Dunlosky, et al (2013), so it would be unlikely for this method alone, especially using little mental effort in rereading the material, to adequately prepare Adam for an exam for which he had two weeks to study.

**Knowledge of Learning Techniques**

The next assignment the students were given was a survey of the study methods where they were asked to describe the learning techniques. In these written responses on the worksheet, including flash cards, practice tests, re-reading notes, mnemonic devices, spreading out study sessions, teaching someone, mixing up topics, highlighting or underlining, writing summaries, cramming, and associating facts with pictures, it became clear that the students knew how the study methods worked. Each student provided an accurate explanation for each of the effective learning techniques, signaling a knowledge of effective learning even if they did not use the methods in their own practice. They were also asked to indicate the study methods they had previously used and those they use frequently.

**Table 4.** Student Usage of Study Techniques

|  |  |  |
| --- | --- | --- |
| Student | Technique | Methods Used(\*, previously used; +, use frequently) |
| Adam | Highlighting and underlining | \* |
|  | Mnemonic devices |  |
|  | Associating facts with pictures |  |
|  | Rereading | + |
|  | Summarizing | \* |
|  | Practice testing (including flash cards) | \* |
|  | Distributed practice | \* |
|  | Interleaved practice |  |
|  | Cramming | + |

|  |  |  |
| --- | --- | --- |
| Matt | Highlighting and underlining | \* |
|  | Mnemonic devices |  |
|  | Associating facts with pictures |  |
|  | Rereading | \* |
|  | Summarizing |  |
|  | Practice testing (including flash cards) | \* |
|  | Distributed practice |  |
|  | Interleaved practice |  |
|  | Cramming | + |

|  |  |  |
| --- | --- | --- |
| Emily | Highlighting and underlining | + |
|  | Mnemonic devices |  |
|  | Associating facts with pictures | \* |
|  | Rereading | + |
|  | Summarizing | \* |
|  | Practice testing (including flash cards) | + |
|  | Distributed practice | \* |
|  | Interleaved practice | \* |
|  | Cramming |  |

Adam and Matt both put plus signs next to cramming, while Emily put plus signs next to utilizing practice tests, re-reading notes and highlighting or underlining. The other students were absent from this class and were unable to complete this worksheet.

Adam and Matt’s checkmarks came as no surprise when looking at their other responses. Both students reported frequently utilizing cramming as their only method of studying, despite recognition from both of them that this was an ineffective method. This further illustrates the concept that students must choose to apply effective learning techniques despite efforts from educators and other influences to motivate them. On the other hand, Emily reported using highlighting and underlining, rereading notes and practice testing the most often. Her utilization of one of the most effective learning methods, practice testing, works well to help her succeed in her classes and helps prepare her for exams. It also shows she recognizes and puts into practice effective learning techniques.

**Final Reflection**

As a final assignment, the students were encouraged to reflect on their academic success during the semester. They were asked to consider their biggest challenges to their academic success, the advice they would give to incoming freshmen, the things they learned about themselves this semester, and define what academic success means to them.

**Question 1: What were the biggest challenges you faced in achieving academic success this semester? What course(s) were the most challenging? Why do you think these were challenges for you? How did you overcome these challenges?**

Emily mentioned her introduction to music class being the most difficult course during this semester. It was different than any class she had taken in high school and felt like it was her hardest class because the information was complex. She overcame this challenge by answering questions in class to make sure she understood the material, and she notes that she saw improvement throughout the semester.

Kate answered that her biggest challenge was in saying no to her friends when they wanted to go out. She said that over the course of the semester, she learned to say no and put her work first. With a semester GPA of 3.7, her attention to that challenge seemed to have paid off. She showed little interest in utilizing the learning techniques taught in the course, but she still achieved academic success.

For Zoey, it was evident that numerous external factors contributed to her challenges for the semester. She noted that she began working two jobs whereas she did not have a job in her first semester of college. Interestingly, her GPA from the previous semester put her on academic probation. However, in the next semester, she took on two jobs and her GPA brought her out of probation with a final semester GPA of 2.7.

