

MOTIVATION FOR ACADEMICALLY GIFTED STUDENTS
IN GERMANY AND THE UNITED STATES:
A PHENOMENOLOGICAL STUDY

by

STEVEN JAMES BOURGEOIS

Presented to the Faculty of the Graduate School of
The University of Texas at Arlington in Partial Fulfillment
of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF TEXAS AT ARLINGTON

December 2012

Copyright © by Steven Bourgeois 2012

All Rights Reserved

ACKNOWLEDGEMENTS

I would like to thank Dr. Adrienne Hyle for her guidance and support throughout the dissertation process. I appreciate her openness to ideas and her intuitive motivational approach, which in my case involved allowing autonomy and encouraging me to produce a study that I found personally meaningful. Thanks to the other members of my dissertation committee, including Dr. Barbara Tobolowsky and Dr. Lewis Wasserman for their constructive comments during the proposal and support throughout the doctoral program. I intentionally selected the three professors whose courses I found the most rigorous and intellectually stimulating, knowing that I would receive honest and meaningful feedback. While taking on their roles as committee members, they did not disappoint.

I would also like to thank Dr. James Hardy for encouraging me to enter the PhD program at UT Arlington. Thanks to the members of my cohort for providing a range of ideas and opinions that they expressed throughout the program. Special thanks to my classmates Eric Boberg and Matt Varnell for assistance during the design stages of the dissertation and for their enlightening conversations on the way from class to the parking lot for three years. Thanks to Dr. Kaye Rogers, my former director at iSchool High, for conversations concerning educational reform and for allowing me the freedom to balance my teaching duties with full-time coursework. Thanks also to my current director,

Elaine Marchant, for supporting my graduate studies and granting me the flexibility to conduct research on several consecutive school days.

I would like to thank Tracy Jones for his friendship, willingness to exchange ideas, and unconditional support during my doctoral studies. Thanks to my friend and colleague Ross Miller for reading and editing chapter drafts and for engaging in an extended discussion of issues relating to academic motivation. Thanks to Doug Wicks for his friendship, interest in my project, and insight into learning. Thanks to my friends Pam and John Johnson—two of the finest teachers I have encountered.

I would like to thank my father, James Bourgeois, for his constant support and thoughtful comments on all drafts of the dissertation. Thanks to my sister, Valerie Connors for her humor and inspiration, and for being my writing partner during our recent visit to Oregon. Thanks to my brother Vincent St. John for his words of encouragement throughout the years.

I would like to thank my children, Aubry, Jonah, and Eleanor for their patience as I completed the PhD program and dissertation. The countless hours that I spent at work in my small office certainly affected them most directly. Although I cannot reclaim the time, I hope and expect that I can emerge from my office to become a more engaged father.

And finally, I would like to thank my wife, Jennifer Bourgeois, without whose support I could not have completed a course, passed an exam, or written a

chapter. I am mindful that as I worked to complete my doctoral degree, she worked as well: Running interference from the children, sacrificing family outings, and essentially acting as a single mother as I obsessed over issues relating to student motivation. She also provided editing, acted as a sounding board for ideas, and continually encouraged me to press forward. Prior to her passing, my mother, Janet Bourgeois, had the occasion to tell my wife that a marriage is never equal. Nothing could be truer, particularly since I see myself as the beneficiary of that inequality. I hope that I have the opportunity to return the favor, though I imagine it will never be in equal measure. With that in mind, I dedicate this dissertation to my wife, Jennifer.

November 2, 2012

ABSTRACT

MOTIVATION FOR ACADEMICALLY GIFTED STUDENTS

IN GERMANY AND THE UNITED STATES:

A PHENOMENOLOGICAL STUDY

Steven James Bourgeois, PhD

The University of Texas at Arlington, 2012

Supervising Professor: Adrienne E. Hyle

Recent trends toward globalization have engendered interest in comparative educational systems, pointing toward more fundamental change beyond the current focus upon accountability measures. This phenomenological study considered the effect of extrinsic motivators on the intrinsic motivation of academically gifted students in Germany and the United States. Nine top performing 16 and 17-year olds attending private schools in Germany and the United States participated in open-ended interviews to determine their motivational orientation toward academic tasks. Teachers and administrators from both schools provided comments to support the contextual understanding gained from classroom observations. Although numerable quantitative studies have measured levels of intrinsic and extrinsic motivation for diverse groups, there are few phenomenological studies that attempt to explore the subtlety of

cognitive processes. Conspicuously lacking also are cross-cultural studies relating to intrinsic and extrinsic motivation. In the present study, I posed research questions relating to how academically gifted students in both countries experience motivation toward academic tasks. Through the frames of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997), I considered how extrinsic motivators such as grades, high-stakes tests, and parental expectations affect intrinsic motivation. Results indicated that the American students experienced relatively more autonomy-supportive instruction, a greater sense of belonging in the school environment, and more frequent flow experiences in the academic context than their German counterparts. Conversely, the German students exhibited less focus upon competition and greater intrinsic interest in their academic activities than the American students. With this in mind, the study provided insight into both educational systems, particularly with respect to student motivation. It addressed the unintended consequences of standards-based instruction, uniform teaching methods, and high-stakes testing that have become the norm in both countries. Perhaps most importantly, it identified gifted academic motivation as a potential problem, rather than as an outward sign of a school's success.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
ABSTRACT.....	vi
Chapter	Page
1. DESIGN OF THE STUDY.....	1
Statement of the Problem	9
Purpose of the Study	13
Research Questions.....	14
Orienting Theoretical Frameworks	15
Self-Determination Theory	16
Flow Theory.....	17
Methodology.....	19
The Researcher.....	21
Data Needs	23
Data Sources	24
Data Collection	25
Student Participant Orientation.....	25
Campus Tour and Interviews with School Staff....	26
Student Interviews	26
Classroom Observations	27
Survey Monkey Questions.....	28

Data Analysis	28
Significance of the Study	30
Research	30
Theory	31
Practice	31
Chapter I Summary	32
Reporting	33
2. REVIEW OF LITERATURE	36
Cross-Cultural Aspects of the Study	36
Elementary Education	36
Secondary Education	37
University Education	38
German Educational Traditions	38
Program for International Student Assessment (PISA)	42
High-Stakes Testing	45
Self-Determination Theory	49
Theoretical Foundations	49
Early Studies	50
Meta-Analyses on Rewards and Intrinsic Motivation	57
Additional Extrinsic Motivators	62
The Process of Internalizing Extrinsic Goals	71

Controlling vs. Autonomy-Supportive Parenting	74
Autonomy-Supportive vs. Controlling Teaching.....	77
From Self-Determination to Flow.....	81
The Elements of Flow Theory	82
Flow Theory and Games	86
Flow Theory and Digital Games/Virtual Worlds.....	87
Flow Theory and Athletics.....	90
Autotelic Personality and Flow Experiences	91
Family Influences on Flow Experiences.....	92
Flow Experiences in the Classroom.....	93
Chapter II Summary.....	97
3. METHODOLOGY	98
Philosophical Overview	98
Methodological Overview	101
Research Instruments	105
Translation of Protocols	109
The Sites.....	109
Ambrose Academy.....	110
Goethe School.....	112
Comparisons	113
Recruitment and Data Collection.....	114

Conducting the Interviews	117
Classroom Observations	119
Survey Monkey Data	120
Transcription of Data	121
Coding and Preparation of Data for Analysis	122
Chapter III Summary	124
4. PRESENTATION OF DATA.....	126
The Student Participants	128
The Realities of Preparation.....	131
When the Students Study	132
Where the Students Study	134
Use of Music During Study	136
Digital Distractions During Study	137
Memorization and Study Techniques	141
Time Devoted to Homework and Study	146
The Realities of Academic Achievement	151
Competition.....	152
Focus upon Grades and Measurable Outcomes	157
Future Orientation Toward College and Career.....	167
Self-Perception of Talent and Work Ethic.....	173
The Realities of the Classroom	176

Connection to the School.....	177
Connection to Classmates.....	180
Classroom Experiences.....	185
References to Academic Interest	203
Connection to Current Events.....	216
Experience of Pressure/Tension.....	218
Experience of Choice for American Students.....	222
Experience of Choice for German Students.....	225
Sustained Academic Activities	227
Manageable Challenge.....	228
Experiences with Complete Attention	230
Perception of Time.....	237
The Realities of the Adults in the Students' Lives	240
Connection to School Administration.....	240
Connection to Teachers.....	241
Familial Relationships	249
Chapter IV Summary	257
5. ANALYSIS.....	258
Philosophical Overview	260
Self-Determination Theory	261

School as Gateway to College	262
The Presence of Grades and Assessment.....	266
Examples of Independent Interest and Detail	268
Interest Limited to the Scope of the Course.....	270
Examples of Choice	272
Pressure Related to Tests and Performance	279
Controlling vs. Autonomy-Supportive Feedback	281
Deadlines and Procrastination.....	283
Perceived Competence.....	285
Competition.....	287
Relatedness	291
Flow Theory.....	301
How Self-Determination and Flow Theories Inform the Data	308
What is not Explained by the Two Theories?.....	310
Chapter V Summary	312
6. SUMMARY OF THE STUDY, CONCLUSIONS, IMPLICATIONS, AND DISCUSSION	314
Organization of the Chapter.....	318
Motivational Differences	319
Differing Levels of Independent Academic Interest.....	319
Differing Levels of Choice in the Academic Program	320

Differing Levels of Choice at the Classroom Level	320
Differing Future Orientations Toward College.....	321
Differing Levels of Autonomy-Supportive Teaching.....	322
Differing Levels of Autonomy-Supportive Feedback	322
Differing Levels of Perceived Competence	323
Differing Levels of Competition.....	324
Differing Levels of Relatedness at School.....	324
Differing Frequency of Flow-Type Experiences	325
Motivational Similarities	326
Similar Academic Preparation Routines.....	327
Similar Motivation to Obtain Good Grades.....	327
Similar Parental Approach of Autonomy-Support	327
Similar Levels of Anxiety in School.....	327
Similar Experience of Imposed Deadlines.....	328
Similar Experience of Academic Procrastination	328
Other Realities About Academic Motivation	328
Self-Worth Theory and Motivation	329
Academic Grit and Achievement.....	330
Cross-Cultural Interpretation of Data	331
Implications for Research	337
Implications for Theory	338

Implications for Practice	340
Suggestions for Future Research	341
Limitations and Lessons Learned	342
APPENDICES	
A. STUDENT ORIENTATION PROTOCOL (ENGLISH)	346
B. SCHOOL DIRECTOR PROTOCOL (ENGLISH)	348
C. TEACHER PROTOCOL (ENGLISH).....	351
D. STUDENT PARTICIPANT PROTOCOL (ENGLISH)	354
E. SURVEY MONKEY STUDENT PROTOCOL (ENGLISH)	359
F. STUDENT ORIENTATION PROTOCOL (GERMAN).....	362
G. SCHOOL DIRECTOR PROTOCOL (GERMAN)	364
H. TEACHER PROTOCOL (GERMAN)	367
I. STUDENT PARTICIPANT PROTOCOL (GERMAN).....	371
J. SURVEY MONKEY STUDENT PROTOCOL (GERMAN)	377
K. CLASSROOM OBSERVATION PROTOCOL.....	380
REFERENCES	383
BIOGRAPHICAL INFORMATION.....	403

CHAPTER ONE

DESIGN OF THE STUDY

Students sitting in a classroom have many possible motivations to learn the curricular content. They could be motivated to achieve a desired grade, to please teachers or parents, to earn the right to participate in extra-curricular activities, or to maintain self-esteem by avoiding failure. Students might take a longer view and learn the material to achieve desired grades or grade point average, which might gain them access into a prestigious university and effectuate a favorable increase in their future earning power. Within the same classroom, other students may be motivated to learn material because they consider it to be inherently meaningful and of some personal value. Deci and Ryan (1985) consider academic motivation to be subtle and ever-changing, depending upon the discipline and the specific learning activities. For example, a student may be intrinsically motivated to complete research for a history project, yet rely on extrinsic incentives to complete math homework.

Some of the greatest thinkers of Western culture have addressed the concept of motivation, often putting forth their proposals for the most fundamental of all drives. In *The Wealth of Nations*, Smith (1937) proposed that humans are primarily motivated to acquire wealth through self-interest (original work published 1776). Kant (2005) turned this formulation on its head by suggesting a moral instinct that could be cultivated through education (original

work published 1785). He stated that in the strictest moral sense, individuals should be motivated through a feeling of duty, declaring “Act only in accordance with that maxim through which you can at the same time will that it become a universal law” (Kant, 2005, p. 81). Schopenhauer (2008) put forth a more pessimistic view, suggesting that the goal of existence is to silence the will (original work published 1818). For Schopenhauer, art represented a means through which the inherent pain and frustration of human life could be momentarily calmed. He considered the emergence of boredom as a profound argument against the value of living. Mill (1863) proposed a qualitative difference between selfish actions and those intended to benefit society. However, he still maintained that pleasure was the driving force, and “to desire anything, except in proportion as the idea of it is pleasure, is a physical and metaphysical impossibility” (Mill, 1863, p. 58). Marx (1961) held that humans strive to assert themselves within their historical and social context (original work published 1867). Although the external sign of this phenomenon manifests itself through class struggle at the economic level, Marx maintained that humans act to maximize their personal interest and that of their social group.

In keeping with the primacy of self-interest, Darwin (1872) argued that humans, like all living creatures, are motivated to survive. By adapting to the environment, individuals foster the survival of the species. Nietzsche (1974) took Darwin’s argument a step further, augmenting the survival drive with the will to

acquire and exercise power (original work published in 1886). His works represent a sustained attack upon the possibility of altruistic motivation. This view parallels that of Freud (1961a), who proposed two conflicting drives: *eros*, a love instinct, and *thanatos*, a death instinct (original work published 1920). Through clinical studies, Freud (1961b) demonstrated how the drives of sex and aggression were opposed and thwarted by the forces of civilization (original work published 1930).

