

5-2018

Habits of Mind and the Impactful Uses of Time of College Seniors

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HABITS OF MIND AND THE IMPACTFUL USES OF TIME OF COLLEGE

SENIORS

A thesis

Presented to

The School of Social Sciences, Education & Business

Department of Higher Education and Student Development

Taylor University

Upland, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Higher Education and Student Development

by

David Gebby

July 24, 2018

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**Higher Education and Student Development
Taylor University
Upland, Indiana**

CERTIFICATE OF APPROVAL

MASTER'S THESIS

This is to certify that the Thesis of

David Scott Gebby

entitled

Habits of Mind and the Impactful Uses of Time of College Seniors

has been approved by the Examining Committee for the thesis requirement for the

Master of Arts degree
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Abstract

College students spend their time in a variety of activities outside of the typical classroom setting. These activities range from academic, such as spending time discussing opinions with peers, to more non-academic, such as spending time on social media. The purpose of the study was to examine free time as it relates to Habits of Mind or habits that lay a foundation for lifelong learning (HERI, 2017d). The study utilized archival data from a small, private, liberal arts university in the American Midwest. Using the results from the 2015 College Senior Survey, the research examined the relationship between how students spend their time and their development of Habits of Mind. Furthermore, this research investigated if certain uses of time affect students' Habits of Mind in positive or negative ways. Results indicated that how students spend their free time does have an affect on their levels of Habits of Mind in potentially positive ways.

Acknowledgements

The completion of this thesis would not have been possible without the love and support I received from my wife Kaitlin throughout its entirety. The process would have been impossible to complete without her being there for me. It would be unfair to single out any person from my cohort or program, because they are all to thank. I appreciate so much the care I received from my cohort and especially from my faculty.

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Chapter 1

Introduction

The Problem

Students are pulled in many different directions during their college careers. Distractions come in the form of activities ranging from social media and entertainment to meetings with faculty and late-night study sessions. Some of these activities are positive and lead to beneficial results, but other activities—or the time spent on activities—can negatively impact students' academic and social welfare, as well as intellectual development.

For students, the mishandling of free time may lead to one of many possible consequences. Mismanagement of one's time can affect both the physical and mental health of a student in the form of negative health problems such as “disturbed sleep, stress, anxiety to manage time effectively, and might result in giving up or partially fulfilling the task” (Deniz & Akdoğan, 2014, p. 30).

Student misuse of time is not a new phenomenon. Ellis and Knaus (1977) estimated that 95% of higher education students misuse their free time, a tendency that only increases with time spent in college. Other more recent studies, such as those conducted by Schouwenburg and Groenewoud (2001) and Steel (2007), suggest the number of students who misuse their time is closer to 85%. Because mismanagement of

time can also affect students' intellectual development, it is vital to understand the relationship between the two subjects.

Habits of Mind

How a student chooses to spend his or her time will generally influence how he or she tends to think. Different free time activities can promote academic engagement and enhance positive moods in students. Free time activities can also have the opposite effect and increase negative elements such as stress (Payne, Ainsworth, & Godbey, 2010). For these reasons, increased understanding of the habits students form outside of class is beneficial in order to maximize the time students spend in college. Habits of Mind (HoM) are a specific set of intellectual practices or patterns defined by the Higher Education Research Institute (HERI) as “[a] unified measure of the behaviors associated with academic success. These learning behaviors are seen as the foundation for lifelong learning” (HERI, 2017d, p. 1). Without question, this conceptual construct applies to college students.

While students develop HoM, they not only engage in practices promoting current academic success, but they also cultivate habits—or traits—that encourage lifelong learning (HERI, 2017d). Costa (2000) defined HoM as a “pattern of intellectual behaviors that lead to productive actions” (p. 16). In this definition, developing one's HoM is a means of taking education beyond the confines of a classroom. A student with well-developed mental habits is able to absorb, analyze, and ultimately transfer information to other appropriate environments or situations. Students able to take and apply knowledge in other circumstances are better equipped to take on life (Costa, 2000).

Costa (2000) described HoM as comprised of sixteen attributes, or mental disciplines, that individuals display when they behave intentionally to overcome difficult challenges. Furthermore, Costa (2000) believed a person can only rely naturally on HoM in times of difficulty or stress because of routinely implementing HoM in daily life. Utilizing various HoM, both in the classroom as well as during free time, may increase a student's chance of success in both his or her current academic setting as well as other non-academic environments.

Bain (2012) suggested that successful students do not define themselves by their ideal future professions, their inventions, or the songs that they sing, but rather by their creativity, curiosity, compassion, concern, and their citizenship in the world. Such a description accurately captures college students actively cultivating HoM, which involves a rich desire to know oneself, engage the world, and contribute as an active member of society. Students wishing to develop an intellect that will serve them optimally post-graduation must strive to cultivate HoM while in college.

Free Time

Full-time traditional undergraduate students often have an extensive amount of freedom regarding how they spend their time outside of class. When not in class, students are able to be with friends, go off campus, and attend sporting events, as well as participate in many other activities. Institutions often take great steps to ensure a high level of learning takes place in class; however, in-class learning only partially captures the breadth of the learning that takes place on campuses. The nature of students' use of time outside of class is also important to understand and appreciate.

A study conducted by Yarnal, Qian, Hustad and Sims (2013) reported that students spend roughly 42 hours a week engaged in leisure activities but only spend approximately 24 hours in academic-related work. The Pell Institute (2015) indicated that undergraduate students spend, on average, only 14% of their days attending class or doing academically-related work outside of class. Thus, examining students' use of hours not spent in class would be insightful. Despite potential benefits of an increased understanding concerning students' use of time, this is a relatively "underexplored concept" (Fosnacht, McCormick, & Lerma, 2016, p. 4). Institutions would be wise to examine the activities students choose to engage in during their free time.

The National Survey of Student Engagement (NSSE) is an instrument that compiles data on how college students spend their time (Kuh et al., 2001). Among other statistics, the 2016-2017 NSSE results reported how many hours college seniors engaged in certain activities. For instance, 60% of seniors spent 6-20 hours per week preparing for class, and 43% reported spending zero hours per week participating in co-curricular activities such as organizations, student government, or intercollegiate/intramural sports. Finally, a majority of 57% of seniors reported spending between 1-10 hours per week relaxing and socializing (Kuh et al., 2001).

Fosnacht and colleagues (2016) explained, "Free time is about 25% of the college student's week," meaning that for each week that students spend in college, they have roughly 42 hours wherein they can do whatever they choose (p. 4). Students have opportunities to be social, participate in sports, relax, or engage in a plethora of other activities. The present study hypothesized that, in the estimated 42 hours of free time students possess, their choices in activities largely influence their respective HoM levels.