Adam struggled with deadlines. His sincere answer suggests that upon reflection, he wasn’t happy about his work ethic this semester. “To be honest, I don’t feel like I overcame the challenges at all. Looking back, I wish I tried harder.” It is evident that Adam is reflecting on his chosen learning techniques but still unwilling to incorporate effective methods to achieve academic success (Duckworth, Peterson, Matthews, and Kelly, 2007; Arum and Roksa, 2011).

Matt’s biggest challenge for this semester was that he did not like learning in his science class. “I overcame this by buckling down and doing my work.” Though this provided no definitive plan for how he “buckled down” or how he completed his work, he suggests that he did overcome this challenge. The hope from this research was that he would acknowledge his lack of studying and motivation to study as a challenge, but he did not view that as a prevalent issue in his academic work.

**Question 2: What challenges do you anticipate facing in future semesters, and what strategies will help you achieve academic success in college? Or what advice do you have for yourself for next semester?**

Emily recognized a future challenge in understanding the information she would learn in science classes. Her goal for these classes was to make good grades, so she planned to join a study group, go to office hours of the professor and attend tutoring to ensure she understood the material. Zoey anticipated having more time-consuming coursework but having less time to do it. “I think spacing my work out will help because I’ll have time to actually focus on it.” In her strategy for this challenge, she draws upon effective learning techniques and planned to utilize spaced practice to help her succeed. However, Kate expected to struggle more with procrastination and wanting to go out with her friends. Her solution to these problems was to “remind myself that my grades and school work are to come first,” but without any practical plans of action.

Adam recognized a flaw in his approach to projects and exams in his courses. He stated that projects seem to carry more weight than homework in college courses, so it was important for him to start to finish work ahead of time. “When you get home, finish it!” This strategy of ending his procrastination were how he planned to feel better about the completion of projects and tests. Similarly, Matt provides answers that suggest a lack of seriousness to his approaches. He anticipated issues with studying next semester, as he had previously mentioned he did not study. He planned to overcome this challenge by having his friends help him do his work and “just get it done.” Both students seem to suggest a lack of thought or intention in overcoming challenges they might face in the coming semesters.

**Question 3: What advice would you give to incoming freshmen for surviving the first semester and starting out on the right foot?**

Emily provided a detailed list of things to do to be successful for a freshman’s first semester of college. “One, stay on top of your deadlines. Two, do your homework. Three, Stay organized. Four, ask questions when you don’t understand. Five, take advantage of tutoring and office hours.” This suggests that this is what she believes to have made her successful this semester, as she had mentioned previously doing all of these things to help her in her classes. This is a tangible list of things that take relatively little effort to complete in order to be successful.

Kate seems to contradict herself. She says freshmen should “never procrastinate and always put your school work first and take college seriously but don’t forget to have fun,” but had previously mentioned putting her friends before studying for exams. This alludes to her internal struggle her freshmen year of saying no to going out with her friends and getting her work done. This suggests some priority issues that may have contributed to her lack of time spent studying, but her ultimate realization that her schoolwork takes precedent.

Zoey’s list of advice seems to come from the overloaded nature of the recent semester. “One, don’t take 8 am classes. Two, don’t procrastinate. Three, it’s okay to skip a date or party for homework. Four, don’t work late shifts. Five, use the library. Six, email your teachers if you need help with anything you don’t understand.” An interesting observation from her list of advice is the acknowledgement of making sacrifices to succeed in college courses. This is similar to Kate’s acknowledgement of saying no to her friends in order to get her work done. This suggests a larger effect social activity has on learning.

For Adam, there are clear, pointed comments to what he did not do this semester. “Come to class, talk to your professors, do your homework, check the syllabus for homework, do your homework, do your homework.” He suggests homework is an important aspect of college courses, though above, he mentions the importance of projects and tests. It seems in these responses he is unclear of his goals for his college courses (Duckworth, Peterson, Matthews, and Kelly, 2007).

Matt is straightforward. “Don’t stress… just relax, meet people, and go with the flow. Study when you can, study with friends, then have fun.” There is a clear lack of realization of the importance of preparation for college coursework. Moreover, there is a definitive difference between his approaches and, for example, Emily’s and Zoey’s approaches, which are more intentional and reflective of their academic performance.