For cognitive psychologists, motivation represents an inner process that explains why individuals act in certain ways (Deci, 1975). Cognitive theories focus upon the process of thinking and carry the assumption that thoughts provide a causal influence upon actions (Deci, 1975). Within the educational context, the student is cognitively present during the learning moment, but also focused upon what preceded it. A complex chain of causality within the conscious and subconscious mind of the student leads to the present moment. In Shakespearean terms, "What's past is prologue" (Shakespeare, ed., 1974, p.1621). Within any given moment, the student's past orientation is joined by thoughts of the future. The specific nature of what comes next for each student reveals something about the qualitative character of the learning moment. For our purposes, we can define that chain of causality, coupled with internal setting of goals, as motivation (Deci, 1975).

In the mid-20th century, psychologists began to examine the complexity of human motivation, suggesting models to explain inner processes. Hull (1943) proposed four basic drives, including hunger, thirst, sex, and avoiding pain. Maslow (1943) asserted that once the basic needs have been satisfied, individuals aspire to reach their potential through self-actualization. According to Deci (1975), traditional drive theory “involves a deficit or need in body tissues outside the nervous system which (1) energizes behavior that results in a consummatory response which reduces the need or deficit and (2) produces learning” (pp. 28-29). This assertion aligns with Skinner’s (1953) approach, where human motivation is strictly determined by external causes. By assuming an absence of inner motivation, Skinner characterized behavior as a response to stimuli, asserting “A person is not an originating agent; he is a locus, a point at which many genetic and environmental conditions come together in a joint effect” (1974, p. 172). Skinner’s behavioral psychology continues to have profound impact upon the discipline and represents a justification for the token economy of rewards and sanctions that characterizes modern education (Kohn, 1993).

While Skinner (1953) conducted research on how to modify behavior through operant conditioning, Hartmann (1958) and White (1959) considered the phenomena of how humans and animals explore their surroundings, exhibit a motivation to play, and attempt to assert mastery and autonomy over their environment. Later, DeCharms (1968) put forth the concept of *personal*

causation, where “man’s primary motivational propensity is to be effective in producing changes in his environment” (p. 269). According to White (1959), the desire to explore one’s environment does not fit the traditional definition of a drive. Strictly speaking, the need to explore and manipulate one’s surroundings is not the result of a deficit within the nervous system. Nor does this exploration result in a satiation of the need. In fact, upon completion of the exploration, one is likely to experience boredom, which may have been the cause of the exploration in the first place (Deci, 1975).

Moving beyond a strict drive theory, White (1959) and DeCharms (1968) introduced the concepts of competence and self-determination to describe how individuals attain optimal levels of arousal. DeCharms (1968) stated that the individual “strives to be a causal agent, to be the primary locus of causation for, or the origin of, his behavior; he strives for personal causation” (p. 269). He described individuals who believe they are the “locus of causality” (p. 328) for their own behavior as *intrinsically motivated*. According to Deci (1975), intrinsic motivation represents an inner drive to take part in an activity for its inherent enjoyment. Dewey (1913) referred to this state as “unified interest” (p. 15) where the individual devotes full and “undivided” (p.15) interest towards the completion of a task. Deci and Ryan (1985) suggested that social factors, including parenting style and education, can either enhance or inhibit innate interest and curiosity of children (Deci & Ryan, 1985).

DeCharms (1968) identified individuals who perceive an external locus of causality for their actions to be *extrinsically motivated*. In this instance, the individuals performed actions to receive a contingent reward or to avoid a sanction. Extrinsic motivators represent the fundamental tool of behavioral psychologists (Skinner, 1953) to effectuate behavioral changes. The opposition of intrinsic and extrinsic motivation is central to the current study and has had profound implications for school reform from progressive movement of Dewey (1913) and Kilpatrick (1951) to attacks upon standardized curriculum and testing of today (Kohn, 1993; Popham, 2001).

Researchers have documented substantial use of extrinsic motivators in the home (Garn, Matthews, & Jolly, 2010; Kohn, 1993), the school (Kohn, 1993; Newby, 1989), and in the workplace (Halachmi & Holtzer, 1987). The application of extrinsic motivators, such as deadlines, grades, high-stakes tests, honor rolls, praise, stickers, certificates, gold stars, trophies, competition, controlling language, surveillance, and monetary rewards permeates kindergarten through graduate school (Kohn, 1993). Although potentially effective in the short-term, extrinsic motivators have been shown to have hidden costs (Ryan & Weinstein, 2009), including an undermining impact upon long-term intrinsic motivation to learn (Deci, Koestner, & Ryan, 1999; Deci & Ryan, 1985). Research has shown that extrinsically motivated students display less complex learning (Deci, Koestner, & Ryan, 1999), less creativity (Grolnick, Deci, & Ryan,

1997), less risk-taking behavior (Hennessey, 2000), less ability to sustain attention in academic tasks (Deci & Ryan, 2000), and less desire for academic challenges (Reeve, 2006). Extrinsically motivated students are more likely to demonstrate academic procrastination, which has a detrimental impact upon performance (Senecal, Koestner, & Vallerand, 1995).

Although extrinsic motivators are ubiquitous in the school setting (Kohn, 1993), Reeve and Halusic (2009) described classroom practices that promote self-directed, intrinsically motivated learning. These included taking the student's perspective, offering choices, and providing feedback that is formative and informational (Reeve & Halusic, 2009). Admittedly, students receive no shortage of feedback in most educational settings. However, public policy has encouraged that feedback to become increasingly evaluative and summative in nature (Popham, 2001). A host of psychological theories, including self-efficacy (Bandura, 1999; Pajares, 2008) and self-worth motivation theory (Covington, 2009) assert that students construct self-worth based upon internalization of this feedback. If the feedback indicates failure in a relative or absolute sense, then students will likely minimize self-imposed goals and avoid challenges with the intention of avoiding failure (Covington, 2009). The culture of assessment has created a generation of students who attempt to perform up to standard without enjoying what they are doing.

Repeated exposure to extrinsic motivators has profound psychological consequences for students who grow to value the reward more than the joy of learning itself (Ryan & Deci, 2000). By presenting school as work and learning as a commodity, educators have systematically severed learning from the self-determined intentions of students. While exhibiting external signs of attention, students develop a form of “psychic entropy” (Csikszentmihalyi, 1997, p. 66), where cognitive intentionality and action conflict.

In the larger picture, educators are employing outdated methods of operant conditioning (Skinner, 1953) to induce students to reach proscribed levels of academic achievement. As school administrators are evaluated increasingly based upon student achievement measures, they institute controlling practices that directly influence teaching style (Pelletier & Sharp, 2009). As administrators incentivize teaching through performance measures, teachers respond by applying stricter control over students (Flink, Boggiano, & Barreyt, 1990). This focus upon measurable student outcomes has dominated public policy in education at all levels (Popham, 2001). Ironically, concentration upon extrinsic motivators has been shown to decrease academic achievement (Benware & Deci, 1984; Boggiano, Flink, Shields, Seelbach, & Barrett, 1993). Just as the act of measurement influences that which is measured on the quantum level (Wheatley, 2006), so does educational measurement impact student performance and classroom practice. According to *Campbell's Law*, “The more any quantitative

indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social processes it is intended to monitor” (Campbell, 1976, p. 49). For McNeil (1996), “measurable outcomes may be the least significant results of learning” (p. xviii). By undermining students’ intrinsic motivation to learn, educators have created a new problem that cannot be solved by stronger incentives, stricter controls, or more sophisticated measurement.

Statement of the Problem

We know that academic intrinsic motivation decreases as students progress through multiple levels of education, and specifically from kindergarten through 8th grade (Gottfried & Gottfried, 1996, 2006; Harter, 1981; Lepper, Iyengar, & Corpus, 2005). Researchers (Deci, 1975; Lepper, Green, & Nisbett, 1973; Ryan, 1982) have employed experimental designs with self-report measures to establish the undermining impact of rewards and praise upon intrinsic motivation. They have also administered a variety of questionnaires to assess motivational orientation for various groups (Vallerand, Blais, Briere, & Pelletier, 1989; Vallerand et al., 1993). Although these quantitative studies revealed participants’ perceived motivational orientation at a given moment, they did not take into account the complex chain of inner causation inherent in cognitive processes (Deci, 1975). By viewing the phenomenon of motivation in isolation for a very short period of time, researchers have neglected questions concerning

why and *how* individuals develop motivational perspectives. In their search for psychometric validity, researchers have failed to appreciate the nuanced and highly personal nature of motivation.

Although there are extensive quantitative studies measuring levels of intrinsic and extrinsic motivation for diverse groups, there are few phenomenological studies that attempt to explore the subtlety of cognitive processes. Deci and Ryan (1985) characterized the study of motivation as “an inquiry into the *why* of behavior” (p. 3). Through the words of individuals experiencing the phenomenon of academic motivation, we can gain a nuanced understanding of inner states. According to Van Manen (1990), the purpose of phenomenology “is to construct an animating, evocative description (text) of human actions, behaviors, intentions, and experiences as we meet them in the lifeworld” (p. 19).

Conspicuously lacking also are cross-cultural studies relating to intrinsic and extrinsic motivation. Hantrais (2007) suggested that cross-cultural comparisons allow the researcher to “see the familiar from a new perspective” (p. 13) and to gain an understanding as an outsider that “was not obvious to insiders” (p. 13). Because cross-cultural (or cross-national) studies are comparative in nature, they provide a lens through which to view a phenomenon critically. Particularly in light of the recent focus upon measurable performance standards, academic motivation has been viewed as something that must be *increased*.

However, the phenomenon has not been problematized; that is, educators and researchers have rarely considered the problematic consequences of increasing academic motivation. To accentuate the unintended consequences of extrinsic motivation, cross-cultural research can expose educational practices that may escape scrutiny within the context of a single country. Kohn (1987) described how cross-national investigations can offer a valuable perspective, noting “In no other way can we be certain that what we believe to be social-structural regularities are not merely particularities, the product of some limited set of historical or cultural or political circumstances” (p. 713). He went on to assert that “cross-national research is equally valuable, perhaps even more valuable, for forcing us to revise our interpretations to take account of cross-national differences and inconsistencies that could never be uncovered in single-nation research” (p. 713).

While cross-cultural approaches have examined systemic factors influencing academic motivation (Chirkov, 2009; Chirkov & Ryan, 2001), few studies have focused attention upon the motivational orientation of academically gifted students. This segment of students attains officially sanctioned levels of success, irrespective of the motivational techniques employed. In fact, the relatively high levels of achievement for academically gifted students could speak to the successful implementation of contingent rewards and incentives.

According to the criteria of their academic institutions, these students have been

highly successful. They have negotiated their way through the system and come out on top, based upon the definition of success put forth and blessed by the teachers and school administration. They have been successful at every level and sustained their efforts to finish at the top of their graduating class, based upon standardized test scores and accumulated grades over a period of years. These students represent the desired product the institutions intend to produce.

With this in mind, there is a gap in the literature with respect to studies of the academic motivation for gifted and successful students. Although these top students have attained high grade point averages, they may possess only moderate levels of true academic interest. High-performing students have learned to work through the system with focus upon measurable outcomes, rather than upon the specific academic content. In broader terms, the phenomenon of interest may concern what remains, motivationally speaking, after a student has successfully worked through the academic program. The voices of academically successful students may reveal the cumulative costs of the token economy present in most school systems. The academically gifted students may also shed light on the process of internalization and goal framing, which represents a transformation from extrinsic to intrinsic orientation towards learning. If one of the goals of education is to create life-long learners, then it may be instructive to study the end product (motivationally speaking) that represents a successful secondary career. The words of exemplary student may reveal some of the intangible (non-

measured) academic outcomes of education and perhaps expose what is lacking in the academic program.

Although many psychological theories could be applied to student motivation, self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1997) provide the best way to begin the exploration of intrinsic and extrinsic motivation in the academic setting. Most motivational theories focus upon the quality of the outcome rather than the internal processes prior to action. For example, they may measure student achievement based upon a motivational intervention, such as the imposition of a rewards system. It may sound counterintuitive to view the motivational orientation of highly successful students as a problem. In fact, parents and teachers strive to instill an achievement-oriented motivational outlook in students. However, despite the outwardly successful academic outcomes of gifted students, the quality of learning with respect to creativity and depth may be compromised in the process. The combined theoretical lenses of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) provide a critical perspective for viewing the phenomenon of motivation for academically successful students as a problem with far-reaching implications.

Purpose of the Study

Through the lenses of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997), the purpose of this dissertation

study was to explore the phenomenon of academic motivation for high-achieving 16 and 17-year olds attending private schools in Germany and in the United States. The study provided insight into the cognitive motivational processes of secondary students in both countries as they undertake a variety of academic tasks. Because of systemic differences with respect to tracking, standardized testing, and college entrance requirements for German and American schools, the study revealed educational practices that influence the quality of student motivation. The study explored how high-achieving students developed their motivational orientation toward specific academic tasks and disciplines. It examined factors within and outside of school that contributed to this motivational orientation for specific students. It clarified the extent to which grades, high-stakes tests, college admissions requirements, and monetary considerations affected the students' attitudes toward learning activities. In addition, it considered factors from the home environment, such as the application of rewards and sanctions, and how they influenced the motivational orientation of students. Finally, it evaluated the extent to which academically gifted students in both countries maintained intrinsic interest in performing academic tasks.

Research Questions

The following research questions guided this study:

1. How do academically gifted students in Germany and the United States experience motivation toward academic tasks? Specifically, how do they:

develop their motivational orientation toward specific academic tasks and disciplines?

experience the presence of grades, high-stakes tests, parental expectations, and other extrinsic motivators in school?

2. In what ways do the experiences of academically gifted students in Germany and the United States support understandings posited in self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997)?
3. What other realities about motivational experiences toward academic tasks and disciplines are revealed through observation, interviews, and journals of academically gifted students in the United States and Germany?
4. How useful are self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) in understanding the motivation of gifted German and American students?

Orienting Theoretical Frameworks

Literature relating to both self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) provided context for the full spectrum of motivational orientations present in academically gifted students. I presented the seminal studies relating to both theories and specific research relating most directly to student motivation.