Summary

Higher education is responsible for providing students opportunities that allow development both inside and outside of classrooms. Students' freedom of choice in engaging such opportunities plays an important role in the educational process. How students choose to spend their time can drastically influence them either positively or negatively (Brint & Cantwell, 2010). Developing a lifelong learning mindset will benefit students in virtually every area of life. Consequently, educators need to identify and emphasize behaviors that most positively affect students. Thus, the purpose of this study was to examine the possible relationship between HoM and students' use of free time.

Research Questions

Though institutions can aid students in many ways, the current study focused on the implications of the relationship between students' use of free time and their HoM. Helping them wisely use their time benefits both students and their institutions. The two research questions guiding the study were:

- What is the relationship between how students spend their time and their HoM levels?
- How do students' uses of time impact their HoM?

Chapter 2

Literature Review

Current Research

To understand time use and the concept of Habits of Mind (HoM) more fully, it is necessary to gain an awareness of relevant literature for both areas. Familiarity with these topics and their histories centers this study in the context of existing research. The research questions guiding the study were as follows:

- What is the relationship between how students spend their time and their HoM levels?
- How do students' uses of time impact their HoM?

Introduction

The Higher Education Research Institute (HERI, 2017d) defined HoM as “a unified measure of the behaviors and traits associated with academic success. These learning behaviors are seen as the foundation for lifelong learning” (p. 1). HoM and related subjects have been recently the topic of more prevalent discussion.

The focus on HoM has partially occurred because of the evolving perception of intelligence. According to Costa and Kallick (2009), “The changing conception of intelligence is one of the most powerful, liberating forces ever to influence the restructuring of education, schools, and society. It is also a vital influence behind the development of Habits of Mind” (p. 5).

Due to this shift in thought, a clear definition of intelligence for the purposes of the current study proves beneficial. To begin understanding the foundation for how students and educators approach intelligence, it is necessary to discuss the characteristics and differences between implicit and incremental theories of intelligence.

Foundations for Implicit Theories of Intelligence

Researchers normally view intelligence through one of two lenses. The first lens is the implicit, or entity mindset, intelligence theory. The implicit theory suggests that one's intelligence is largely static or concrete. Additionally, this model contends that intelligence cannot be greatly affected or increased; rather, intelligence remains at a relatively fixed level despite any efforts toward growth. Traditionally, the primary theory of intelligence was the implicit mindset.

One of the landmark theories of intelligence is Charles Spearman's theory of general intelligence (Costa & Kallick, 2008). Spearman (1904) desired to understand intelligence objectively, and his research dealt with a main function termed "General Intelligence." Spearman (1904) drew upon a foundation set by researchers Oehrn and Boas, who discovered several basic elements of intelligence: age, attention, and memory.

Building on the foundation of Oehrn and Boas, Spearman claimed intelligence is "inherited through genes and chromosomes and that it can be measured by one's ability to score sufficiently . . . yielding a static and relatively stable IQ score" (Perkins, 1995, p. 42). Because of what Spearman and others discovered about intelligence, many educators, such as Edward L. Thorndike, became obsessed with theories of efficiency.

Thorndike, an educator from Columbia University, desired to move past theory and instead focused his work on educational tools. He began to produce textbooks, tests,

and other familiar implements used in classrooms. Similar to Spearman, Thorndike considered intelligence to be, “a collection of links between pairs of external stimuli and internal mental responses”—this supposition is Thorndike’s “associationist” theory (Costa & Kallick, 2008, p. 7). In Thorndike’s understanding, learning is encouraged by strengthening good bonds and weakening bad or incorrect bonds. Both Thorndike’s and Spearman’s theories of intelligence have served educators as foundational frameworks.

Thorndike’s and Spearman’s work is partially responsible for the rationale of tracking students, competition, and ability grouping. Despite the positives that these practices can bring, viewing intelligence as fixed often causes people to seek “positive evaluations of their ability” and to go out of their ways to avoid exhibiting subpar ability (Costa & Kallick, 2008, p. 7). Resnick and Hall (1998) described effort and ability as negatively viewed in relation to achievement. Often, when one expends much effort on a particular task, onlookers perceive the effort as a sign of low ability, contrasting with a student who effortlessly achieves similar results.

An understanding of the implicit theory of intelligence provides important context for learning about the incremental view, as well as for understanding the related implications for students. Implicit theories suggest fixed mindsets affect vulnerability and resilience (Dweck, Chiu, & Hong, 1995). Additionally, such mindsets can affect causal attributions (Hong, Chiu, Dweck, Lin, & Wan, 1999), and it “is well known that explaining personal adversities in terms of fixed traits undermines resilience” (Yeager & Dweck, 2012, p. 304). Students’ implicit theories of intelligence may predict their academic performance (Blackwell, Trzesniewski, & Dweck, 2007). Having an implicit

view of intelligence carries significant inferences for how students view education.

Similarly, an incremental view of intelligence also carries weighty implications.

The implicit theory of intelligence, or the belief that intelligence is largely static, is important because of its influence on society's view of intelligence in general.

Thorndike and Spearman contributed to the field and allowed for further clarification on the characteristics of intelligence. After the implicit theory was established and studied, it gave way to the incremental theory of intelligence. The incremental theory is the mindset that many researchers have elected to accept.

Foundations for Incremental Theories of Intelligence

In the incremental mindset, intelligence is understood as capable of development and growth (Blackwell et al., 2007; Dweck, 2006, 2010). In contrast to the implicit mindset, the incremental mindset encourages students to be “more concerned with mastering the task” and “believe they can improve their skills with hard work” (Wiersema et al., 2015, p. 1). Students with such beliefs often make greater efforts and demonstrate greater perseverance when met with setbacks.

The incremental view of intelligence is not new and has been studied and developed by numerous researchers. One of the pioneers of the incremental theory of intelligence was Arthur Whimbey, who argued that individuals might be able to develop greater intelligence. He gave evidence to this idea by employing specific interventions with students from preschool to college years. Some of these interventions pertained to solving problems and engaging in metacognition or strategic thinking (Costa & Kallick, 2008). Whimbey's studies demonstrated that “instead of being fixed and immutable, intelligence is flexible and subject to great changes, both up and down, depending on the

kinds of stimulation the brain gets from its environment” (Costa & Kallick, 2008, p. 8). Similarly, Reuven Feuerstein and David Perkins also found convincing evidence that intelligence is malleable.