**Question 4: What did you learn about yourself this semester? Explain 1 or 2 things that you have discovered about yourself. How will this impact your future choices or decisions?**

Emily suggests a recognition of balance in her academic work. She mentions that if she pushes too hard at the beginning of the semester, she will exhaust herself and not have the energy or desire to keep going. “I have to balance my school work and social life, so I won’t be so burned out and actually go do stuff with friends.” It is interesting the dichotomy between her realizations and the opposite realizations of Kate. Kate explains that she learned how hard she can work and that she just needs to apply herself to get the grades she desires. This is fitting with her academic performance, which was extremely high, for the semester being studied. Though she mentioned not having to try in high school and never studying before, she still did well in her classes, suggesting she was beginning to learn the advantages of a gritty personality.

Zoey’s realizations were not as positive. “I learned that I can’t manage my time very well.” She mentions her strong desire to consistently procrastinate but she recognized that it would definitely become a hinderance to her education in the future. She mentions that if she gets comfortable with procrastinating, she will suffer as her time management gets worse with her job and school. This is reflective of students on college campuses that must balance a work life with education and a social life.

Adam seems to show signs of self-reflection about his academic performance. “One thing I learned is that I haven’t really changed since high-school.” As he has described his aloofness and lack of effort in high school, he suggested this would not be good habits to carry on in college. He mentions that he also tends to overestimate his ability in completing work at the last minute, stating he needed to get more organized and in completing work. Matt also mentions an element of self-discovery. “I discovered I’m not who I want to be. This discovery is what put me on the track I’m on now.” This suggests his desire to change some of his previous habits, though he did not make it clear what those changes will be.

**Question 5: How would you define academic success? Were you (or are you) on track to be successful in this way this semester? Describe.**

Emily describes success as understanding what the course is teaching and being proactive about deadlines but also not being afraid to ask questions. She mentions that she often stays up late to get her work done, but “I get my work done and get good grades, so I’m pretty successful, I would say.” This definitive answer showed an element of acceptance of her work ethic which had contributed to her success this semester.

Kate clearly defines academic success as “the ability to reach your academic goals without anything or anyone stopping them.” This showed signs of a gritty personality, allowing her long-term goals to influence her academic work. She mentions that goals could be different for all students, but that as long as students stick to their goals, they will be successful. “Yes, I would say I’m on the right track.”

For Zoey, academic success is when “you’re on time, you do your work, you’re ahead of things.” However, she mentioned she is very distant from the path to success this semester. She attributes her lack of success to her working two jobs because she felt as though she had no time to complete her work.

Adam defined academic success as “passing your classes and learning things as you do.” This attributes success to learning the material being taught. He also mentioned that he is not passing many of his classes and had not learned much from any of his courses. However, he clearly understood the role learning played in academic achievement. In the future, he stated he would try to focus more on schoolwork with the intention to learn the material to do better academically.

Matt defined academic success as “being happy with how you did academically.” He believed he was on track to be successful in the semester of the study despite negative events occurring in the beginning. He described the importance of being proud of a C on an exam for which he studied relentlessly. “Being proud of yourself, even in failure, is academic success.” This suggests an element of pursuit toward long-term goals because he mentions overcoming challenges, but it is unclear how he plans to achieve his goals or personal pride can help attain success (Duckworth, Peterson, Matthews and Kelly, 2007).

The responses to these reflection questions tell a clear story of the students’ academic personalities. They each took different approaches to their academics, and it is produced vastly different results. It is clear that the students who view academic success as learning the material see more of a value in the learning process but that did not mean that all those students were successful. These reflections prove that it is in action and personality that students are successful or not.

# **Academic Habits**

This study set out to find how students were studying for their college courses. It became clear very soon in the study that the five students had ways in which they conducted themselves academically that did not vary much from their high school experiences. This idea of academic habituation became the underlying connection of this research. It is the concept that students act in ways that have worked for them in the past (Duckworth, Peterson, Matthews and Kelly, 2007). Effort given is equivalent to the ability to work the system, whether that exhibits itself as passing high school without having to study at all or being given special treatment for the completion of extra curriculars. In this study, academic habituation presents itself as levels of privilege throughout the student’s time in the school system. Because Matt was smart and learned information quickly, he rarely had to study in high school and therefore, despite the course work becoming more difficult, rarely studied in his first year of college. Similarly, Kate was permitted to turn in work late or was excused from assignments in high school because of extra-curricular activities, therefore promoting habits in college without attaining the same passing results as in high school.