Self-Determination Theory

Self-determination theory (Deci & Ryan, 1985) was constructed based upon White's motivational explanation for the phenomenon of exploratory play and DeCharms' (1968) concept of personal causation. Self-determination theory posits three universal human needs, including autonomy, competence, and relatedness (Deci & Ryan, 1985). *Autonomy* is the central element of self-determination theory to the extent that it represents a manifestation of a perceived internal locus of control for actions (Deci & Ryan, 1985). *Competence* represents a perceived expectation of performing activities at a proscribed level (Deci, Vallerand, Pelletier, & Ryan, 1991). This psychological need contains significant overlap with the fundamental assumption of self-efficacy theory (Bandura, 1999), where individuals develop confidence through a series of mastery experiences. *Relatedness* concerns how students develop emotional connections with significant others such as teachers and fellow students (Deci et al., 1991). Deci et al. described self-determined acts as being "fully endorsed" (p. 328) and intrinsically motivated at the cognitive level. According to Deci and Ryan, self-determined acts foster both psychological well-being and happiness. The degree to which these needs are met either supports or undermines individuals' intrinsic motivation to learn about and act upon their surroundings (Deci & Ryan, 1985).

Just as cultural factors, such as parenting style or education, can enhance intrinsic motivation, they can also undermine long-term interest (Deci & Ryan,

1985). For this reason, self-determination theory has been studied within the contexts of education (Deci & Ryan, 1985), parenting (Garn, Matthews, & Jolly, 2010), competitive athletics (McAuley Duncan, & Tammen 1989), psychology (Milyavskaya et al., 2009), weight loss (Kim, Deci, & Zuckerman, 2002), and health care (Ryan, Patrick, Deci, & Williams, 2008). Originally conceived as a meta-theory, self-determination theory (Deci & Ryan) is comprised of five separate mini-theories relating to human motivation. The mini-theories most relevant to the present study are *cognitive evaluation theory* (Deci, 1975) and *organismic integration theory* (Deci, 1975). Cognitive evaluation theory deals specifically with factors that enhance and undermine intrinsic motivation. Organismic integration theory attempts to explain the process by which individuals integrate extrinsically motivated activities into their sense of self (Deci & Ryan, 1985).

Flow Theory

Flow theory (Csikszentmihalyi, 1975, 1990, 1997) represents a natural extension of self-determination theory (Deci & Ryan, 1985) in that it describes the inner processes of individuals experiencing intrinsic motivation.

Csikszentmihalyi introduced the concept of *flow* as an inner state where the mind is focused on a single task. The conditions that support flow experiences include clear goals, specific rules, appropriate responses, lack of inner questioning, immediate feedback, and optimal challenge (Csikszentmihalyi, 1997).

Individuals experiencing flow exhibit a lack of self-consciousness and feel that time passes quickly (Csikszentmihalyi, 1997). Flow is an experience for which one attends completely and that is “worth doing for its own sake” (Csikszentmihalyi, 1997, p. 32). This verbiage aligns directly with Deci’s concept of intrinsic motivation (1975). However, flow takes place in time and represents a heightened state of intrinsic motivation common to athletes and artists. When an athlete is “in the zone” (Csikszentmihalyi, p. 29, 1997), there is an alignment between skills and challenge. An artist may experience “aesthetic rapture” (Csikszentmihalyi, p. 29, 1997) while engrossed in the creative process. Rigby and Przybylski (2009) found that optimal challenge and immediate feedback are also central to virtual gaming. They argued that virtual games present players with an array of choices, often evoking flow experiences by leveraging the fantasy and curiosity of the players (Rigby & Przybylski, 2009).

It is not surprising that Csikszentmihalyi (1975, 1990, 1997) provided most of his examples of flow from leisure-time experiences. However, he argued that individuals commonly experience flow while working, driving, socializing, or studying (Csikszentmihalyi, 1997). Although flow experiences in the classroom may be conspicuous for their absence, the framework may illuminate the concept of academic intrinsic motivation. To foster flow experiences in the classroom, teachers would need to offer students an array of academic choices and differentiated instruction. They would have to provide immediate feedback and

ensure that students operate at an optimal level of challenge throughout each activity. Teachers would need to support a flexible use of class time, following Montessori's (1912) prescription to never interrupt a student who is enveloped in a learning task. For students engaged in flow experiences, time would seem to pass quickly and they would personally endorse their learning at the highest level. By fleshing out what it means to be intrinsically motivated, flow theory (Csikszentmihalyi, 1975, 1990, 1997) provides a complementary frame to self-determination theory (Deci & Ryan, 1985). This combination of theoretical frames affords a unique perspective for research on student motivation.

Although self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1997) offer explanations of gifted student motivation, total reliance upon these perspectives may work against the hermeneutic process of a phenomenological study. In addition to the aforementioned theoretical frames, the specific research questions, along with the perspective of the researcher, drove the interpretation of data. As the purpose of a phenomenology is to construct the essence of a phenomenon (Van Manen, 1990), the study represented an attempt to describe and interpret the data, rather than to analyze it exclusively through an existing theoretical lens.

Methodology

This dissertation study employed qualitative methodology to provide a detailed and nuanced understanding of gifted student motivation. Qualitative

research fosters a contextual understanding of an issue and provides insight concerning why individuals act in certain ways (Creswell, 1994; Marshall & Rossman, 1999). Qualitative researchers apply inductive techniques of data analysis to reveal themes that may not emerge through quantitative studies (Creswell, 1994; Patton, 2002). Qualitative researchers study phenomena of interest in their natural setting (Creswell, 1994; Denzin & Lincoln, 2003; Lincoln & Guba, 1985) and employ multiple sources of data reflecting multiple perspectives. Researcher and participants negotiate meaning in an interpretive process, which takes into account the reflexivity of the researcher and the social context of the phenomenon (Van Manen, 1990). Central to a hermeneutic phenomenological study are questions concerning the role of the researcher as interpreter (Creswell, 1994; Van Manen, 1990). With this in mind, I devoted significant attention to the philosophical assumptions of phenomenology and the process of hermeneutics. This necessitated an historical exploration of the phenomenological method, with emphasis on the work of Heidegger and Gadamer.

Within the qualitative methodology, this study employed the hermeneutic phenomenological approach. Through interviews, classroom observations, and analysis of participants' written responses, the study attempted to provide insight into the phenomenon gifted motivation.

The Researcher

Recognizing the centrality of the researcher as interpreter in a phenomenological study, I state my interpretive perspective. I have taught high school German for the past 18 years. This affords me insight into the German language and the educational culture that is a fundamental element of the study. I have developed a level of oral and written fluency that allowed me to conduct the interviews at the German school in the participants' native language. I have had the chance to teach and visit German classrooms in my capacity as coordinator of several German exchange programs. Through student exchanges, I have had the opportunity to observe visiting German students within the school setting in the United States as well. By observing the interaction of German and American students, I developed interest in their relative motivational orientation toward academic tasks. Specifically, I suspected that the German students were more mature and possessed more interest and were more likely to engage in discussions of academic content than their American counterparts.

In addition to the perspective I established as a German teacher, I bring a fundamental stance as an educational reformer. I have attempted to reform education at both the classroom and the school levels. I am a founding member of an innovative charter school specializing in Science, Technology, Engineering, and Math (STEM). By being on the ground floor of such an enterprise, I have become an advocate for project-based and inquiry-based learning

methodologies. This instructional perspective has engendered my interest in student motivation and self-directed learning models.

My passion for educational reform is equaled by my love of German literature and philosophy. My primary influences include Schopenhauer, Nietzsche, Kafka, Hesse, Mann, and Heidegger—all of whom challenged the intellectual prejudices of their day. My approach to student motivation developed out of a cynical view (in the most positive sense) toward current educational practice. I mistrust the current trend in education toward reliance upon measurable outcomes of student achievement. My bias rests with the concept of intrinsic motivation and learning for its own sake. The idea of intrinsic motivation was crystalized by Nietzsche's (1961) image of a child as a "self-propelling wheel" (p. 264) in his book titled *Thus Spoke Zarathustra* (original work published 1885). The German version ["ein aus sich rollendes Rad"] (Nietzsche, 1885, p. 27), reads: *a from-itself rolling wheel*. This implies the possibility of an inner causation at the cognitive level where thought leads to action. I consider this type of inner drive to be both the ideal and goal of education.

My experiences as a professional jazz pianist and varsity tennis coach have provided me many examples of heightened intrinsic motivation, or flow experiences (Csikszentmihalyi, 1997). The artist and the athlete share a reverence for the moment which contains optimal challenge, the expectation of success, and

a feeling that time passes quickly. Having experienced the self-directed approach to learning, I find it frustrating to work with students who rely upon external incentives to complete learning activities. I consider learning to be a basic human need that is both enjoyable and essential to our happiness.

I also have a vested interest in reforming the motivational orientation of students. My three children, ages five, nine, and 11 represent tangible examples of academic motivation. My youngest is on the verge of entering kindergarten and possesses a curiosity and love of learning that is contagious. My two older children have entered a transitional period where they often speak of hating public school. They are gradually becoming exposed to standards-based instruction and high-stakes testing. As I write about the benefits of student-driven learning, they talk of worksheets and describe school as *work*. My goal is to find or create a school where my older children can enter school with the same sense of joy and wonder that my youngest child possesses.

Data Needs

To complete the study, I collected data that provided context and insight into the phenomenon of academic motivation for gifted students. I required repeated exposure to the research sites to understand how the instructional setting influences student learning and motivation. This included direct classroom observation and a tour of the campus. I gained a broad understanding of institutional goals with respect to student motivation by interviewing school

directors and teachers. The most essential element of the study was the student interviews, supplemented by an orientation meeting with participating students. I posed both general questions and specific probes relating to academic motivation. After the campus-based collection of data was complete, I added a level of understanding by collecting written reflections of students concerning their academic motivation for a week. This written data allowed me to employ hermeneutic methods to corroborate, clarify, and amplify oral data.

Data Sources

Moustakes (1994) used the term “co-researchers” (p. 108) to describe participants in a phenomenological study. My co-researchers consisted of a total of nine academically gifted students attending school in Germany (four students) the United States (five students). This aligns with Polkinghorne’s recommendation of five to 25 participants in a phenomenological study (1989). I requested participation from the top five 11th grade students in the American school, according to class ranking as determined by grade point average. The German participants were in the class-E [*Orientierungsstufe*], which although technically representing the 10th grade, was actually closest to the American students in age and academic program. Although not linking academic giftedness to IQ, as was the procedure established by Gottfried and Gottfried (1996), the proposed identification of the top academic performers created a relatively similar group of participants with respect to academic success. Because of similar levels

of academic achievement, I hoped to isolate systemic and cultural factors that influenced the students' motivational orientation toward academic tasks. I selected 16 and 17-year old students because they were in the middle of their secondary academic program, where extrinsic motivators have become intensified, and yet they have not reached the stage of *senioritis* that may indicate a-motivation or a shifting of academic priorities. I chose elite private schools as research sites because they are likely to produce a high percentage of college-bound students, representing some of the highest achieving students in both countries.

Data Collection

I employed multiple data collections strategies to gain a nuanced and deep understanding of the phenomenon of gifted student motivation. To comprehend school context, I took part in campus tours and interviewed school directors, math teachers, and history teachers. According to Creswell (2007), understanding setting and context is essential to reporting on a case study within a bounded system. I observed students in their natural classroom setting and provided them multiple opportunities (group orientation, individual interviews, and Survey Monkey entries) to describe their lived experience with respect to academic motivation.

Student Participant Orientation. I built rapport by conducting an audio-taped orientation with the student participants from each school prior to the

classroom observations and open-ended interviews. This allowed for some level of familiarity with student participants prior to the individual interviews and facilitated clarity with respect to subsequent elements of the study. Creswell (2007) stated that such an orientation can be effective “when individuals interviewed one-on-one may be hesitant to provide information” (p. 133). The student participant orientation consisted of an informal conversation with the group where I learned general details about their life stories and their goals.

Campus Tour and Interviews with School Staff. Upon arriving at the two research sites, I took part campus tours with teachers. During the tours, I did not take notes; nor did I ask scripted questions. Rather, I attempted to gain a contextual understanding of the school settings. Subsequently I conducted one-hour recorded interviews with the directors of both schools. I asked the directors open-ended questions relating to curricular programs, academic goals, and motivational techniques. I conducted the interviews at the German school in German. I conducted similar interviews with one math and one history teacher from each campus after the student interviews were complete. I chose math and history classes because they are common to both German and American schools, representing the natural sciences and the humanities respectively. After recording the interviews, I created transcripts (and translations) for later analysis.

Student Interviews. At the end of four subsequent school days, I scheduled one-hour interviews with the student participants. I audiotaped, transcribed, and

analyzed the interviews to produce a description representing the essence of the phenomenon. The individual interviews focused on the students' academic goals, their study routines, and how they experienced motivation for academic tasks. I also asked how the significant adults in their lives influenced their motivational orientation toward school. I posed specific questions relating to their experience of math and history classes respectively.

To gain thick and rich understanding of the phenomenon (Geertz, 1973), I posed follow-up questions relating to the three elements of self-determination theory (Deci & Ryan 1985), including autonomy, choice, and relatedness. In addition, I put forth probes relating to the eight attributes of flow experiences, (Csikszentmihalyi, 1997), including single-minded focus upon a task, clear goals, specific rules, appropriate response to the rules, immediate feedback, alignment of skills and challenge, a lack of inner questioning, and the feeling that time passes quickly.

Classroom Observations. I observed each student in both math and history courses for 45 minutes. Where schedules conflicted, I arranged observations of other disciplines, ensuring at least two visits for each participating student. I did not electronically record classroom observations. Rather, I took written notes upon a protocol with special focus upon a physical description of the room, classroom routines, teacher/student and teacher/peer relationships, and student engagement in the lesson. Although my focus was on the students participating in

the study, I also attempted to gain contextual understanding of the respective classroom environments.