Feuerstein employed his own theory of cognitive modifiability while working with children in Israel. He theorized that intelligence is “not a fixed entity but a function of experience and mediation by significant individuals . . . in a child’s environment (Costa & Kallick, 2008, p. 9). This theory proposed that outside forces could modify levels of intelligence. Another implication is that, as humans live out their lives, their intellectual functioning can be continuously enhanced. Finally, Feuerstein believed every person is both “gifted” and “retarded” at the same point in time (Costa & Kallic, 2008, p. 9). According to this idea, virtually every person can ascend to a higher level of intelligence and success or have generally low intelligence (Feuerstein, Rand, Hoffman, & Miller, 1980). Feuerstein’s theory has been one of many important developments in the way teachers and students approach intelligence.

Perkins (1995) proposed three concepts that support such an understanding of intelligence, arguing that there are three types: neural, experiential, and reflective. Levels of possible growth or expansion differ within these three areas of intelligence.

Neural intelligence is a person’s genetic intelligence, that which is hard-wired into one’s body. Because neural intelligence refers to one’s physiology, experiences do not affect it as much. As the name implies, experiences are the driving influence on experiential intelligence, primarily involved with contextual knowledge. As one’s experiences expand, so does their knowledge. Similar to experiential intelligence, experiences can affect reflective intelligence, which is one’s proficiency in using one’s

mind in thoughtful ways or engaging in critical thinking. Tending to and cultivating one's own thoughts and habits are aspects of possessing reflective intelligence. Perkins (1995) used the term *mindware* when referring to reflective intelligence (p. 264). Both Feuerstein and Perkins contributed much to the current understandings of intelligence, enhancement of intelligence, and, if possible, the promotions of such enhancements. Such research provides an important understanding of incremental intelligence.

Habits of Mind

The previously discussed research has been important in the evolution of both intelligence and society's conception of HoM. Specifically, incremental intelligence connects to the concept of HoM with the idea of "lifelong learning" (HERI, 2017d, p. 1). As well, HoM, or "lifelong learning habits," connect to what researchers have discovered regarding the idea that intelligence can be modified, enhanced, and ultimately grown.

Whimbey, as noted earlier, concluded intelligence could be grown or enhanced. He was able to help students think strategically as well as engage in metacognition. The study also revealed that, though participants were able to perform various strategic and metacognitive techniques when they needed to, their ability relied heavily on their environments (Costa & Kallick, 2008).

When students' environments changed, they tended to cease the practice of techniques due to a lack of habitual tendency. Although students could skillfully perform a task, when they encountered an unfamiliar environment, they would not connect their knowledge to the situation at hand. As Resnick and Hall (1998) conveyed, "They became capable of performing the skill that was taught, but they acquired no general *habit* of using it and no capacity to judge for themselves when it was useful" (p. 104).

The current study focused on the habits of learning, or Habits of Mind, as well as the activities that do or do not correlate with developing them. Not only is it important to know that individuals can affect their intelligence, but it is also important to be aware of what the development of intelligence entails. Ultimately, determining a clearer picture of how students develop HoM can allow educators to help students cultivate HoM that continue over the course of a lifetime.

Despite the importance of HoM, there is no clear and definitive history of the concept. Rather, the incremental theory of intelligence, as well as relevant literature by researchers such as Whimbey, produces the concept of HoM. Both the theory and the literature suggest that intelligence can be enhanced and developed over time through habitual activity, or Habits of Mind. Even without a universal definition or understanding of HoM, it is an important topic to examine more thoroughly. A substantial amount of literature suggests people with higher intellectual effectiveness, as well as higher performance, tend to share certain identifiable characteristics (Ames, 1997; Carnegie & Stynes, 2006; Ennis, 1991; Feuerstein et al., 1980; Freeley (as cited in Strugatch, 2004); Glatthorn & Baron, 1991; Goleman, 1995; Perkins, 1991; Sternberg, 1984; Waugh, 2005). HoM are the shared characteristics between individuals having higher intellect and effectiveness. For this reason, emphasizing activities that help students develop HoM could greatly benefit both educators and students.

In keeping with the ideas presented, HERI developed a research construct for HoM based on items from their Freshman and Senior Surveys. The Freshman Survey focuses on incoming students' behaviors in high school, expectations of college, values and goals, and other related aspects (HERI, 2017a). Students answer many of these

questions again on the College Senior Survey, providing longitudinal details about their experiences and development.

The current study used the definition of HoM from HERI's Cooperative Institutional Research Program (CIRP) Freshman Survey as well as the HERI College Senior Survey. Despite not being used in this study, Costa and Kallick's (2008) definition of HoM—"A composite of many skills, attitudes, cues, past experiences, and proclivities. . ." (p. 17)—is helpful to keep in mind because of the details regarding the makeup of HoM. This definition contains six dimensions of HoM: values, inclination, sensitivity, capability, commitment, and policy (Costa & Kallick, 2008). These six dimensions, briefly explained below, are incremental levels through which individuals may advance. The steps offer a progression an individual may take in order to better maximize daily life habits.

The progression begins with *value*, or the concept of choosing certain intellectual practices over others that may be less beneficial or productive. *Inclination*, the second dimension, refers to the tendency to repeat certain pattern of intellectual practices. With *sensitivity*, a person habitually looks for opportunities to employ intellectual practices. Once a person can fulfill their skills and behaviors, they have *capability*. After these four steps, *commitment* allows the individual to reflect on and improve their own performance relating to intellectual practices. Finally, *policy* allows a person to form a resolution in his or her mind wherein he or she "promote[s] and incorporate[s] the patterns of intellectual behaviors into actions, decisions, and resolutions of problematic situations" (Costa & Kallick, 2008, p. 17). HoM embodies these virtues as students habitually choose to engage in habits they recognize to have great influence over their lives.

A key component of the HERI (2017d) definition of HoM is the “lifelong learning” aspect (p. 1). Costa and Kallick’s (2008) perception of HoM addresses lifelong learning in a helpful way, naming the dimensions an individual goes through in making intellectual choices. *Value, inclination, sensitivity, capability, commitment, and policy* are all building steps to HoM that individuals generally go through as they start to form and establish intellectual habits in their own lives. While Costa and Kallick’s definition and perception is not the one utilized in this study, readers may glean insight from the way that those authors perceive HoM.

Higher Education Research Institute

The Higher Education Research Institute’s (HERI) mission is “to inform educational policy and promote institutional improvement through an increased understanding of higher education and its impact on college students” (HERI, 2017e, para. 1). HERI accomplishes their mission in the following way:

. . . working in cooperation with institutions of higher education; producing and disseminating original research; providing the tools and resources to utilize research at the institutional level; training researchers to advance institutional assessment and scholarship in higher education; and developing partnerships with higher education organizations to promote institutional excellence. (para. 2).

HERI produces journal publications and books as well as conducts workshops and conferences.