Following the discovery of the theme of academic habituation, it became evident that while habituation plays a large role, this study illuminated elements of an academic epiphany or realization. Throughout the interviews, the students exhibited signs of realization of the flaws in their methods. In particular, the students who refrained from studying or believed themselves to be smart enough not to study began to discuss that their ways were not effective or that they should think more intentionally about their education. After being asked if each student’s preferred study methods changed depending on the course in question, Adam answered that he usually asks himself if he knows all the information by skimming his notes and cramming at the last minute. “That doesn’t always work. It usually doesn’t, but –” It is a slight observation that his preferred methods are ineffective. Similar comments from different students became more frequent as each interview was conducted, suggesting that Matt and Adam were recognizing the ineffectiveness of their preferred methods.

In the same way, the written questionnaires that the students turned in describe ways that they indicate they could improve. These discoveries from this research illuminate the complacency through which these students have approached their education and that most students have never given much thought to how they study. But they also acknowledge that they have never been taught how to study for any course in high school or college. Adam, Matt and Emily agreed that professors often did not clarify the best methods to study for their specific courses, and it was often left up to the students to find their way to academic success. The habits of independence and academic freedom to study or not study became a deeply engrained aspect of the students’ lifestyles. This can either be detrimental or helpful in their academic careers, but one of the most important ways students could improve their engrained habits is to be self-reflective, a concept this study attempted to present.

# **Academic Grit**

The perceived presence of academic grit, “perseverance and passion toward long-term goals” (Duckworth, Peterson, Matthews and Kelly, 2007, p. 1), in certain students in this study made a significant difference in their education. This quality supports their success even though they had low ACT scores. This quality seems to be present in Emily, but there are aspects of grit in Kate as well. Emily’s perseverance despite having a relatively low ACT score and average GPA show her drive to succeed and that the standardized measures of intelligence cannot predict college performance. From this study, it is evident that her reflective connections between the role of college in her long-term goals is a significant difference between her academic success and other students.

A significant connection from the data in this study showed that some students did not recognize the long-term effects or consequences of their college performance. From this study, there was a significant difference between the students who quite obviously displayed signs of academic grit and those that did not. When asked how their goals for their time in college play into their studying and preparation for a test, Adam answered that it was a progression of thought from wanting to study to pass the test to pass the class to get a good GPA to graduate. But he admitted it is often an unconscious progression with significant weaknesses because he often never thinks of it much further than the initial step.

When I think of it as the progression, I just think I wanna pass the test. That makes the test seem less important in the long run. It's kind of like the slippery slope thing we were talking about. It's like, if I look at this test in the context of I wanna graduate college with a degree, then I'll probably think it's a lot more important than if I think I just wanna pass this individual class.

By not acknowledging the significance of an exam, it alleviates the stress that might come along with being prepared for it. He does not seem to have the determination to see through his goal of getting a college degree. Adam seems to be focusing on each course or exam individually, not considering his long-term goals or how the courses he is taking affect the overall experience.

However, not all students in this study were unintentional about their study methods. Emily prefers to value her education both monetarily and enduringly. She thought about her college courses in terms of her goals.

Of course, in the back of my head, I'm like, okay I have to pass this because I'm not gonna pay for classes to retake this all over again. And then at the same time, I'll be like, but it's gonna be worth it because at the end, I'm gonna graduate, and I'm gonna have my degree, and I'll be ready to move forward.

She recognized the end goal of pursuing a degree and knows that each step of her education has been to achieve that goal. This connection allowed her to see the importance of each course she took in her college education, knowing that her efforts drove her success. It was clear that she did not unintentionally approach her education, despite some standardized measures of her performance suggesting otherwise.