Survey Monkey Questions. Following the suggestion of Van Manen (1990), I asked participants to create a digital journal for five school days in which they reflect upon their motivation to take part in academic activities. On the Monday following the interviews and observations, student participants received daily links to Survey Monkey, where they responded to five or six open-ended questions relating to their experience of academic motivation on that day. By reflecting privately on academic motivation throughout the week, participants revealed trends and themes relating directly to the phenomenon. Combined with the student orientation, classroom observations, and recorded interviews, the reflective journals added a layer of depth to the phenomenological study.

Data Analysis

The current research was essentially an explanatory case study in which I tested the usefulness of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) in understanding academic motivation. I employed the hermeneutic phenomenological method to analyze data from interviews, classroom observations, and student journals. I sought common themes relating to academic motivation for gifted secondary students. I considered similarities and differences with respect to motivation between German and American students attending private schools. To construct the

essence of the phenomenon of motivation for gifted secondary students, I supported my narrative with the voices of the participants. The hermeneutic process creates the possibility that the researcher may interpret the phenomena differently from the participants (Crotty, 1998). With this in mind, I did not perform member checking.

I approached data collection, analysis, and reporting as a spiraling process (Creswell, 2007; Huberman & Miles, 2002) and was open to adjustments in the study, based upon the thematic content of the transcripts and notes from classroom observations. Realizing that any narrative account was necessarily an interpretation, I did not follow the procedure of bracketing (Moustakas, 1994) or *Epoche* as proposed by Husserl (1931, original work published 1913). Rather, I followed Van Manen (1990) to the extent that the phenomenology was overtly my interpretation of lived experience. This aligned with Gadamer's (1975) contention that "foregrounding and appropriation of one's own fore-meanings and prejudices" is central to the researcher's quest for understanding "the other" (p. 271-272). The lens through which I interpreted the data and form the questions was derived from my experience as a teacher, coach, graduate student, musician, and father. The specific research questions did not arise out of thin air. Rather, I formed them purposefully to reveal something about the phenomenon of gifted student motivation. I also created the research questions to explore the usefulness of self-determination theory (Deci & Ryan, 1985) and flow theory

(Csikszentmihalyi, 1997) for understanding student motivation. Heidegger (1996) stated that “every questioning is a seeking (original work published 1927). Every seeking takes its direction beforehand from what is sought” (p. 3). With this in mind, I rejected the possibility of a pure, unbiased interpretation of a phenomenon. Rather, I posed questions and analyzed data through existing theory with reflexive awareness of my role as researcher in the interpretive process.

Significance of the Study

The current study added to the literature on student motivation in research, theory, and practice. It filled methodological gaps in the literature that will inform future studies on gifted academic motivation.

Research

Since there are few cross-cultural studies on student motivation, the study informs our understanding of the connection between intrinsic motivation and the basic human needs of autonomy, competence, and relatedness across national boundaries. I suggested systemic factors, such as programs of tracking, school organization, and assessment procedures to explain findings where the two groups of students differed. These specific areas of comparison between German and American schools represent fertile ground for future research. The study explored the extent to which extrinsic motivators, such as high-stakes testing, praise, and monetary rewards are ubiquitous across national boundaries. Although there are

many quantitative studies describing the undermining effect of rewards and incentives on long-term intrinsic motivation (Deci, Koestner, & Ryan, 1999), few studies have explored this phenomenon through the words of academically gifted students.

Theory

Through the study, I tested the explanatory power of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) for understanding the academic motivation of gifted students. The combination of the two theoretical frames, along with the phenomenological approach, produced results beyond the snapshot of student motivation demonstrated by most quantitative studies. Through the students' comments, the study revealed how motivation varies in relation to specific academic tasks.

Practice

With respect to educational practice, the study shed light upon the process in which students develop and sustain academic motivation, and upon the factors that enhance and undermine intrinsic motivation. By examining the inner processes of high-achieving students, the study revealed classroom and parenting practices that influence long-term interest in academic tasks. By studying the motivational orientation of individuals who represent the zenith of the educational system, the study addressed the issue of what it means to be successful in school. The study considered the long-term cost of high academic achievement from the

perspective of the students themselves. By calling attention to educational and parenting practices relating to student motivation in both Germany and the United States, the study cast a critical view on educational practice in both countries. Perhaps most significant, the study problematized academic success, exposing the potential costs of extrinsically-motivated achievement.

Chapter I Summary

This chapter presented context and justification for a cross-cultural phenomenological study on gifted student motivation. It provided an historical examination of motivational theories, with particular emphasis upon the transition from mechanistic to cognitive psychology. It described the development of new areas of motivation beyond traditional drive theories. These areas included the desire to explore and learn about one's environment. The chapter detailed the Statement of the Problem by supporting the need for both cross-cultural and phenomenological data on gifted student motivation. It explained the benefit of studying the motivational orientation of high-achieving students, with emphasis upon the impact of social and educational factors upon their long-term interest in learning. It presented research questions that guided the study, and justified the appropriateness of the qualitative methodology for the specific research problem and the hermeneutic phenomenological approach to collecting and interpreting data. The chapter summarized the frames of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) as lenses

through which to view gifted student motivation. It explained and justified elements of the proposed method, including purposeful sampling of participants and sites. It also detailed the procedures for data collection and analysis. The chapter concluded with a statement of the study's potential implications for research, theory, and practice.

Reporting

What follows in the remaining chapters includes a Review of Literature, Presentation of Data, Analysis, and a Conclusion, including a discussion of the implications of the study for research, theory, and practice. Chapter II consists of a Review of Literature to provide context for the cross-cultural phenomenological study. It contains three major sections relating to elements of the study. In the first section, I clarify the cross-cultural aspects of the study by evaluating similarities and differences, both past and present, between the German and American educational systems. In the second section, I examine research relating primarily to academic motivation through the theoretical perspective of self-determination theory (Deci & Ryan, 1985). The third section consists of research relating to flow theory (Csikszentmihalyi, 1975, 1990, 1997), expressed as an intensified experience of intrinsic motivation.

In Chapter III, I detail all aspects of my methodology as it evolved through the research process. Allowing for emergent design, based upon collection of data, I adapted the study as needed. In this chapter, I report on the process of data

collection as it took place. To support this, I kept my own journal where I recorded timelines, calendars, and took notes relating to how the design emerged throughout the research process.

In Chapter IV, I offer the Presentation of Data in the form of a phenomenology, where I constructed the essence of gifted student motivation, based upon the words of the participants and supported by observation and context. Within this narrative, I allow the participants to speak for themselves, yet constantly aware of my role as collaborator in the hermeneutic process. I support the phenomenological approach by detailing the philosophical assumptions and various interpretive approaches including Husserl, Nietzsche, Heidegger, Gadamer, and Van Manen.

I present my Analysis of the data in Chapter V, describing how the theoretical frames of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) informed the study. I examine the data through the three elements of self-determination theory and the eight elements of flow theory. In a cross-cultural study, it is essential to compare data based upon cultural commonalities and differences. Based upon specific findings, I devote considerable attention to how cultural factors, both in Germany and the United states, affect gifted student motivation.

In Chapter IV, I summarize the study, provided conclusions, and put forth implications for research, theory, and practice. I also present suggestions for

future research. The last section of the chapter represents a discussion of the study and how it changed my understandings of the phenomenon under review.

CHAPTER TWO

REVIEW OF LITERATURE

In this review of literature I situate the cross-cultural elements of the study with respect to education in Germany and the United States, I evaluate studies relating to the educational implications of self-determination theory (Deci & Ryan, 1985), and I consider how research on flow theory (Csikszentmihalyi, 1975, 1990, 1997) informs the experience of heightened intrinsic motivation. Within the three sections, I attempt to clarify issues that arise in the Presentation of Data, Analysis, and Conclusion chapters.

Cross-Cultural Aspects of the Study

The German and American educational systems have demonstrated reciprocal influence from the time of the Enlightenment through the present day at the elementary, secondary, and university levels (Goldschmidt, 1992).

Elementary Education

Eichhoff (1988) suggested that kindergarten plays a more conspicuous role in American education than in its country of birth. The German educator Froebel originally conceived kindergarten as a place where children could engage in free exploration and cooperative tasks (Eichhoff, 1988). Although originally named the Institution for Play and Occupation [*Beschäftigungsanstalt*], Froebel later coined the term kindergarten [children's garden] (Eichhoff, 1988). After several kindergartens appeared in Germany in the late 1830s and 1840s, the first

non-German adaptations appeared in London in 1851 and in Watertown, Wisconsin in 1856 (Eichhoff, 1988). Whereas the German kindergarten is typically run by private institutions or churches, American kindergartens have become a recognized part of the public school system (Eichhoff, 1988).

At the elementary level, both German and American schools share a common inclusive model, which lacks tracking of students for the first four years. Elementary schools in Germany avoid ability groupings and focus upon the concepts of “see and enjoy” [*Anschauen*] and “home world” [*Heimat*] (McAdams, 1993, p. 99). In contrast to the intense competition in German intermediate and secondary schools, the elementary schools seek to create a positive experience for children and foster curiosity and a sense of belonging (McAdams, 1993). This resembles the self-contained elementary classroom in the United States with its focus on socialization. After the fourth grade, the two countries’ respective systems diverge through structures of within-school (United States) and between-school (Germany) tracking (Schnabel, Alfeld, Eccles, & Baumert, 2002).

Secondary Education

In recent years, German school officials have looked at American models to circumvent their rigid tracking system at the secondary level. German schools have introduced a two-year *Orientierungsstufe* [orientation program] that allows students and parents to inform themselves concerning the choice of three possible secondary tracks (McAdams, 1993). As a prototype for the *Gesamtschule*

[comprehensive high school], which has grown in popularity since the 1990s (McAdams, 1993), Germans have turned to the American high school, where students of diverse levels of academic ability learn under one roof.

University Education

With their focus on scholarship primarily in the natural sciences, the German model exerted particular influence on the emergent university in the United States (Cohen & Kisker, 2010). Benjamin Franklin's visit to the University of Göttingen in 1766 had profound influence on the Public College of the city of Philadelphia, which was later to become the University of Pennsylvania (Goldschmidt, 1992).

In the early 1800s, a group of American graduate students, primarily from Harvard, Yale, Johns Hopkins, and Cornell, attended German universities and returned to establish a focus upon independent research, each within their chosen field (Cohen & Kisker, 2010; Teichler & Wasser, 1992). From exposure to the German system and their requirement that all professors hold a PhD, American universities gradually promoted the professionalization of the professorship, complete with self-chosen research agendas and concomitant academic freedom (Cohen & Kisker, 2010).

German Educational Traditions

Through two World Wars and 40 years of division into two separate nations, much of the German educational system has remained. Central to the

current system in Germany is a transition model that formalizes tracking after the fourth grade (Griebel & Berwanger, 2006). Like American youth, most Germans attend kindergarten. In 2000, 29.8% of 3-year-olds, 76.9% of 4-year-olds, 94.8% of 5-year olds, and 85.9% of 6-year-olds attended kindergarten in Germany (Büchel & Spiess, 2002). However, this attendance is voluntary and not part of the state system.

All German students attend *Grundschule* [primary school] and share a common curriculum. After the fourth grade, based upon test scores, grades, and the advice of teachers and administrators, families must select one of three secondary education tracks. According to the German national report *Bildung in Deutschland* [Education in Germany], 20.4% of German students attend the *Hauptschule*, which is the least academic alternative, leading to early graduation and most likely a trade school after the 10th grade (Bildungsministerium für Bildung und Forschung, 2010). Next in popularity is the *Realschule*, which is attended by 27.9% of Germans students (Bildungsministerium für Bildung und Forschung, 2010). This is a compromise between the trade-focused *Hauptschule* and the college prep *Gymnasium*, which is attended by 36.1% of German students (Bildungsministerium für Bildung und Forschung, 2010). According to the Statistisches Bundesamt (1993), only 30% of German 14-year-olds attended *Gymnasium* in the 1992-1993 school year. The significant increase in *Gymnasium* attendance illustrates the cultural capital associated with this

graduation track (McAdams, 1993). The Statistisches Bundesamt (1993) reported that the remaining German students attended either a *Gesamtschule* (9.2%), which resembles the American comprehensive high school, or an institution offering multiple graduation options (6.5%).

Similar to many private schools in the United States, the German *Gymnasium* is divided into upper and lower schools. Students in the upper school (grades 11-13) have already selected their major and minor subjects and have commenced studying for the *Abitur*, a comprehensive exam they must take after the 13th grade. In most German states, there is a trend to offer the *Abitur* after the 12th grade, which would align their secondary program to the American timeline. Students attending the *Gymnasium* must complete 22 courses during their time in the upper school, based upon detailed requirements. Initially, students may select a track focusing on modern languages, classical languages, or mathematics and natural science (Ashwill, 1999). Once the graduation plan has been established, German students designate two major and two minor subjects to be assessed on the *Abitur* (Ashwill, 1999). Classes meet one to four times per week, often at different times of the day, and there are no multi-grade level courses.

According to Glaesser (2008), the transition model in German schools places considerable stress upon parents and students. The decision of a secondary education track has significant influence upon social mobility and future earnings (Glaesser, 2008). Baumert, Trautwein, and Arteilt (2003) reported that 10% of

German students change academic tracks in the fifth grade. However, 90% of those transfers are to a less academically demanding school (Baumert et al., 2003). The curriculum of the *Gymnasium* is constructed to prepare students to successfully complete the *Abitur*, which is a 14-hour written and oral exam in four subjects (Ashwill, 1999). Exam questions range from recall of information to application, analysis, and interpretation of knowledge (Ashwill, 1999).

Although successful graduation from the *Gymnasium* guarantees college admission across Germany, there is a highly competitive point system for admittance into specific academic majors. For example, during a particular school year, a grade point average of 1.6 may be necessary to attend medical school. Germans have traditionally been on a 1-6 point scale, with a 1 being the highest grade. However, some upper schools have recently adopted a 15-point scale. Students receive an added weight to account for variance in *Abitur* results from the 16 Federal States in Germany. Just as American students depend upon SAT scores and GPA to receive college acceptance, German *Gymnasium* students must focus upon numerical results to further their academic and professional goals (Ashwill, 1999; Popham, 2001).