The College Senior Survey

The HERI College Senior Survey (CSS) is “designed as an exit survey for graduating and non-graduating seniors. The CSS focuses on a broad range of college

outcomes and post-college goals and plans” (HERI, 2017b, para. 4). The CSS allows a school’s administration to gain clearer perspective on seniors’ opinions and states of mind before they graduate. Outcomes of the CSS include student-faculty interaction, student goals and values, degree aspirations, and career plans (HERI, 2017b). Moreover, the survey is comprehensive and allows students to give feedback on their overall experience at college. If an institution chooses to administer the CSS in four-year increments, or in an even shorter timeframe, they may compare students’ results from when they were freshman as well as seniors, provided the CIRP Freshman Survey was also administered to the same students at the appropriate time.

Institutions may decide to administer the survey every other year or in some other sequence, but participating seniors take the survey during their final semester before graduation. The survey’s aim is to give an institution’s administration an understanding of the effect of students’ experiences while enrolled at the school. The CSS “connects academic, civic, and diversity outcomes with a comprehensive set of college experiences to measure the impact of college” (HERI, 2017b, para. 1). In terms of HoM, no singular question measures the level of HoM of a student. Rather, a construct communicates students’ levels of HoM.

College Senior Survey Construct Reports

The CSS operates on a more complex system than just singular questions. In addition to looking at each question by itself, one can look at constructs that include several related questions capable of lending insight on a major idea such as HoM. HERI (2017c) stated, “A construct can only be created when our analysis of the combination of items tells us that they actually are measuring a single trait or aspect of a student’s life”

(para. 3). To formulate these constructs, HERI uses a “modern psychometric method” that uses patterns to form estimated scores (para 4.). The survey assigns more weight to items determined to relate more to the construct at hand. Therefore, construct scores are not “arithmetic means . . . but rather the estimated scores that are most likely, given how respondents answered the set of questions” (para. 4). Thus, HoM is a CSS construct including the following survey items:

- Support your opinions with a logical argument
- Seek solutions to problems and explain with a logical argument
- Seek alternative solutions to a problem
- Evaluate the quality or reliability of information you received
- Ask questions in class
- Take a risk because you felt you had more to gain
- Seek feedback on your academic work
- Explore topics on your own, even though it was not required for a class
- Revise your papers to improve your writing
- Look up scientific research articles and resources
- Accept mistakes as part of the learning process

These eleven items were included on both the 2017 Freshman Survey as well as the College Senior Survey. Despite each item having its own score, HERI (2017b) believed these eleven items all point to the concept of HoM. As such, no single item completely embodies HoM in students; rather, by aggregating a score from all items, one can determine a HoM score for each participant. With a clearer idea of HoM and how it is captured on the CSS, the second part of this study—free time—can be examined.

Free Time

It would be impossible to quantify and describe every facet of students' free time activities. Instead, it is beneficial to consider Alexander Astin's Theory of Student Involvement, one of the key concepts in understanding college student development (Patton, Renn, Guido-DiBrito, & Quaye, 2016). Astin's theory relates to this study because the central idea is that, as students engage in meaningful or educational activities, their involvement increases cognitive complexity and lead to learning and development (Renn & Reason, 2013). There are five postulates to Astin's theory.

First postulate. According to the first postulate, "Involvement refers to the investment of physical and psychological energy in various objects" (Patton et al., 2016, p. 34). Students can invest, both physically and psychologically, in a multitude of different ways. They could invest by attending a sporting or hall event or even an extracurricular club meeting. They also could psychologically invest in groups, classes, or in other ways.

Second postulate. The second postulate is that, "regardless of the object, involvement occurs along a continuum" (Patton et al., 2016, p. 35). This statement indicates that students have varying levels of interest in different activities or groups. No matter what students invest in, they move along a continuum. Students are not either invested or not invested in any given activity. Rather, students' investment grows and diminishes based on a multitude of factors. They may be more invested in certain elements or at certain times. Astin notes that it does not depend on the type of involvement. An involvement continuum will always exist no matter the type of interest (Patton et al., 2016).

Third postulate. This postulate states, “Involvement has both quantitative and qualitative features” (Patton et al., 2016, p. 35). Any involvement contains quantitative features such as the amount of time a person devotes. Likewise, there are qualitative features such as the seriousness and level of attention a person exhibits towards an object.

Fourth postulate. The fourth postulate states, “The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program” (Patton et al., 2016, p. 35). As students give more quality and quantity to an object, their learning and development increases to a greater degree. The more students invest, the more they often receive in return.

Fifth postulate. The fifth postulate, closely related to the fourth, says, “The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement” (Astin, 1984, p. 298). Policies or practices have a varying degree of effectiveness in increasing a student’s involvement. The higher a student’s involvement, the higher the potential impact, development, or learning. For that reason, policies and practices need to allow students an opportunity to invest in them.

Astin’s theory has influenced many realms of higher education. Patton et al. (2016) explained, “College and university educators play a significant role in creating opportunities for students . . . to be involved in meaningful and transformational educational experiences outside and inside the classroom” (p. 35). These opportunities can form the foundational basis on which students develop.

Summary

The foundations for understanding HoM come from general perceptions of intelligence. The two major theories discussed—implicit and incremental—show researchers' perceptions of intelligence, as well as how it is presently understood. Although implicit intelligence was widely accepted by researchers, incremental intelligence has become the generally adopted conceptual framework. The concept that intelligence can be altered by engaging in certain activities or challenges is important for both students and educational professionals to keep in mind. If intelligence were largely static, or implicit, there would be comparatively little point in education. Work by Whimbey and Dweck, as well as others, has shown that students are able to enhance their intelligence if the circumstances are favorable.

HoM is related to the incremental view of intelligence. "Lifelong learning," from the HERI (2017d) definition of HoM, directly relates to growing and expanding one's intelligence. Through critical thinking, metacognition, and other activities, a person is able to form habitual tendencies to adapt and learn despite challenges. Surprisingly little research has been conducted regarding the factors that both contribute to the development of HoM as well as the results of having one's HoM positively changed or left uncultivated. However, it seems logical to assume that what students do in college influences their HoM by the time they graduate.

The five postulates of Astin's Theory of Student Involvement indicate that what students do in college affects their minds and their HoM. Students are involved in many different academic and non-academic opportunities while completing their degrees.

Thus, the current study sought to determine how students' uses of time fit in to the development of HoM.

The HERI CSS provided a measure for addressing the research questions and determining the previously mentioned relationship between use of time and HoM. Furthermore, the design of the HoM construct shows a deeper and fuller picture of what HoM looks like in students.