**Implications and Future Research**

The nature of this study sought to utilize qualitative data to illuminate student behaviors and motivations in the study process. While quantitative data can be useful in some circumstances, it can also be harmful in predicting the success of students in some contexts. If this study used only data to determine Emily’s success from her high school performance or by ACT standards, it could have predicted she would be among the lowest-performing students. This study, instead, shows the opposite is true. The ACT does not define her academic success. The reverse example is also true in Matt and Adam’s high ACT scores. Those factors could have predicted a strong college academic performance, but the opposite is true here as well. The key factor here is in grit and in the quality of preparation for courses and exams.

This leads future research to consider the significance of qualitative data. While it does not allow much generalization, this research gave students the chance to explain their methods and motivations behind their work ethic and learning techniques. It painted a picture of success for those with motivation to succeed and a picture of struggle for those who lack successful habits. Future research should focus on this perspective at universities around the country because it is in that voice that educators and schools can determine the heart of the academic issues on their campuses.

In the United States, learning occurs at such an individual level, it is hard to accurately describe student learning with numbers (Arum and Roksa, 2011). Going forward, learning research and educational studies on students should take into consideration that their reflections tell a story deeper than their GPAs. If a student learns the material for practical applications and has a 3.0 GPA, that could be better than the student with a 4.0 who could not retrieve any information from previous courses.

Students come from various backgrounds and educations, but their mindset is ultimately what drives success. Future research should attempt to discover whether grittiness is an innate disposition or a characteristic that can be formulated and taught. While instructors may not alter a student’s complete perspective in one semester, future studies can discover how mindsets can be influenced toward achieving success. That is to say, how can students become gritty when they have never had to apply effort toward their education? What materials or practices can professors utilize that encourages effective learning methods in students who have never had to study?

**Final Thoughts**

When this research began, the expected results were to discover what drives students to study in the ways that they do. One main hypothesis was that if students were aware of effective learning techniques, they would apply those techniques and perform better academically. Though students became well-acquainted with effective learning methods, most of them still preferred to cram before exams. It became clear that teaching effective learning methods would not be enough to create academic success for many students. The application of a gritty personality to college coursework with a strong desire to achieve long-term goals, academically and beyond, is one of the main components to academic success found in this study. Utilizing qualitative methods, this study showed the student’s perspective is the integral part of telling a complete story. In terms of success, self-reflection and intentionality are driving forces.

This research noticed an increased awareness to the perspective that students often do not think of their education in respect to long-term goals. As Matt stated in the first focus group, it is all about “getting through the system.” This is an unfortunate perspective to take on learning and college, but it is one that seems to be popular. Perhaps a love of learning would provide students the motivation to study effectively. Perhaps respect for the education system as a whole would make students more likely to study for their courses. College, for some students, is a mindless necessity and just a means to get to a better or higher-paying job. Indeed, the goal for some students is not to learn in college but to graduate college. The fundamental difference in these perspectives can explain why some students, who arguably enjoy learning and see college as more than just a necessary evil, like Emily, are more successful. Students with that perspective often see college as a way to learn information they enjoy learning and help them succeed in their career. Conversely, students using college to attain a larger salary or get a better job often miss the learning while they simply strive to pass. One of the challenges in higher education is sparking a desire to learn in students who seem complacent and unwilling, a challenge worth taking great efforts to overcome.

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**Appendix A**

Institutional Review Board Approval

**IRB**

**INSTITUTIONAL REVIEW BOARD**

Office of Research Compliance,

010A Sam Ingram Building,

2269 Middle Tennessee Blvd

Murfreesboro, TN 37129

# IRBN001 - EXPEDITED PROTOCOL APPROVAL NOTICE

Wednesday, March 21, 2018

|  |  |
| --- | --- |
| Principal Investigator  | **Sarah D. Morgan** (Student)  |
| Faculty Advisor  | Ryan Korstange  |
| Co-Investigators  | NONE  |
| Investigator Email(s)  | *sbd2x@mtmail.mtsu.edu; ryan.korstange@mtsu.edu*  |
| Department  | University College & Educational Leadership  |
|   |   |
| Protocol Title  | ***Students vs. Success: Qualitative insight into student's applied study habits***  |
| Protocol ID  | **18-2186** |