Both the German and American school systems have incentivized learning through grades, high-stakes testing, and competitive college entrance criteria. In both systems, it is common practice for teachers to implement deadlines, surveillance, and controlling language to ensure procedural compliance and,

ultimately, student achievement. Schools in both countries feel external pressure to increase student achievement on measurable outcomes (Ashwill, 1999; Popham, 2001).

Program for International Student Assessment (PISA)

In 2000, the Organization for Economic Cooperation and Development (OECD) administered the inaugural international exam named Program for International Student Assessment (PISA). The 2000 study involved a sample of 180,000 15-year-olds from 219 schools around the world (Baumert, Trautwein, & Arteilt, 2003). They selected 15-year-olds because they were near the end of their compulsory schools and provided data concerning the cumulative accomplishments of the diverse educational systems (Baumert, Trautwein, & Arteilt, 2003). According to Lingens (2005), the PISA exam is not content-intensive; rather, it attempts to assess the students' understanding of concepts and processes and to critically evaluate information in a variety of contexts.

The results for PISA in 2000 served as a wake-up call to leaders within the German educational system. Touted as a traditional powerhouse on international educational comparisons, the Germans suddenly found themselves in the lower half of scores with respect to 32 industrial countries (OECD, 2001). Germany scored below the OECD average in the areas of reading literacy, mathematical literacy, and scientific literacy (OECD, 2001). Out of the 32 participating nations, Germany scored 21st in reading literacy, 20th on mathematical literacy, and 20th on

scientific literacy (OECD, 2001). In comparison, the United States fared slightly better than Germany in all areas, scoring 15th in reading literacy, 19th on mathematical literacy, and 14th on scientific literacy (OECD, 2001). For Germans, scoring below countries like the Czech Republic, Hungary, and Iceland represented a blow to national pride, and educational leaders experienced what has been termed *PISA-Shock* (Lingens, 2005).

The study revealed significant differences in performance between the various German states (OECD, 2001). For example, Bavaria scored 10th relative to the other nations in reading literacy, while Bremen scored near the very bottom of all countries in the study (OECD, 2001). For a country with such a strong literary tradition, it was surprising that 42 percent of German students indicated that they did not read for pleasure (OECD, 2001). This represented the highest level of the 32 nations in the study (OECD, 2001). For more than any other country, German students demonstrated greater variance in reading skills based upon socio-economic level (OECD, 2001). Similarly, native Germans scored significantly higher than non-German natives in all three subject areas (OECD, 2001). This highlighted a growing problem of low academic performance for immigrant students who attend *Hauptschulen*, often within the larger German cities. The study also revealed that Germans have relatively high number of students who are required to repeat grades, compared to the OECD average (OECD, 2001). The German Ministry of Education responded with a call for

national curricular standards, focus on measurable academic outcomes, all-day schooling, and additional measures to equalize educational opportunities for students in the 16 federal states (Lingens, 2005).

The reaction of Germans to their students' relatively poor showing with the initial round of PISA is reminiscent of the American's reaction to the launch of Sputnik by the Soviet Union in 1957. The United States Congress ratified the National Defense Education Act (NDEA) to promote improvement in areas of education relating to national security, specifically math, science, and modern languages (Hartman, 2008). In 1983, the National Commission on Excellence in Education put forth *A Nation at Risk*, which warned:

If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war. As it stands, we have allowed this to happen to ourselves. We have even squandered the gains in student achievement made in the wake of the Sputnik challenge. Moreover, we have dismantled essential support systems which helped make those gains possible. We have, in effect, been committing an act of unthinking, unilateral educational disarmament. (National Commission on Excellence in Education, p. 1)

Recovering from the initial shock with respect to relatively low scores in 2000, Germans rebounded in subsequent PISA assessments, ranking 16th out of 30

countries in 2003, 8th out of 30 countries in science in 2006, and 17th in reading out of 34 countries in 2009 (OECD, 2010). Germany achieved its gains while decreasing its spending on education relative to gross domestic product from 4.9% in 2000 to 4.7% in 2008 (OECD, 2010). American students' relative ranking went in the downward direction during the next rounds of testing, scoring 24th in math in 2003, 21st in science in 2006, and 20th in reading in 2009 (OECD, 2010). Despite its relative declines in PISA performance, the United States currently spends 5.7% of its gross domestic product on education (OECD, 2010).

High-Stakes Testing

Relatively low scores on PISA in 2000 in Germany and in the United States propelled both countries to formalize increased accountability standards, particularly in the areas of reading, math, and science. According to Jürges, Schneider, and Büchel (2005), the results of TIMSS (Third International Mathematics and Science Study) and PISA inspired spirited discussion concerning how to efficiently improve Germany's relative standing. In Germany, the *Kultusministerkonferenz* recommended focusing on early education, increasing the length of the school day, and enhancing assessment outcomes through professional development (Lingens, 2005). As a way to formalize educational requirements, German states have increasingly required the administration of central exit examinations (Jürges et al., 2005). According to Jürges et al., the central exit examinations are most frequently required at the

upper secondary school level in the content areas of math, German, science, and foreign languages. Although other subjects are typically assessed at a local level, there is a growing trend in Germany for nationalized standards and common assessment for all academic disciplines (Van Ackeren, Block, Klein, & Kühn, 2012).

Jürges et al. (2005) used existing data from the 1994-1995 TIMSS assessment to compare the student performances in German states with central exit exams to those that do not require the assessment. The sample consisted of 5,763 seventh and eighth grade students from 137 German schools (*Hauptschulen* and *Realschulen*). Because of the extensive data, they chose to limit their study to results in mathematics and not include *Gymnasium* students.

Their initial finding, though certainly not surprising, was that students attending the *Realschule* performed significantly better than those in the *Hauptschule* (Jürges et al., 2005). They also found that students in federal states that administered central exit examinations scored significantly higher in math than those students in states without the examinations (Jürges et al., 2005). Based upon statistical analysis, Jürges et al. suggested that the presence of the central exit examination increased student achievement by one third per academic year.

According to Lingens (2005), the success of these measures implemented by Germany's Standing Conference of the Education and Cultural Ministers of the States [*Ständige Konferenz der Kultusminister der Länder in der*

Bundesrepublik Deutschland] may empower the federal government to take more of an active role in educational policy. Though Germany and the United States share the constitutional principle that education is the responsibility of the states, both federal governments possess a controlling mechanism through the awarding of funds (Lingens, 2005).

The recent educational reforms in Germany parallel two well-publicized federal initiatives in the United States. These include the reauthorization of the Elementary and Secondary Education Act (*No Child Left Behind*) of 2002 and the *America Competes Act* of 2007. *No Child Left Behind* ties Title I funding to standards-based assessment where states must ensure that all student population groups demonstrate Adequate Yearly Progress (AYP) towards 100% mastery in mathematics and reading by the year 2014 (Madaus, Russell, & Higgens, 2009). Failure to meet AYP results in a series of sanctions, ranging from development plans and required tutorials to replacement of staff and possible restructuring of a school or district (Madaua et al., 2009). Each state must set its own high and challenging standards for student performance and its own standard for highly qualified teachers (Madaua et al., 2009).

The *America Competes Act* released significant funding for investment in innovative research and development with the goal of improving the competitiveness of the United States (U.S Congressional Record, 2007). First among its three provisions for education was the call to fund the recruitment of

teachers in the areas of science, technology, engineering, and math (STEM), along with foreign languages (U.S Congressional Record, 2007). The second provision required significant increase in student participation in Advanced Placement (AP), International Baccalaureate (IB), and STEM programs (U.S Congressional Record, 2007). The third provision established a panel to disseminate best teaching practices for STEM programs (U.S Congressional Record, 2007). Since federal and state funding is tied to the success of these programs, the mechanism for evaluating effectiveness is standardized student assessment (Madau et al., 2009).

Proponents of high-stakes testing in the United States feel that the tests create an even playing field for students to demonstrate understanding of a core curriculum (Madaus et al., 2009). Part of the justification for *No Child Left Behind* was to use testing and other measures to ensure that traditionally low-performing student populations receive the resources and educational attention that will allow them to close the achievement gap. According to Madaus et al., (2009) American students entering kindergarten will take at least 16 state exams prior to graduating. These tests affect 30 million students with a \$1 billion annual administrative cost and an additional \$1.3 billion for test preparation materials and tutoring. Twenty-nine American states require students to pass state assessments to graduate from high school, while nine states use tests to retain students in a grade (Madaus et al., 2009).

Self-Determination Theory

While the early educational opportunities in both Germany and in the United States represent a child-centered, supportive approach, both systems gravitate toward more competitive, assessment-driven tactics during middle and high school. The development of the students' motivational orientations can best be explained through the lens of self-determination theory (Deci & Ryan, 1985), which clarifies how social factors, both within and outside of the educational system, enhance or undermine intrinsic motivation.

Theoretical Foundations

DeCharms (1968) proposed a theory of motivation that established the foundation for self-determination theory (Deci & Ryan, 1985). He established a construct where an individual's feeling of personal causation for acting plays a central role in the quality of motivation. The essential distinction is the extent to which the individual perceives himself or herself to initiate an action or to be acted upon.

This theory was inspired by early studies on primate behavior by Harlow, Harlow, and Meyer (1950), who created a short-term disruption in performance by imposing an extrinsic reward as monkeys solved a puzzle. Inspired by this early research, DeCharms (1968) put forth *personal causation* as "the initiation by an individual of behavior intended to produce a change in his environment" (p. 6).

DeCharms (1968) introduced the terms “Origin and Pawn” (p. 315) to characterize what Heider (1958) termed “personal causality” (p. 100). DeCharms defines an individual who perceives himself/herself to be an Origin as intrinsically motivated, while someone who considers himself/herself to be a Pawn is extrinsically motivated. The term Origin would describe individuals who seem to “attack problems in the environment with zest, apparently seeking uncertainty and change, and reveling in risky situations” (p. 327). Conversely, a Pawn would be someone who depends upon external direction or some type of incentive to instigate action.

Early Studies

Based upon the work of DeCharms (1968), Deci (1971) embarked upon a series of experiments that would provide empirical evidence to support the construct of personal causation. Deci completed three experiments testing his newly formulated cognitive evaluation theory, which relates to the effects of tangible rewards on intrinsic motivation. With these seminal studies, Deci established an experimental design that was to be duplicated in a variety of settings and with a variety of tasks and rewards to test what was later called the *over-justification hypothesis* (Lepper, Greene, & Nisbett, 1973). This hypothesis concerns the undermining effect of a reward on an interesting activity. Although people may initially attribute personal causation to an action, “they will, postbehaviorally, assess the situation, noting that there was a strong external

cause. They will then attribute causality for their behavior to the external cause and discount any plausible internal cause, namely intrinsic motivation” (Deci & Ryan, 1985, p. 201). With respect to the rewarded activity, “There was more than enough justification (i.e., there was overjustification) so they will discount the internal justification” (Deci & Ryan, 1985, p. 201). Since these early experiments established the design for numerous future studies on intrinsic motivation, I describe the method in detail.

In the first experiment Deci (1971) asked 24 college students in a laboratory setting to reproduce paper configuration on Soma puzzles during three one-hour sessions. The Soma puzzle in Deci’s experiment challenged participants in their ability to master spatial relations. The puzzle consisted of seven pieces of different sizes that could be manipulated to form countless configurations. Deci asked the subjects to reproduce the configurations from a series of drawings. Participants had 13 minutes to solve four puzzles.

During the first session, participants in the experimental and control groups attempted to solve the puzzles with no contingent rewards. Prior to the second session the experimental group was told that they would receive \$1 for every successfully solved puzzle, while the control group had no such incentive. Prior to the third session, the experimental group was informed that they, like the control group, would receive no contingent reward. During the eight-minute breaks between the sessions, Deci left the room and observed the participants

through a one-way mirror. Puzzle pieces remained on the participants' tables along with magazines. They were told that they could do what they wanted during that period of time. Deci measured intrinsic motivation in seconds, based upon how much of the free-choice time they devoted to the puzzles. As predicted, the experimental group devoted significantly less time to the puzzles in the first free-choice period (248.2 seconds) than during the second period (313.9 seconds) when the monetary reward was in place (Deci, 1971). However, when the reward was removed in the third session, the experimental group devoted significantly less time to the puzzles (198.2 seconds) than did the control group (241.8 seconds; Deci, 1971).

After each session, participants responded to a self-report measure rating their level of enjoyment for the activity. In all three sessions, both groups rated the activity as highly interesting and enjoyable with no significant differences between groups. Deci reported only a 0.10 level of significance with respect to the decrease in intrinsic motivation for the experimental group who received the monetary incentive. This was below the 0.05 level of significance that is typically required. For this reason, along with the relatively small sample size, Deci recommended more extensive studies. Deci (1975) later described two potential weaknesses of the original study. He suggested that the presence of the researcher in the room could have introduced experimenter bias. He also noted that the

decrease in rewards could have caused the experimental group to develop an emotional reaction of resentment toward the experimenter.

Deci's (1971) second early study on intrinsic motivation was a field experiment that also involved a monetary reward. He divided a group of 12 college newspaper students into equal experimental and control groups who were engaged in writing headlines for existing news stories. The experimental group was promised 50 cents per headline, while the control group received no compensation. Just like the study involving the Soma puzzles, Deci created three tests: the first with no compensation for either group, the second with compensation for the experimental group only, and the third where the compensation was removed for both groups. Findings were similar to the Soma study as the experimental group demonstrated a decrease in intrinsic motivation after the reward condition was removed, based upon minutes spent on each headline (Deci, 1971).

Deci's (1971) third experiment was identical to the Soma puzzle study, with the exception of the type of award administered. This time Deci had researchers provide reinforcement to the members of the experimental group during the second session in the form of positive verbal feedback. Based upon the amount of time participants devoted to solving the puzzles during the free-choice period, Deci concluded that verbal praise increased intrinsic motivation. With respect to Deci's newspaper headline experiment, he later clarified that "the

informational aspect of the verbal reward was more salient than the controlling aspect, so the change in feelings of competence and self-determination process was invoked, and the subjects were left with more intrinsic motivation for this activity” (Deci, 1975, p. 143).