Connections to Current Study

Much of the aforementioned literature suggests that intelligence is a metric that can be influenced, changed, and ultimately cultivated and improved. Accordingly, this study examined both concepts of HoM and free time in order to answer the study's research questions. Because the literature suggests the importance of use of time, specifically looking into both non-academic and academic uses of time was important to the current study.

Chapter 3

Methodology

The purpose of his study was to explore the relationship between students' uses of free time and the development of HoM. To accomplish this, the study employed a correlational design, which allowed a score and explanation regarding the variables and their relationship (Creswell, 2003). The study did not control or manipulate variables; rather, it examined the relationship of two variables already in place. A correlational design helped discover the possible relationship between free time and HoM. The hypothesis of the current study was as follows: As academic uses of time go up, students' HoM will increase; conversely, as use of time in non-academic activities goes up, HoM will go down.

Participants

Participants were from a small, faith-based liberal arts college in the Midwest United States. Enrollment consists of approximately 1,900 students representing more than 42 states—58% of students are from out of state—and 31 foreign countries. Females make up 54% of the enrollment with male enrollment at 46%. About one sixth of students identify as a minority, and around 4% students are international. The student to faculty ratio is 13:1, with more than half of classes consisting of fewer than 20 students. The average SAT score is 1190 (of the new 1600 SAT), the average composite ACT score is 25, and the average high school GPA is 3.7 (Taylor University, n.d.).

The current study consisted of the 190 graduating and non-graduating seniors who completed the 2015 HERI College Senior Survey (CSS). The institution administered the survey at the conclusions of the fall 2014 and spring 2015 semesters. Most participants (n=100) entered school in 2011. The majority (n=100) of participants gave their religious preference as “Other Christian”. Other popular religious preferences were Presbyterian (n=15), Baptist (n=14), and Methodist (n=6).

Participants were mostly white/Caucasian (n=172). Eighty-six males and 104 females completed the survey. Six students had withdrawn from school temporarily, but all others had no interruptions in their college education. The top three majors of participants were Education (n=41), Humanities (n=33), and Business (n=27), with 12 students reporting double majors.

Instrumentation

The CSS used for this study originated at the University of California, Los Angeles Higher Education Research Institute (HERI). Focusing on post-secondary education, HERI takes an interdisciplinary approach to providing research and research training, policy studies, information, and evaluation to practitioners and institutions (HERI, 2017e).

The CSS is a comprehensive survey administered to college seniors at the end of their final semester. Alexander Astin created the CSS as a counterpart to the CIRP Freshman Survey (HERI, 2017b). The purpose of the CSS is to track students’ growth while at college. Specifically, the survey focuses on students’ college behaviors and their mindsets and perspectives during their senior year, as well as general satisfaction with the environment and culture of their respective campuses (HERI, 2017b).

The CSS explores numerous constructs and themes. For instance, Habits of Mind is one of 14 constructs in the CSS. Other constructs are Social Self-Concept, Sense of Belonging, and Student-Faculty Interaction. Additionally, the CSS collects data regarding academic outcomes, civic engagement, and diversity. The survey is comprehensive in its coverage of the many areas of student life and interest.

Variables

This study identified and explored two variables: Habits of Mind and student free time or use of time. For the purposes of this study, Habits of Mind is defined as a “unified measure of the behaviors associated with academic success. These learning behaviors are seen as the foundation for lifelong learning” (HERI, 2017d, p. 1).

Free time is defined, in essence, as any time students are not in a typical classroom environment. Free time can be further broken down to academic and non-academic uses of time. Non-academic free time involves being on social media or socializing, whereas examples of academic uses of time include tutoring a peer or meeting with a faculty member about a class. Non-academic uses of free time such as studying and working on class projects is still considered to be free time because students are not in a classroom setting while engaging in those activities.

Habits of mind construct. The main purpose of the study was to determine if and how the use of time correlates to development of HoM. The CSS includes HoM in its Construct Report and combines 11 items to assess students’ HoM. Using a three-point scale, students report “how often in the past year” they engaged in the following activities:

1. Support your opinions with a logical statement.

2. Seek solutions to problems and explain them to others.
3. Seek alternative solutions to a problem.
4. Evaluate the quality or reliability of information you received.
5. Ask questions in class.
6. Take a risk because you felt you had more to gain.
7. Seek feedback on your academic work.
8. Explore topics on your own, even though it was not required for a class.
9. Revise your papers to improve your writing.
10. Look up scientific research articles and resources.
11. Accept mistakes as part of the learning process.

Students answered on a scale of “Frequently, Occasionally, and Not at all.” The researcher labeled this grouping of HoM items “TotHoM.”

Time construct. The first grouping of time-related activities, “TotAct,” included eight items for which students could report how often they engaged in them “since entering college.” This section utilized the same three-point scale as the first group. It contained the following items:

1. Discussed course content with students outside of class.
2. Studied with other students.
3. Demonstrated for a cause (e.g., boycott, rally, protest).
4. Communicated regularly with your professors.
5. Tutored another college student.
6. Met with an advisor/counselor about your career plans.
7. Helped raise money for a cause or campaign.

8. Publicly communicated your opinion about a cause (e.g., blog, email, petition).

Exploring Time Further

The researcher created two additional groupings within the construct of time based on the perceived influence of various activities—ways of using time—on students' HoM. The first group focused on items that related to activities the researcher deemed nearly always beneficial for students, such as being involved on campus or engaging in meditation, which the researcher anticipated would result in higher HoM in participants. In response to “Over the past year, how much time did you spend during a typical week doing the following activities?” this section utilized an eight-point scale ranging from no time spent to more than 20 hours per week spent on an activity. The first grouping of items, “HrsUPTot,” included the following items:

1. Studying/homework
2. Socializing with friends in person
3. Working (for pay) on campus
4. Student clubs/groups
5. Prayer/meditation
6. Career planning (job searches, internships, etc.)

Second, the researcher anticipated that three items from this group would negatively influence students' HoM. The following items were isolated and combined into a group labeled, “HrsDOWNTot.” The survey items below were included:

1. Partying
2. Working (for pay) off campus

3. Online social networks (Facebook, Twitter, etc.)

Data Analysis

After obtaining approval from the Institutional Board of Review at the university where the study was conducted, the researcher sought and received permission from the institution's Office of Assessment to access the data files for the 2015 CSS. After the researcher gained access to the 2015 CSS, a three-step analysis was conducted using both the Statistical Package for the Social Sciences (SPSS) and Microsoft Excel.

Step one. First, data was organized in order to get a working file from which to conduct the rest of the analyses. Using Excel, the data was organized by removing all unnecessary items. Only items having to do with use of time or HoM, as discussed above, were kept. After condensing the data, the items were compiled into the previously mentioned groups: TotHoM, TotAct, HrsUPTotal, and HrsDOWNTotal. For each of these variables and HoM, the combined scores for all related items were calculated to establish a single score for each. The result was that each student had four separate scores, one for each group. These four scores were compared to one another.