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXPEDITED** mechanism under 45 CFR 46.110 and 21 CFR 56.110 within the category *(7) Research on individual or group characteristics or behavior* A summary of the IRB action and other particulars in regard to this protocol application is tabulated below:

|  |  |
| --- | --- |
| IRB Action  | APPROVED for one year from the date of this notification  |
| Date of expiration  |  | **3/31/2019** |   |
| Participant Size  | 10 (TEN)  |
| Participant Pool  | **General Adults (18 years or older) - MTSU undergraduate students enrolled in UNIV 1010 courses.** |
| Exceptions  | Recording contact details for official protocol execution purposes is permitted. |
| Restrictions  | 1. **Mandatory active informed consent; The participants must be clearly notified that enrollment is voluntary with ability to withdraw at anytime without retribution and provide a copy of the informed consent to each participating subject signed by the PI and FA.**
2. **Mandatory implementation of the proposed inclusion/exclusion plan.**
3. **Data must be deidentified once the analysis is complete.**

  |
| Comments  | NONE  |

**Appendix B**

**Consent Form**

**Compliance Officer**

compliance@mtsu.edu

**Box 134**

**Sam Ingram Building 011B**

**(615) 494-8918**

**Principal Investigator: Sarah Dixon-Morgan**

**Study Title: Learning from the Student’s Perspective**

**Institution: Middle Tennessee State University**

Name of participant: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Age: \_\_\_\_\_\_\_\_\_\_\_

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you will be given a copy of this consent form.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

1. **Purpose of the study:**

You are being asked to participate in a research study because researchers at MTSU want to determine the kind and type of study practices that students actually use, and the impact that those practices have for student perception of preparedness, and on student performance.

1. **Description of procedures to be followed and approximate duration of the study:**

This study will last only this semester. Two surveys will be distributed in class. A few class sessions will be devoted to discussing what study skills you’re using, and which you think work (which is a regular part of our course). At the end of the course, we will collect your final grades for the semester. All data collected will be de-identified.

1. **Expected costs:**

There are no costs associated with this study.

1. **Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:**

There are no risks or discomforts associated with this study. The information collected will be a part of the regular UNIV 1010 curriculum, and data will be recorded for use in this research. Focus group sessions and individual interviews conducted will be audio recorded and transcribed.

1. **Anticipated benefits from this study:**
2. The potential benefits to science and humankind that may result from this study are understanding which study practices are beneficial and helpful will assist in the curriculum development and success of UNIV 1010 as a program, and ultimately will assist in the development of successful orientation and onboarding practices for students at MTSU.

1. **Alternative treatments available:**

There are no alternative treatments available.

1. **Compensation for participation:**

There is no compensation for participating in this study.

1. **Circumstances under which the Principal Investigator may withdraw you from study participation:**

Failure to attend focus group meetings or interviews could cause the investigator to withdraw you from this study.

1. **What happens if you choose to withdraw from study participation:**

If you choose to withdraw from this study, your data will not be considered in the study. There are no consequences for choosing to withdraw.

1. **Contact Information.** If you should have any questions about this research study or possible injury, please feel free to contact **Sarah Dixon-Morgan** at **sbd2x@mtmail.mtsu.edu** or my Faculty Advisor**, Ryan Korstange** at **615.898.5558, or ryan.korstange@mtsu.edu**.
2. **Confidentiality.** All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections, Administrators in the Middle Tennessee State University University College,if you or someone else is in danger or if we are required to do so by law.
3. **STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY**

**[ ]  I have read this informed consent document and the material contained in it has been explained to me verbally. I understand each part of the document, all my questions have been answered, and I freely and voluntarily choose to participate in this study.**

**Appendix C**

FYE Study Skills Transfer Survey

1. Rank the following study techniques according to their effectiveness.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Extremely effective | Moderately effective | Somewhat effective | Slightly effective | Not at all effective |
| Flash Cards |  |  |  |  |  |
| Practice Tests |  |  |  |  |  |
| Re-reading notes |  |  |  |  |  |
| Mnemonic devices |  |  |  |  |  |
| Spreading out study sessions |  |  |  |  |  |
| Teaching someone |  |  |  |  |  |
| Mixing up the topics |  |  |  |  |  |
| Highlighting / underlining |  |  |  |  |  |
| Writing summaries |  |  |  |  |  |
| Cramming |  |  |  |  |  |
| Associating facts with pictures |  |  |  |  |  |