Central to Deci’s conclusions was the participant’s perception of either internal or external causality for the activities. He clarified the significance of the individual’s *perception* of causality:

People make choices about their behavior on the basis of their perceptions, so if they perceive that they engage in a certain activity for an extrinsic reward, then they’ll do so only when they think such activity will lead to the extrinsic reward (Deci, 1975, p. 139).

While Deci (1975) investigated the effect of contingent rewards on college students, Lepper, Greene, and Nisbett (1973) studied the effect on children. For this study, they formulated the over-justification hypothesis, which posited that motivation toward an intrinsically interesting activity would decrease when a contingent reward is attached. They tested students in three conditions, including expected-award, unexpected award, and no-award. A group of children ($N= 69$) engaged in an interesting drawing activity that was introduced during two sessions within a two-week period.

Because the experiment was performed at the preschool site, researchers were able to integrate it naturally into the normal routine. Equally significant was

the fact that the children's regular alternative activities and materials were all at hand as options during the free-choice period. Children in the expected-reward and unexpected reward groups received a certificate with a ribbon and gold seal. After the activity was complete, researchers surreptitiously viewed the children through one-way glass to record free-choice engagement of the drawing activity. As predicted, a lower percentage of children from the award-expected group (8.59%) continued the drawing activity during the free-choice period than from the no-award group (16.73%) and the unexpected-award group (18.09%; Lepper, et al., 1973).

For children in the unexpected-award group, receiving the award did not increase their subsequent interest (Lepper, et al., 1973). An additional finding related to the relative quality of the children's artwork. Though children from the three groups completed a similar number of drawings, Lepper et al. found significant difference between the average quality of the drawings of the three groups, as rated blindly by three judges on a five-point scale. The average quality rating for the expected-award group was 2.18, compared with 2.85 from the unexpected-award group and 2.69 for the no-award group, suggesting a potential undermining effect of award expectation on performance (Lepper et al., 1973).

A key issue raised in the study by Lepper et al. (1973) concerns the level of initial interest that children experienced for the activity. Central to the study's design was that the activity must have moderate to high initial interest for

meaningful measurement of subsequent decreases. Were the initial activity dull or uninteresting, then the imposition of any form of contingent reinforcement may actually increase intrinsic motivation. A natural connection to this issue would be the level of interest that school activities hold for students.

Lepper et al. (1973) suggested that many school activities provide initial interest to students, and the subsequent imposition of extrinsic rewards represents common education practice, explaining “Such situations, we would suggest, occur frequently in traditional classrooms where systems of extrinsic rewards—whether grades, gold stars, or the awarding of special privileges—are applied as a matter of course to an entire class of children” (p. 136). They cited Dewey (1900), Whitehead (1929), Holt (1964), and Silberman (1970) in their assertion that the American educational system has failed to help children maintain the intrinsic motivation that they seem to have possessed upon entering school. Lepper et al. asserted that “the schooling process seems almost to undermine children’s spontaneous interest in the process of learning itself” (p. 136).

Lepper et al. (1973) stated that there may be a place for extrinsic incentives in school setting. However, they advocated this practice in only two circumstances: The first condition is when the activity is of a low level of interest and the incentive is necessary to effectuate student involvement (Lepper et al., 1973). The second situation is when the activity becomes enjoyable only after continued exposure that leads to mastery (Lepper et al., 1973).

Following Deci's (1971) previous design, Deci and Cascio (1972) looked at the opposite side of contingent rewards by exploring how the threat of punishment influences the perceived locus of causality. They set up the Soma puzzle experiment, but exposed participants in the experimental group to an annoying buzzer when they failed to solve a puzzle in the allotted time. Members of the experimental group devoted less time to working on the puzzles during the eight-minute free-choice period between sessions than did members of the control group, supporting the hypothesis that punishment would decrease intrinsic motivation (Deci & Cascio, 1972). Although they showed a marginally significant difference between experimental and control conditions, Deci and Cascio recommended additional replication of their research.

Meta-Analyses on Rewards and Intrinsic Motivation

With the research design of Deci (1971) and Lepper et al. (1973) firmly established, researchers embarked on a series of experiments to test the overjustification hypothesis in a variety of contexts for a period of 28 years. I report the findings of five meta-analyses to express the combined explanatory power of the studies. Because of the controversy it generated in the community of cognitive psychologists, I report the findings of Deci, Koestner, and Ryan (1999) in detail with special attention on the researchers' rationale for including specific studies. I report effect sizes for a variety of types of contingent rewards, ranging from verbal reinforcement to tangible rewards.

Deci et al. (1999) conducted a meta-analysis of 128 laboratory studies testing the effects of contingent rewards on intrinsic motivation. They searched the PsycINFO, ERIC, and Current Contents databases to identify 94 published articles and 19 dissertations from the years 1971 to 1997. All studies had an experimental design, consisting of an experimental group who received rewards for performing a task and a control group who performed the task with no reward. A distinguishing feature of their meta-analysis was that they selected only studies where the participants performed a task that was interesting or interest-neutral. Thus, they eliminated studies where participants performed dull activities.

At the end of the experimental condition, intrinsic motivation was measured in two possible ways: The first was a free-choice measure where the researchers timed how long participants resumed the activity after the experimental period was complete. The second consisted the participants' self-reports relating to their interest with respect to the activity. To report effect sizes, they used Cohn's d , which represents the differences between the means of the experimental and control groups divided by the combined within-group standard deviations, which were adjusted for sample sizes (Hedges & Olkin, 1985). They looked at a series of categories of rewards, including verbal, tangible, unexpected, task-contingent, task non-contingent, engagement-contingent, completion-contingent, and performance-contingent.

With respect to studies using free-choice measures and those using self-report measures, the results were mixed. The overall effect size for the 101 studies looking at free-choice behavior was $d = -0.24$ (CI = -0.29, -0.19), indicating that rewards significantly undermined intrinsic motivation, $p < .0001$ (Deci et al., 1999). In contrast, the overall effect size for the 84 studies using self-report measures was $d = 0.04$ (CI = -0.02, 0.09), indicating that rewards did not significantly undermine intrinsic motivation, $p < .0001$ (Deci et al., 1999). Because of this discrepancy, they reported the results for free-choice behavior and self-report measures separately for each category of rewards.

The meta-analysis by Deci, Koestner, and Ryan (1999) aligned with previous meta-analysis by Rummel and Feinberg (1988), who found that out of 88 effect sizes, 83 demonstrated the undermining impact of extrinsic rewards on intrinsic motivation. Similarly, Wiersma's (1992) meta-analysis of 16 studies also reported that free-choice measures were undermined by extrinsic rewards. Tang and Hall (1995) completed a meta-analysis from 50 studies and 256 effect sizes. Their results pointed to a reduction in intrinsic motivation for task-contingent rewards ($d = -.051$) and performance-contingent rewards ($d = -.035$). However, they found that positive verbal feedback enhanced intrinsic motivation. Unlike Deci et al, Tang and Hall also analyzed the effect of rewards on intrinsic motivation for uninteresting tasks, finding a positive effect ($d = 0.34$).

Perhaps the most contrary findings came from the meta-analysis by Cameron and Pierce (1994). They examined the same categories of rewards as those considered by Deci et al. (1999) and came to different conclusions. Specifically, Cameron and Pierce reported that rewards have no overall significant effect on intrinsic motivation for free-choice measures. In addition, they reported that rewards created significant enhancement of intrinsic motivation on self-report measures ($d = 0.14$; Cameron & Pierce, 1994). They found that verbal rewards significantly enhanced intrinsic motivation on both free-choice behavior ($d = 0.38$) and self-report measures ($d = 0.39$; Cameron & Pierce, 1994). They also found no significant effect on both free-choice behavior and self-report measures for contingent and non-contingent rewards (Cameron & Pierce, 1994). On the other measures, Cameron and Pierce reported mixed results with respect to the two types of measures. Based upon these findings, Cameron and Pierce advocated for the use of contingent rewards in the educational setting.

Cameron and Pierce (1994) set up their meta-analysis to include both activities of high interest and of low interest to participants. From these studies, they reached their contradictory conclusions. Deci and Ryan (2001) later argued that Cameron and Pierce failed to differentiate between controlling and informational praise. However, both groups agreed that verbal praise has a positive impact upon intrinsic motivation (Cameron & Pierce, 1994; Deci et al., 1999). Cameron and Pierce argued that their practice of including studies of

both high and low interest activities has broader validity than the approach of Deci et al., who only considered studies with interesting activities. Cameron and Pierce suggested that young people are required to perform many activities, particularly in the school setting, that are not inherently interesting. Deci and Ryan countered that Cameron and Pierce's meta-analysis contained procedural errors, such as:

Using inappropriate control groups. . . . Misclassifying studies. . . . Using improper measures of intrinsic motivation, such as behavior assessed while reward contingencies were still operative. . . . Including irrelevant experimental conditions and excluding relevant ones. . . . Collapsing across experimental conditions without doing moderator analyses. (2001, p. 44)

In response, Cameron claimed that the meta-analysis of Deci et al. contained procedural irregularities:

Deci et al. omitted conditions from several studies that were relevant to their analyses. . . . Deci et al. missed some experiments that met their inclusion criteria and that were published during the period covered by their meta-analysis. As well, several studies using high-interest tasks that revealed positive effects of reward on self-reported task interest measures were either excluded or inadvertently omitted. (2001, p. 33)

The heated tone of these conflicting meta-analyses demonstrates the profound implications of the findings for educational practice.

Additional Extrinsic Motivators

In addition to rewards, researchers have considered how other extrinsic forces affect subsequent intrinsic motivation. Among those are imposed deadlines, competition, and high-stakes testing. In their initial formulation of self-determination theory, Deci and Ryan (1985) posited perceived autonomy as a central element of intrinsic motivation. When individuals feel they are the causal agent of their actions, they are more likely to experience intrinsic motivation (DeCharms, 1968). However, when they perceive an external locus of control, then intrinsic motivation is undermined (DeCharms, 1968).

Amabile, DeJong, and Lepper (1976) examined the effect of externally *imposed deadlines* upon subsequent interest and quality of task performance. They differentiated between internally and externally imposed deadlines along with control conditions of no time limit. Although an imposed deadline may immediately improve productivity, Amabile et al. considered both the quality of the deadline (internally or externally imposed) and the long-term effect once the deadline has been removed. They hypothesized that the imposition of a deadline would have a similar effect as the imposition of a contingent reward in that the individual would complete the task for an instrumental purpose (Amabile et al., 1976).

Amabile et al. (1976) asked 40 male college students to play a word game that was judged to have initial interest to participants. They were divided into two experimental conditions and two control conditions. The experimental groups were given instructions indicating an explicit deadline or an implicit deadline. Member of the control group were asked either to work quickly or they were given no deadline at all. Like Deci (1971) and Lepper et al., (1973), Amabile et al. tested subsequent interest through free-choice behavior and self-report measures. They also tested subsequent performance by examining the number, length, and accuracy of the words that participants found as part of the game. For both free-choice and self-report measures, participants in the no-deadline condition showed the highest amount of interest (Amabile et al., 1976). As predicted, participants in the explicit deadline condition showed the least amount of subsequent interest, though there was no significant difference in performance between members of the four conditions (Amabile et al., 1976). The study supports the over-justification hypotheses (Lepper et al., 1973), suggesting that extrinsic controls undermine intrinsic motivation (Amabile et al., 1976).

Burgess, Enzle, and Schmaltz (2004) considered the qualitative difference between deadlines; specifically, they examined the extent to which self-imposed deadlines may have a less undermining effect on intrinsic motivation than externally imposed deadlines. Employing a similar design to Amabile et al. (1976), they asked 48 college students to complete an interesting task, using Lego

blocks. Participants were randomly assigned to one of two experimental groups (externally-imposed deadline, internally-imposed deadline) or one of two control groups (work quickly, no deadline). Results showed that participants who were told to work quickly without an internally or externally imposed deadline demonstrated the highest subsequent interest, based upon surreptitious recording of free choice time after the experiment (Burgess et al., 2004). In contrast, participants who received an externally imposed deadline showed significantly lower subsequent interest (Burgess et al., 2004).

In a second experiment, Burgess et al. (2004) eliminated the control group that was asked to work quickly. They compared experimental conditions of externally and self-imposed deadlines with the control condition of no deadline. Results supported the hypothesis that participants with no deadline would have a higher level of subsequent interest than those who have deadlines (Burgess et al., 2004). Of the two deadline conditions, interest for those with self-imposed deadlines was greater than for those with externally imposed deadlines (Burgess et al., 2004).

The intention of an imposed deadline is certainly to ensure completion of a task in a timely fashion. Although some students develop strategies to transform externally imposed deadlines into self-imposed deadlines, often on a more stringent timeline (Burgess et al., 2004), others avoid the task in question through procrastination. Senecal, Koestner, and Vallerand (1995) identified academic

procrastination as a motivational problem of particular interest within the research on self-regulation. They questioned the findings of Burka and Yuen (1982) and Solomon and Rothblum (1984), which suggested that procrastination represents an internal protection measure against the fear of failure.

To verify these conclusions, Senecal et al. (1995) tested 498 college students on a variety of measures relating to academic procrastination and self-regulation. To measure self-regulation, participants completed the French version of Academic Motivation Scale, titled *l'Echelle de Motivation en Education* (Vallerand, Blais, Briere, & Pelletier, 1989). They also completed surveys measuring academic procrastination, self-esteem, depression, and anxiety. They found that the measures relating to the fear of failure (self-esteem, depression, and anxiety) accounted for 14% of the variance in academic procrastination (Senecal et al., 1995). However, variables relating to self-regulation accounted for 25% of the variance (Senecal et al., 1995).