Step two. Once the data was organized and grouped in Excel, a scatterplot, line of best fit, and *r-squared value* were calculated for the relationship of HoM and every other grouping of items. These values of linear regression were used to communicate the predictability that various use of time measures have on HoM (Creswell, 2003).

Step three. Finally, the organized Excel worksheet was transferred and opened in SPSS. In SPSS, the data was analyzed and a Pearson's bivariate correlation, displayed as *r*, was determined along with graphical representations that help to show the relationship between variables with more clarity along with a *p* value to show the level of statistical

significance. A bivariate correlation “expresses a correlation statistic as a linear relationship” (Creswell, 2003, p. 338). The aggregate score for HoM—the total combined score for every HoM item—was individually compared to all three groups’ aggregate scores. To reiterate, these aggregates contained items pertaining to how often students engaged in activities since entering college, TotAct, as well as items that the researcher hypothesized would correlate with high Habits of Mind (“HrsUPTotal”) or low HoM (“HrsDownTot.”)

Chapter 4

Results

The following results began to answer the two research questions that guided this study:

- What is the relationship between how students spend their time and their HoM levels?
- How do students' uses of time impact their HoM?

The Relationship between Use of Time and Habits of Mind

Because Habits of Mind (HoM) is a construct comprised of eleven individual items, the combined score for those items was determined and compared to the means of various groupings of uses of time. The most significant finding was that HoM scores tend to be higher or lower depending on students uses of free time.

The analysis for the first research question—"What is the relationship between how students spend their time and their Habits of Mind levels?"—compared HoM items to certain uses of time as well as to items perceived by the researcher to correspond with higher HoM. In the first analysis, a bivariate correlation was calculated to compare HoM to a group ("TotAct") of possible uses of time. The items were as follows: "Discussed course content with students outside of class; Studied with other students; Demonstrated for a cause; Communicated regularly with your professors; Met with an advisor/counselor about your career plans; Helped raise money for a cause or campaign; and

Publicly communicated your opinion about a cause.” The scatterplot below became the first indicator whether HoM had a positive or negative relationship with the group “TotAct.” After creation in Excel and reproduction in SPSS, the scatterplot visualized that HoM and TotAct items have moderate positive relationship.

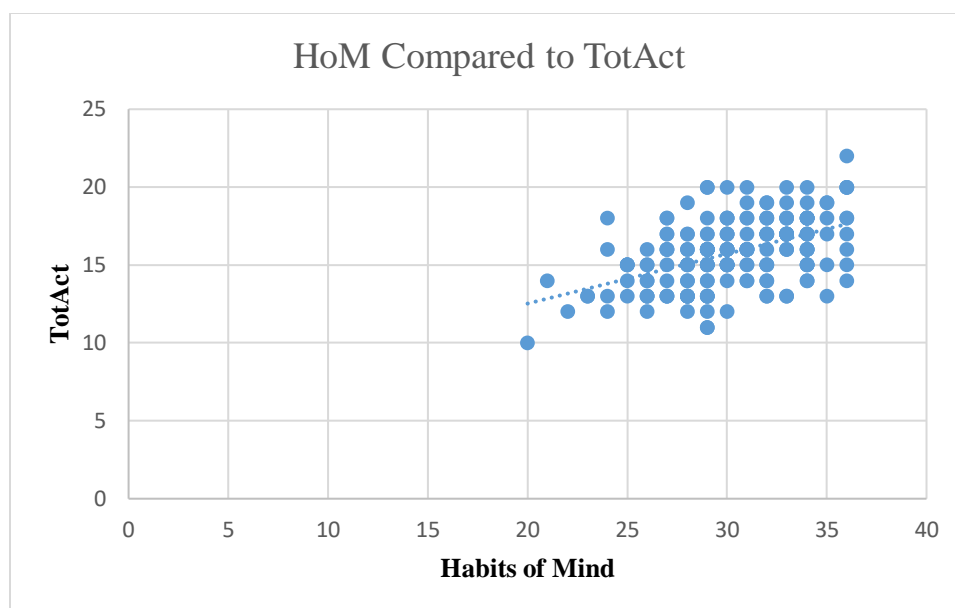


Figure 1. HoM compared to TotAct

In the first analysis, the Pearson correlation coefficient indicated a significant relationship between HoM and “TotAct,” $r(190) = .493$, $p = .000$, and $r^2 = .243$. Creswell (2012) described how r indicated the direction of the relationship between variables. Due to r being positive, there was a direct relationship between HoM and TotAct. As students engaged in these uses of time more, their HoM scores tended to increase. The .493 correlation was moderate due to falling between .30 and .70 (Creswell, 2012).

The p value, .01, described the amount of significance of the Pearson correlation. The lower the p value, the less that the relationship happened by chance alone. At .000,

there was a 99% estimate that the relationship was not by chance. In this case, there was a high likelihood of a true, statistically significant relationship.

How Do Students' Uses of Time Impact Their Habits of Mind?

The following two sets of calculations served to answer the research question, “How does use of time affect students’ HoM?” Two explanatory groupings of items—“HrsUPTot” and “HrsDOWNTot”—served as variables that the researcher expected to correspond positively and negatively, respectively speaking, to HoM.

First exploratory analysis. First, the Pearson correlation coefficient indicated a significant relationship between HoM and “HrsUPTot,” $r(190) = .229$, $p = .002$, and $r^2 = .052$. Similar to the first analysis, the p value was lower than .01; and so, there was a 99% chance that this relationship was not by chance. There was a low relationship because the correlation of .229 fell below .29 but above .00.