1. Which study practices do you use?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Never | Almost Never | Occasionally | Almost every time | Every time |
| Flash Cards |  |  |  |  |  |
| Practice Tests |  |  |  |  |  |
| Re-reading notes |  |  |  |  |  |
| Mnemonic devices |  |  |  |  |  |
| Spreading out study sessions |  |  |  |  |  |
| Teaching someone |  |  |  |  |  |
| Mixing up the topics |  |  |  |  |  |
| Highlighting / underlining |  |  |  |  |  |
| Writing summaries |  |  |  |  |  |
| Cramming |  |  |  |  |  |
| Associating facts with pictures |  |  |  |  |  |

Other: Please list any study technique you use often or always that we left off the list.

1. Demographics:
	1. Age
	2. Semesters of College completed (0, 1, 2, etc.)
	3. High School Attended
	4. High School GPA
	5. Courses enrolled in this fall
	6. Major
	7. Ethnicity
	8. Biological Sex (M/F)
	9. Others?

**Appendix D**

Focus Group 1 Guiding Questions

1. How did you study in high school?
	1. When did you study in high school? (in school vs home)
	2. Did you feel like your classes required studying? Why or why not?
	3. How much did you study in High School?
	4. Did you study alone or in groups?
2. What kinds of study methods did you use to study for your classes?
	1. Had you ever learned how to study in high school?
	2. Did you have a study hall?
3. What kind of tests did you take in high school?
	1. How frequently did you have tests in high school?
	2. How did your teacher help you review?
		1. What study materials were you given to prepare?
		2. Did you have regular review sessions for exams?
	3. Were you able to correct your tests if you missed questions?
4. How are classes in high school different than those in college?
	1. How is course structure different?
	2. Workload
	3. In class structure vs out of class expectations
	4. What do you think your job is as a student in a class?
	5. How did class size different? Is the room layout different?
5. How are tests in high school different from those in college?
	1. Types of questions
	2. Format of the test
	3. How did the tests affect your overall grade?
	4. How did teachers help you review inside or outside of class?
	5. Study materials differences
	6. Frequency
6. Are you studying differently in college? How?
	1. Is there a difference between effective studying for college vs high school? Explain.
	2. When did you realize there was a difference?
	3. Hypothetical test: What is your actual process?
	4. Hypothetical test: What do you think the right process would be?

**Appendix E**

Focus Group 2 Guiding Questions

1. This focus group will highlight the frequency of use, and effectiveness of the major study methods that the research has identified. The questions will be
	1. Who has used X study method (the study methods we have identified are: Flashcards, Practice Tests, Re-reading notes, mnemonic devices, spreading out study sessions, teaching someone, mixing topics, highlighting/underling, writing summaries, cramming, associating facts with pictures)?
	2. What content did you use that method for?
	3. What style of test did you use that method for?
	4. How did it work?
2. How do the study skills that you use correlate with the fulfilment of your academic goals?
3. What kind of studying, and what amount of studying is a priority for you and your academic success?
4. What motivates you to study for your classes? Do you have different motivation for different classes?
5. How do you determine when you’ve studied enough for a class or a test?
6. Do you need to increase the amount that you study?

**Appendix F**

Final Reflection Questions

Question 1: What were the biggest challenges you faced in achieving academic success this semester? What course(s) were the most challenging? Why do you think these were challenges for you? How did you overcome these challenges?

Question 2: What challenges do you anticipate facing in future semesters, and what strategies will help you achieve academic success in college? Or what advice do you have for yourself for next semester?

Question 3: What advice would you give to incoming freshmen for surviving the first semester and starting out on the right foot?

Question 4. What did you learn about yourself this semester? Explain 1 or 2 things that you have discovered about yourself. How will this impact your future choices or decisions?

Question 5: How would you define academic success? Were you (or are you) on track to be successful in this way this semester? Describe.