They were surprised to report that only the most highly self-regulated form of motivation had a significantly negative correlation with academic procrastination (Senecal et al., 1995). Identified regulation, which occurs when the individual connects the activity with personal goals and values, did not produce the expected negative correlation with academic procrastination (Senecal et al., 1995). They concluded that only the most robust form of self-regulation

(intrinsic motivation) can overcome the motivational problem of procrastination (Senecal et al., 1995).

With a similar design to those examining contingent rewards and imposed deadlines, researchers have considered the effect of *competition* on intrinsic motivation. Deci, Betley, Kahle, Abrams, & Porac (1981) found that competition functions as a specific type of reward. They characterized the goal of competition as the desire to defeat another team or individual, which suggests that the reward is beyond the actual activity (Deci et al., 1981). Previously, Deci (1975) suggested that there is an informational aspect and a controlling aspect to competition. Deci et al (1981) hypothesized that the controlling aspect would be more pronounced than the informational, creating an overall undermining effect on intrinsic motivation. Employing similar methods as Deci (1971) pioneered when studying rewards, Deci et al. (1981) asked 40 male and 40 female college students to complete puzzles with a same-sex partner, who was a confederate in the study. The experimental group was told to attempt to complete the puzzles more quickly than their partner, while the control group was asked simply to complete puzzles as quickly as possible. After the initial experiment, the confederate left the room and the subject was surreptitiously observed through a one-way mirror. Researchers measured free-choice behavior during a 10-minute period and later administered a questionnaire relating to the participants' initial interest and ability for the task. Using interest and ability as covariates, Deci et al.

found that members in the experimental group asked to compete devoted significantly less time to solving puzzles during the free-choice period than members of the control group. They also found a more pronounced detrimental effect of competition on intrinsic motivation for females than for their male counterparts (Deci et al., 1981).

According to Harter (1982), competition decreases intrinsic motivation by creating the perception of an external locus of causality. Vallerand, Gauvin, and Halliwell (1986) tested this explanation with children as subjects. They asked fifth and sixth graders to engage in a balancing activity upon a platform. Researchers instructed half of the participants to engage in competition (experimental group) and half to attempt the activity for intrinsic mastery (control group). Again, following Deci's design (1971), researchers observed the children during a five-minute free-choice period to measure the time they devoted to the activity. In addition, researchers measured participants' perceived competence through a questionnaire administered after the pre-choice period. Co-varying for perceived competence, they found that children in the competition condition devoted significantly less free-choice time to the balancing activity than children in the control group (Vallerand et al., 1986). Vallerand et al. suggested that although competition may increase extrinsic motivation, once the incentive of winning is removed, it has an overall detrimental effect on subsequent intrinsic motivation for motor tasks.

Just as competition has become a central element to instructional programs, *high-stakes testing* has become a common means through which competitive outcomes can be measured. According to Ryan and Weinstein (2009), high-stakes tests have become the preferred means for comparing “nations, states, school districts, schools, teachers, and students” (p. 224). They refer to this type of assessment as “the basis for educational reform around the globe” (Ryan & Weinstein, 2009, p. 224). They argue that reliance on high-stakes testing represents “a motivational approach” (Ryan & Weinstein, 2009, p. 225) to the extent that it provides rewards and sanctions based upon measurable outcomes. They suggest that a motivational approach based upon outcomes has significantly more effect than one that merely focuses on behavior (Ryan & Weinstein, 2009). As Kohn (2000) suggested, it is not standardized testing per se, but the stakes that are attached to them that have far-reaching consequences. Although it is students who experience the direct effect of high-stakes testing, Ryan and Weinstein (2009) suggest that teachers, administrators, and parents respond in a predictable manner to the controlling aspect of testing. They suggest that self-determination theory (Deci & Ryan, 1985) accurately predicts the behavior of these groups (Ryan & Weinstein, 2009).

Grolnick and Ryan (1987) examined the controlling aspect of testing in a study of 97 fifth graders. They considered the effect of controlling vs. non-controlling learning contexts along with directed vs. non-directed learning

conditions. They met with the children individually and asked them to read a grade-appropriate text. Grolnick and Ryan created the controlling learning condition by informing a segment of the children that they would be assessed and graded on the reading material. The non-controlling group was merely told that they would later be asked questions about the text without a formal assessment or grade. The remaining students were placed in the non-directed group, which was not told about any follow-up on the reading, setting up a learning condition with little pressure or expectation. Grolnick and Ryan measured interest through the Self-Regulation Questionnaire of Ryan, Connell, and Deci (1985). To measure conceptual learning, participants were asked to respond in writing to open-ended questions concerning the main idea of the text. Grolnick and Ryan found that the two groups of directed learners demonstrated stronger recall than those in the non-directed group. Yet the directed learners showed higher levels of interest and greater conceptual understanding than the non-directed children (Grolnick & Ryan, 1987). This aligns with previous research asserting that extrinsic incentives would enhance motivation and performance on straightforward tasks, yet would undermine performance on more complicated, creative tasks (Benware & Deci, 1984; McGraw, 1978). Grolnick and Ryan found that the children in the controlling condition demonstrated greater deterioration of rote learning than those in the non-controlling condition in a follow-up assessment one week later. The researchers suggested that the generalizability of the findings is limited by the

use of a single age group and the inclusion of an assessment of conceptual understanding that was designed specifically for this study (Grolnick & Ryan, 1987).

To examine the effect of high-stakes testing from the teachers' perspective, Scot, Callahan, and Urquhart (2007) gained access to a database of responses from a professional development program. They examined teachers' reactions to training in preparation for a high-stakes testing cycle. The 512 teachers in a large urban American school district responded to survey items relating to a continuing professional development program. According to Scot et al., teachers reported a disconnect between research-based best practices, such as cooperative learning models and differentiated instruction, and the district's focus upon standardized approaches for increasing test scores. Teachers reported a narrowing of the curriculum necessitated by focus upon curriculum guides, mandated timelines, and strict administrative monitoring of compliance (Scot et al., 2007). They reported feeling pressure to focus upon standardized curriculum at the expense of gifted students, who often felt bored due to lack of challenge (Scot et al., 2007). Teachers reported a ceiling effect where they devoted an inordinate amount of time toward helping low-achievers meet the state standard, limiting creative and self-directed learning activities for gifted students (Scot et al., 2007).

The Process of Internalizing Extrinsic Goals

The aforementioned practices of surveillance, imposed deadlines, competition, and high-stakes assessment can all be viewed as a form of contingent reward or punishment. These practices combine to create a cumulative effect on the student's motivational orientation. However, the process of education can be viewed as a means to both generate new interest and transform existing extrinsic goals into self-endorsed activity. Most of the research on the effect of contingent rewards on intrinsic motivation requires participants to perform a task with moderate or high initial interest. However, as Cameron and Pierce (1996) emphasized, many activities with school are not initially interesting to students. This is compounded by the fact that students are expert at demonstrating the outward appearance of interest, while concealing inner boredom and distraction (Dewey, 1913).

Working with Heider's (1958) notion of *perceived locus of causality*, and *personal causality* and DeCharms' (1968) formulation of *Origins and Pawns*, Deci and Ryan (1985) proposed a process where an individual's motivational orientation to perform a task can move from extrinsic toward a more personally endorsed motivation over time. Ryan and Connell (1989) proposed a four-category construct, including external, internal, identified, and intrinsic regulation. The continuum proposed by Deci, Vallerand, Pelletier, and Ryan (1991) added two categories including a-motivation and introjected regulation to

more fully describe why individuals engage in activities. This motivational construct described how the individual gradually identifies and internalizes extrinsic goals. On one end of the scale is *a-motivation*, which represents a lack of intention to act (Deci et al., 1991). A-motivation occurs when an individual lacks both intrinsic and extrinsic motivation to perform a specific task (Deci et al., 1991).

Deci et al. (1991) proposed four types of extrinsic motivation, beginning with *external regulation*, where the individual acts to receive an externally imposed reward, to comply with a rule, or to avoid a punishment. *Introjected regulation* is a type of extrinsic motivation where the individual acts to avoid guilt or shame or to enhance self-esteem (Deci et al., 1991). *Identified regulation* refers to the instance when an individual identifies with the importance of a behavior to achieve a longer-term goal (Deci et al., 1991). The final type of extrinsic motivation is *integrated regulation*, where the individual fully assimilates the behavior into the sense of self (Deci et al., 1991). Even though this type of regulation is volitional, there is still an extrinsic outcome that has instrumental value (Deci et al., 1991). As the process of internalization continues, the far end of the scale represents intrinsic motivation, where an individual acts for the inherent pleasure of the activity (Deci et al., 1991).

Deci and Ryan (1985) suggested the integration of extrinsically motivated activities is of primary importance in the socialization process. They described

this process as one of conflict between the active nature of children and growing social constraints (Deci & Ryan, 1985). Deci and Ryan asserted that “there are many behaviors that do not naturally interest them [children] but that the social world deems necessary for them to learn” (p. 129). For these behaviors, parents and teachers resort to extrinsic motivators, typically in the form of incentives and threats of punishment to ensure compliance.

They define *internalization* as a process where “an individual acquires an attitude, belief, or behavioral regulation and progressively transforms it into a personal value, goal, or organization. It is the developmental process by which a child integrates the demands and values of the socializing environment” (Deci & Ryan, 1985, p. 130). Based upon their organismic integration theory, Deci and Ryan suggested internalization is an organic process that becomes more pronounced as children become older.

Connell and Ryan (1985) developed a scale to measure internalization for eight to 12-year olds, who were required to self-report their reasons for certain actions. Vallerand et al. (1993) created a similar scale for college students called the Academic Motivation Scale. This scale evaluated internalization with respect to intrinsic motivation to know, intrinsic motivation to accomplish things, and intrinsic motivation to experience stimulation. The model also included three categories of extrinsic motivation (external, introjected, and identified regulation), and a-motivation (Vallerand et al., 1993). These scales are more nuanced than

those of Harter (1981) and Gottfried (1985), which do not measure the full spectrum of extrinsic motivation along with a-motivation.

Deci and Rayn (1985) proposed cultural factors that influence the process of internalization, including competence, the appropriateness of challenge, the quality of feedback, and the type of behavioral controls asserted by adults. Deci and Ryan (1985) suggested that the social environment, particularly with respect to parenting and teaching, can facilitate or undermine the internalization process. Circumstances that promote autonomy, recognize the feelings of children, and acknowledge competence tend to enhance internalization of intrinsic goals (Deci & Ryan, 1985). Conversely, social contexts that demonstrate control, lack of support for the children's feelings, and that confirm failure tend to undermine internalization (Deci & Ryan, 1985). Literature within the areas of parenting and teaching lend support to the hypothesized construct of regulation and internalization.

Controlling vs. Autonomy-Supportive Parenting

While researchers have primarily examined the dichotomy between intrinsic and extrinsic motivation within the educational context, the familial environment provides equally fertile ground for the study of motivational constructs. In fact, psychologists have noted the importance of the first years of life in the formation of personality (Freud, 1961a; DeCharms, 1968; McClelland,

1951). Deci and Ryan (1985) based their construct of autonomy-control upon Baumrind's (1968) construct of parenting.

Baumrind (1968) proposed three types of parental control, including *permissive*, *authoritarian*, and *authoritative*. Since considerable later research refers to the distinction drawn here, I describe the three approaches to parenting in detail. Baumrind described the permissive approach to parenting as one that allows the most autonomy for the child, noting "The permissive parent attempts to behave in a non-punitive, acceptant, and affirmative manner toward the child's impulses, desires, and actions" (Baumrind, 1968, p. 889).

Baumrind employed the term authoritarian to describe the most controlling style of parenting, explaining "The authoritarian parent attempts to shape, control, and evaluate the behavior and attitudes of the child in accordance with a set standard of conduct, usually an absolute standard, theologically motivated and formulated by a higher authority" (Baumrind, 1968, p. 890).

Offering a compromise between the two extreme parental approaches, Baumrind offered authoritative control as a means to simultaneously promote the child's freedom and responsibility, declaring "the authoritative parent attempts to direct the child's activities in a rational, issue-oriented manner" (Baumrind, 1968, p. 891). She identified authoritative parenting as the style most in keeping with the approach of Montessori (1912) in the classroom. She also referenced Dewey

(1913) in asserting that teachers can foster students' interest in academic subject matter without sacrificing discipline in the classroom.

Using Baumrind's (1968) model, Dornbusch, Ritter, Leiderman, Roberts, and Fraleigh (1987) tested the effect of parenting style on grade point average for high school students ($N = 7,836$). They found a negative correlation between authoritarian parenting style and grade point average for both male and female students (Dornbusch et al., 1987). They reported a similar, though less pronounced negative correlation between permissive parenting and grade point average for both males and females (Dornbusch et al., 1987). With respect to the construct of authoritative parenting and grade point average, they found a positive correlation for both males and females (Dornbusch et al., 1987).

Steinberg, Lamborn, Darling, Mounts, and Dornbusch (1994) supported this finding, confirming that authoritative parenting corresponded to higher levels of academic achievement than authoritarian and permissive (separated into indulgent and neglectful parenting in this study). Grolnick and Ryan (1991) simplified Baumrind's (1968) construct by characterizing parenting as either autonomy-supportive or structured. They found that autonomy-supportive parenting predicted relatively high scores in academic achievement for elementary students (Grolnick & Ryan, 1991).

Using a similar approach, Soenens and Vansteenkiste (2005) studied the combined effect of autonomy-supportive parenting and teaching upon academic

and social outcomes of 328 high school students. Path analysis showed that parental and teacher autonomy-support led to the students' increased feelings of self-determination in school (Soenens & Vansteenkiste, 2005). The students' feelings of self-determination correlated positively with grade point average along with perception of scholastic and social competence (Soenens & Vansteenkiste, 2005).

Dornbusch et al. (1987) cautioned that obtaining data from the perception of the child may cause limitations, since the quality of the parent/child relationship could skew the data. In addition, they mentioned the need for longitudinal data to explaining the causal pattern of behavior of both parents and children (Dornbusch et al., 1987). Dornbusch et al. admitted that a parent's less controlling style could be in response to the child's good grades; or the child's good grades could be a result of autonomy-supportive parenting.