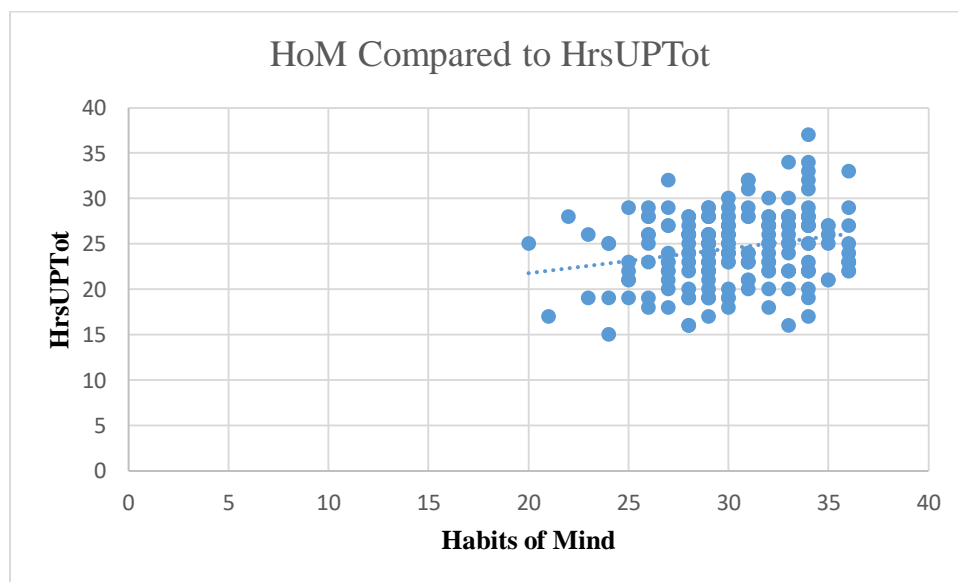


Figure 2. HoM compared to HrsUpTot

Second exploratory analysis. The second group, “HrsDOWNTot,” contained items perceived by the researcher to correspond with lower HoM. This group was made

up of the items “Partying; Working (for pay) off campus; and Online social networks.” A bivariate correlation for HoM and these uses of time showed a non-significant correlation. The Pearson correlation coefficient produced $r(190) = -0.42$, $p = .556$, and $r^2 = .002$.

Different from the other analyses, this calculated correlation was negative. This was indicative of an inverse relationship. As HoM increased, HrsDOWNTot decreased. The high p value of .556 indicated a non-significant relationship. Such a high p value meant that there was a high likelihood that this relationship was caused by chance and not due to a true relationship. This slightly negative relationship can be seen as a declining line of best fit in Figure 3.

Calculations produced an *r-squared* value of just .002. This showed that, despite a negative correlation, the amount of HoM scores explained by these uses of time was low to the point of being nearly non-existent.

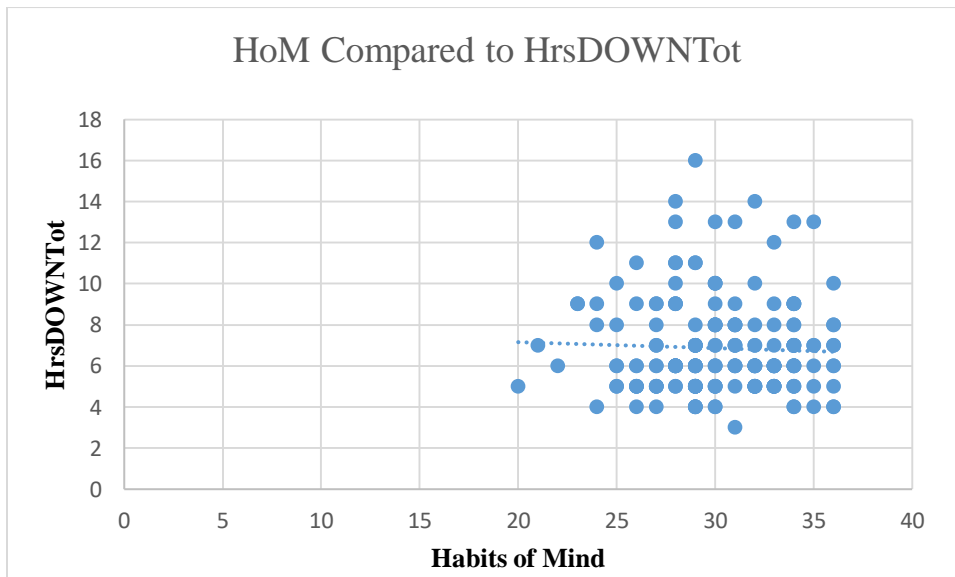


Figure 3. HoM compared to HrsDOWNTot

Conclusion

The first two analyses showed moderate statistical significance to suggest that how students spend their time does affect their HoM. The significant findings for the first two analyses suggest that various uses of time can increase HoM in students. A discussion of these findings and the possible implications concludes this study.

Chapter 5

Discussion

The purpose of this research was to examine and identify the possible relationship between use of time and Habits of Mind (HoM) in college seniors by answering the following research questions:

- What is the relationship between how students spend their time and their HoM levels?
- How do students' uses of time impact their HoM?

Statistical analyses revealed a moderate positive, direct relationship between students' HoM and certain uses of free time. These findings, when paired with the existent literature, have several noteworthy implications for educators.

This Study's Results

Analyses that compared the combined time spent discussing course content out of class, demonstrating for a cause, tutoring, and communicating one's opinion showed a statistically significant positive relationship between these uses of time and students' HoM. Furthermore, students who spent more time doing homework, socializing, working on campus, engaging with clubs, praying or meditating, and planning for their careers had statistically significantly higher levels of HoM than students with lower time spent in these activities. Finally, HoM was shown to correlate negatively to partying, working for pay off campus, or spending time on social media. This negative correlation

was not statistically significant and therefore should not be used as evidence of any kind of relationship. These findings, specifically the statistically significant results, have implications for further consideration.

The main implication from this study is that certain uses of free time can and do positively or negatively affect development of HoM. Due to this, there is some degree of certainty that students can be encouraged to develop their HoM by spending time in certain activities. Despite only a low to moderate correlation, the findings still suggest a relationship between these two variables. Considering both the *r-squared* score as well as the significance of the Pearson correlation, there can be confidence that there is a relationship between the two variables of time use and HoM.

Previous Research

As Fosnacht and colleagues (2016) said, the study of how students spend their free time is a relatively unexplored field. They also calculated that free time is about a quarter of a typical student's week while at college. For both of these reasons, it is important to understand more about what that free time promotes or hinders in students—or if that use of time even plays a significant role in students' development.

As experts have noted (Ames, 1997; Carnegie & Stynes, 2006; Ennis, 1991; Feuerstein et al., 1980; Freeley (as cited in Strugatch, 2004); Glatthorn & Baron, 1991; Goleman, 1995; Perkins, 1991; Sternberg, 1984; Waugh, 2005), HoM, or intellectual effectiveness, usually brings with it certain characteristics. This study, while not delving into specific characteristics of students, focused on common uses of free time. As shown in the findings, there is reason to believe that how students spend their time has at least a small to moderate effect on their development of HoM. When students spend time

discussing course work, demonstrating for causes, communicating their opinions publicly, as well as in other similar activities, their HoM seem to trend more positively. This relates directly with the findings of Renn and Reason (2013) that cognitive complexity leading to learning and development can come about from meaningful education engagement while in college. This study supports the supposition that students who spend more time in activities that involve teaching others or engaging in their own thoughts or opinions seem to develop their HoM at a rate different from those students who spend their time in other activities such as social media.

How students learn to think is just as important as what students learn to think while at college. Giving students the “foundation for lifelong learning” (HERI, 2017d, p. 1) is what traditional colleges should strive to accomplish. HoM, or mental disciplines, give students higher chances of success in a variety of experiences post-graduation. Because research has shown that intelligence is malleable and can be enhanced (Blackwell et al., 2007; Dweck, 2006, 2010), colleges should especially attempt to strengthen students’ levels of thinking. This is particularly true of knowledge or intellect that may not be readily apparent through academic testing. This research sought to delve deeper into what Costa and Kallick (2008) described in their research—that HoM is a composite of skills, attitudes, and other experiences gained throughout life. An intention for this study was to shed a light on a piece of this composite.

It is unfortunate that there are many unknowns about how free time influences HoM. Having more foundational knowledge would allow more confidence with these results. Comparing the data from this study to others preceding it would strengthen the findings from this research and allow for greater clarity. Despite this lack of foundation,

when examining the findings from this research with the literature that does surround the subject of HoM and free time, the results of this study support with some confidence the idea that use of free time plays a role in developing and predicting one's HoM.

Implications for Future Practice

The other major implication from these findings is that colleges need to be mindful of what their students are doing in their free time. Due to the perceived relationship between free time and HoM, what students are doing while at college has even more influence than what was previously realized. Colleges need to be intentional in encouraging activities for students that improve HoM. Because a large amount of students misuse their time (Shouwenburg, 2001; Steel, 2007), it is important for colleges to help students gravitate towards better uses of time.

With college students having an increasingly large amount of choice in what they do outside of class, there come many choices in how to engage. These choices may either enhance or deter the overall impact of college. As students spend less time studying and more time engaging in leisurely activities, colleges need to evaluate the potential consequences of such time management decisions. Additionally, as colleges desire to validate their role in today's society, there is a desire to make sure that they are equipping students with transferable skills that extend past the classrooms.

As colleges begin to learn more about the ramifications of how students are spending their time, they need to be more effective at promoting positive behavior and discouraging detrimental behavior. Student learning takes place out of the classroom just as it does in the classroom. For this reason, colleges need to be more mindful and aware of what their students are choosing to do outside of class. Colleges also need to be

mindful of what students are even at liberty to do while outside of class. For instance, giving students opportunities to tutor others, socialize, or engage in thoughtful discussion of their opinions all seem to promote higher levels of HoM and should be encouraged.

Equipping students with the means of developing HoM, or lifelong learning habits, can be a vitally important duty of today's higher education institutions. As Costa (2000) alluded, students who can learn and apply their learning to differing situations are better equipped to succeed in life. As colleges send out graduates, it is important to know that those graduates are not just knowledgeable but also equipped with a mindset of lifelong learning and adaptability that will enable them to succeed in a multitude of environments—in other words, that they have optimal HoM.

Implications for Future Research

This research is largely foundational and does not have preceding research to refer to in order to glean insight. Due to the statistically significant findings, the implications of this study warrant further research. Researchers should conduct studies to examine not only how students are spending their time but also how HoM correlates with those uses of time.

The first comparison between HoM and uses of time, "TotAct," produced an *r-squared* value of .243. This means that those combined items describing uses of time can account for approximately 24% of the corresponding HoM scores. Being able to account for up to 24% of students' HoM by examining their uses of time is an important finding because it can help inform what is contributing to students' HoM. With this in mind, examining specific activities or the environment of activities—such as friend groups or time of day—could be rewarding future research topics on this topic. This study was

successful in showing some amount of relationship between use of time and HoM, but it does not delve deeply into the many different aspects of the activities studied. Further research into specific activities could be incredibly beneficial. As more research is undertaken, deeper understanding of the impact of such activities, as well as others, will become clearer.

Another, more applicable implication would be for institutions to start good time use habits when students first arrive on campus. This could take the form of giving time to the topic of proper time management in new student orientations, having regular campus programming focusing on the topic, or adjusting when amenities or other services are open. The choice of execution will depend largely on the students and the institution itself. This beginning point of a college education is a vital time for students for a number of reasons, and administrators should put their focus on it.

“The entrance to college has been viewed as a major transition of emerging adulthood. . .” (Mattanah, Ayers, Brand, & Brooks, 2010, p. 93). In this major transition, numerous students are not equipped with the right tools to succeed. In a study by Hamilton and Hamilton (2006), many of the students who fail to stay in college cease enrollment sometime during the first year. An older study done by Levitz and Noel (1989) found that more than half of the students who choose to leave college make that choice in the first six weeks of their enrollment. Because the first year—and especially the first several weeks—are a vital part of a student’s college success, schools would be wise to implement programming to help students stay enrolled and ultimately succeed. Being able to manage one’s time effectively is an important challenge of college success (Mattanah et al., 2010).

Limitations

There are two main limitations to keep in mind when examining the findings of this research. As researchers choose to study this topic further, they should attempt to improve these limitations. One of the compelling reasons for conducting this study is the first limitation. There is a need for research on how use of free time affects students' HoM; however, there is thus little in the way of prior research that sheds light on the topic. Therefore, it can be somewhat difficult to draw any meaningful conclusions about use of free time and HoM. The findings from this study warrant further research on the subject to understand better the ramifications of how college students spend their time at school.

Another limitation is the scope and nature of the sample size. This study examined students from a faith-based institution situated in a small rural town. For students in this institution, their uses of time could look drastically different from students in a large, urban environment. Furthermore, the demographic of participants was largely homogenous, resulting in a lack of diversity among participants. With under 200 participants, the study's results come about from a relatively small sample size. Both of these limitations should be kept in mind when trying to replicate similar research.

Conclusion

By using the College Senior Survey results from 190 graduating and non-graduating seniors of a small, liberal arts college in the Midwest, the current study was able to compare the HoM construct, as defined by HERI on the CSS, to certain free time activities. The findings, while not conclusive, still demonstrated moderate statistical significance. The findings showed a low to moderate positive correlation between eight

positive uses of time and students' HoM aggregate scores. Also, six other items—“Studying/homework; Socializing with friends in person; Working (for pay) on campus; Student clubs/groups; Prayer meditation; and Career planning”—were determined to have a low positive relationship with students' aggregate HoM scores. Again, while not definitive, these significant findings do warrant attention and further action.

Promoting deeper learning in students will bring positive results not only for the students but also very likely for the colleges—and, eventually, society as a whole will start to reap the benefits of more intellectual, adaptive citizens. With the benefits previously discussed, colleges and universities would be wise to examine these findings and implications and be ready to adapt to what would be most beneficial to students. This knowledge should prove useful to colleges and universities as well as to the students and the society that depend so heavily on these colleges and universities.

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