In a review of literature on parenting and autonomous self-regulation, Grolnick (2009) supported the bi-directional hypothesis, whereby parents both influence and respond to their children's academic motivation. The causal direction could also be elucidated by qualitative data where both parents and children could articulate their thought processes.

Autonomy-Supportive vs. Controlling Teaching

In their formulation of self-determination theory, Deci and Ryan (1985) described how aspects of education that, like parenting style, can influence a

child's level of autonomy and lead to emotional adjustment and psychological well-being. In keeping with Dewey's (1913) call to leverage the child's innate interest, Deci and Ryan suggested that educators "create learning opportunities where students' natural curiosity and interest energize their learning" (p. 245). Since school represents the primary socializing institution outside of the family, Deci and Ryan proposed the need for a motivational theory that takes into account the emotional, psychological, and academic development of the child. This represents a whole-child approach that moves beyond an exclusive focus on academic outcomes. Recognizing that all academic tasks are not immediately interesting to students, Deci and Ryan (1985) recommended an educational approach that facilitates the internalization process of extrinsic goals. This includes the elimination of punishment and focus on the informational content of feedback, praise, and rewards (Deci & Ryan, 1985). They also promoted offering students optimal challenge, an array of choices, and acknowledging their feelings during conflict (Deci & Ryan, 1985).

According to Deci and Ryan (1985), the teacher represents the primary influence on the level of autonomy-support or control in the classroom. However, teachers often experience pressure from school administrators, parents, and students to focus upon measurable outcomes. Deci and Ryan clarified the dilemma, noting "When teachers are pressured by administrators, when their own autonomy in the classroom is not supported, it is hypothesized that they will

become more controlling with the children” (Deci & Ryan, 1985, p. 266). Deci, Spiegel, Ryan, Koestner, and Kauffman (1982) previously addressed this issue through a study in which they assigned 20 pairs of college students the role of either teacher or student in a puzzle-solving task. The teachers in the experimental group were told to ensure their student attain a prescribed performance standard. Teachers in the control condition were told to just help their student solve the puzzle. The findings showed that teachers in the performance standard condition dominated the discourse, speaking twice as much as those teachers in the control condition (Deci et al, 1982). They delivered significantly more directives and offered their students fewer choices and less time to work alone (Deci et al, 1982).

In a summary of research, Reeve (2006) put forth an array of autonomy-supportive teaching approaches. He recommended leveraging students’ “preferences, interests, sense of enjoyment, sense of challenge, competencies, and choice-making” (Reeve, 2006, p. 229). He advocated that the teacher use of informational, rather than controlling language, and that the teacher articulate the value of academic activities for students (Reeve, 2006). Reeve suggested that autonomy-supportive teachers do not counter students’ statements of negativity towards academic tasks; rather, he advocated that teachers acknowledge the students’ negative expressions (Reeve, 2006). He listed several teacher behaviors that foster autonomy-support, including careful listening, allowing students to

work independently, allowing students to talk in class, arranging materials and seating to encourage student conversations, encouraging hard work, praising signs of improvement, offering informational feedback, responding to student questions, and recognizing the students' perspective (Reeve, 2006). As a means to promote student engagement, Reeve suggested several keys to establishing an autonomy-supportive teacher/student relationship. These included being sensitive to the students' needs, making the students feel special, affirming the students' self-direction, and providing gentle discipline (Reeve, 2006). According to Ryan and Niemiec (2009), this autonomy-supportive approach to teaching "moves us away from viewing teachers as controllers, monitors, and trainers to being facilitators, guides, and supporters of development" (p. 270).

Researchers have shown that professional development can help teachers adopt more autonomy-supportive styles (DeCharms, 1976; Reeve, 1998; Reeve, Jang, Carrell, Jeon, & Barch, 2004). DeCharms (1976) provided teachers with a workshop throughout a school year to clarify the classroom implications of his theory relating to *origins* and *pawns*. At the end of the school year, the students of the participating teachers showed greater preference for challenge, higher levels of attendance, and higher academic achievement (DeCharms, 1976). Reeve (1998) distributed a booklet on autonomy-supportive teaching methods to pre-service teachers. Teachers who had read the booklet for 45 minutes self-reported a change toward a more autonomy-supportive teaching style (Reeve, 1998).

Reeve et al. (2004) asked a group of 20 high school teachers to take part in a 30-minute introductory session and subsequently complete a web-based self-study on techniques to become more autonomy-supportive with their students. They set up a delayed control group, who did not take part in the training until after the study was complete. After three classroom observations by trained raters, they determined that the teachers who received the training demonstrated significantly more autonomy-supportive classroom behavior than those in the control group (Reeve, et al, 2004).

From Self-Determination to Flow

The empirical research on self-determination in the familial and educational contexts is based upon a theory of motivation that evolved throughout the 20th Century. Deci and Ryan (1985) defined motivation as “the energization and direction of behavior” (p. 3). By *energy*, they mean the needs that are either innate or acquired through environmental factors (Deci & Ryan, 1985). By *direction*, they mean the process by which these basic and acquired needs are satisfied (Deci & Ryan, 1985). On the surface, this sounds like a drive theory in the tradition of Hull (1943). However, the actions that are of most interest to Deci and Ryan are those outside the realm of survival drives. For example, they cite DeCharms’ (1968) characterization of the human tendency to explore and alter the environment for what appears to be its inherent enjoyment. Deci (1975) identified these activities as being intrinsically motivated. Such activities,

according to Deci are “ones for which there is no apparent reward except the activity itself. People seem to engage in the activities for their own sake and not because they lead to an extrinsic reward” (Deci, 1975, p. 23). Much of the work of Deci and Ryan (1985) focuses on environmental and cultural factors that undermine intrinsic motivation and the process of internalization whereby extrinsic activities become part of the individual’s sense of self. Although they described intrinsically motivated individuals as experiencing enjoyment and the feeling of self-determination, they did not provide a detailed phenomenological account of how individuals experience this state.

The Elements of Flow Theory

Csikszentmihalyi provided this phenomenological account in his construct of flow theory (1975, 1990, 1997). Like Deci and Ryan (1985), Csikszentmihalyi (1975) doubted the explanatory power of deficit models of motivation to account for intrinsically motivated activities. He was also incredulous about psychoanalytical theories of Freud (1961b) that characterized the individual’s vain attempt to compete for scarce resources and satisfy libidinal needs in opposition to the constraints of society. For Csikszentmihalyi (1975), this pessimistic approach to human motivation did not explain the phenomenon of play, which is ubiquitous across many cultures. Csikszentmihalyi described instances where individuals become enveloped in play even when more fundamental drives, such as hunger and fatigue, are present. Influenced by

Maslow's (1943) concept of ecstatic experiences, Heider's (1958) construct of personal causality, and DeCharms' (1968) model of personal causation, Csikszentmihaly (1975) sought to account what he termed *autotelic* experiences within the more general field of cognitive psychology. *Auto* comes from the Greek word meaning *self*, and *telo* means *goal* or *purpose* (Csikszentmihaly, 1975). For Csikszentmihaly, autotelic experiences require significant energy on the part of the participant, who receives no extrinsic reward for taking part in the activity.

Although aware of the early work on the effect of contingent rewards on intrinsic motivation (Deci 1971; Lepper & Greene, 1973), Csikszentmihaly was skeptical concerning how the findings of the experimental studies would generalize to everyday experience. A central element to all of Csikszentmihaly's work is his observation of participants engaged in various activities in their natural setting. He focused his studies on individuals engaged in peak experiences, both in play and in more conventional activities, to trace similarities in their motivation. Rather than setting up experimental conditions, Csikszentmihaly interviewed individuals who engaged in these activities and merely asked them *why* they performed them. He augmented his method to include open-ended questions and survey items. Later, he developed the Experience Sampling Method (Larson & Csikszentmihalyi, 1983) to formalize his data collection. This involved passing out pagers and having participants respond

to a written prompt at random intervals throughout the day. Participants described the activity and how they felt at this moment. With this systematic approach, Csikszentmihaly was able to gain a clear picture of how individuals spend their time and analyze numerous accounts of flow experiences in a variety of cultural contexts (Hektner, Schmidt, & Csikszentmihaly, 2007). According to Csikszentmihaly (1990), over 100,000 samples of experience have been collected worldwide, most extensively from the University of Chicago in the United States and the University of Milan in Italy. Later, Jackson and Marsh (1996) developed a flow state scale to measure flow experiences in athletes. Their 36-item instrument measured nine dimensions of the flow experience, with four items for each subscale. Based upon administration of the scale to 394 athletes, Jackson and Marsh reported a reasonable level of internal consistency ($M = .83$).

Csikszentmihaly (1975) initially studied individuals who engaged in high-skill level activities, including athletes, chess players, artists, rock climbing, and surgeons. The individuals reported common experiences including complete engagement to the point of forgetting time and feeling perfect presence in the moment (Csikszentmihaly, Abuhamdeh, & Nakamura, 2005). Many participants used the metaphor of a flowing current to describe their deep and complete level of engagement, where they forgot about their surroundings (Csikszentmihaly et al., 2005). The flow activities shared three characteristics, including the presence

of clear goals, optimal alignment between their level of skill and the challenge of the activity, and immediate feedback (Csikszentmihaly et al., 2005).

The game of chess certainly contains those three characteristics. The goals of the game include protecting your King, capturing your opponent's players with minimal loss to your own, and ultimately trapping the opposing King. Csikszentmihaly (1975) challenged Fine's (1956) psychological attribution of the allure of chess to an oedipal desire to kill the father, manifested in the character of the King. Csikszentmihaly (1975) interviewed 30 male and 23 female chess players who were members of college chess clubs. He found that the participants played chess to compete, to improve their skills, to gain friendship, to attain prestige, and to experience enjoyment (Csikszentmihaly, 1975). Statements of respondents differed significantly based upon their ranking and their level of involvement in the sport (Csikszentmihaly, 1975). For example, players with the highest ratings valued the competitive aspects more highly than those who played for recreational reasons (Csikszentmihaly, 1975).

Csikszentmihaly (1975) labeled activities requiring a high level of skill *deep flow experiences*. In contrast, he characterized everyday occurrences, such as holding conversations, listening to music, reading books, and watching TV, as *micro-flow experiences*. His point in this distinction is that all activities, including work and academic tasks, have the potential for producing flow states (Csikszentmihaly, 1975). In practical terms, Csikszentmihaly sought to provide

individuals the ability to transform mundane, boring activities into enjoyable experiences. According to Csikszentmihaly et al. (2005) the key element to inducing flow experiences is the alignment of skill and challenge. However, the natural tendency to learn and master challenges creates a loss of equilibrium where the same activity becomes boring, often producing stress. On the other end of the spectrum, activities may be too challenging, eliciting feelings of frustration and anxiety. For competitive games such as chess or tennis, the choice of opponent represents the mechanism for maintaining the optimal balance between skills and challenge.

Flow Theory and Games

Csikszentmihaly (1990) used the terminology of Callois (1958) to identify four types of games. *Agon* refers to games such as basketball whose main function is to encourage competition. *Alea* includes games of chance, including dice and cards. *Ilinx* describes games that seek to alter perception, such as riding a merry-go-round. *Mimicry* consists of games that allow players to alter reality, such as in theater. According to Csikszentmihaly, all forms of game have a common goal of pushing individuals to perform at ever-increasing levels, resulting in a more complex self. For this transformation to occur, the game must achieve a balance between boredom and anxiety (Csikszentmihaly, 1990). Since skills tend to improve with increased exposure to the activity, those games that

have the most staying power are the ones that allow constant renewal in the form of ever-increasing challenges (Csikszentmihaly, 1990).

Flow Theory and Digital Games/Virtual Worlds

While flow experiences have been identified as attributes of many sports and games (Csikszentmihaly, 1975), creators of digital games overtly leverage the attributes of flow theory into their game designs (Rigby & Przybylski, 2009). Individuals of all ages, but particularly teenagers, devote countless hours to the video gaming, often to the neglect of other more productive pursuits. According to Greitemeyer and Osswald (2010), annual sales of video games in the United States exceeded \$9.9 billion in 2004. Woodward and Gridina (2000) reported that 87% of American children play video games regularly. Gentile and Walsch (2002) reported that children between the ages of two to seven spend three to five hours per week playing video games. Eighth and ninth graders devote twice as much time to video games, logging approximately nine hours per week (Gentile, Lynch, Linder, & Walsh, 2004).

According to Rigby and Przybylski (2009), there is growing interest among young people in multi-player virtual games. Virtual worlds present players with an array of choices, which gives them significant control of their destiny within the game (Rigby & Przybylski, 2009). In previous multi-player games, most tasks could only be performed by a single individual. Once the task was completed, the option was taken off the table for everyone, which likely led

to frustration on the part of players. However, in the more recent versions, each challenge can be performed by all players. Everyone is, in effect, the center of their own virtual universe and the star of their show. Rigby and Przybylski argued that the virtual games provide an optimal level of challenge and immediate feedback, evoking flow experiences which leverage the fantasy and curiosity of the players. Przybylski, Weinstein, Murayama, Lynch, and Ryan (2011) conducted two studies, one with 144 undergraduate students and the other with 979 video game players to test the effect of gaming environments on intrinsic motivation. In both studies they found that players were drawn toward games that allowed them to experience characteristics of their ideal self (Przybylski et al., 2011).

Central to the motivational pull of virtual games is the timely feedback loop between the game and the player (Rigby & Przybylski, 2009). Individuals can exert their will in almost infinite directions, while experiencing the satisfaction of being an integral part of a group. Players may also overcome obstacles in a non-threatening environment, where failure is never a final state. In fact, for most virtual games, previous failures have no impact upon future performance, leaving a clean slate and only short-term consequences for failure (Rigby & Przybylski, 2009). Because virtual gaming facilitates autonomy, competence, relatedness, optimal challenge, and immediate feedback, it aligns

with both self-determination (Deci & Ryan, 1985) and flow (Csikszentmihaly, 1975) theories.

In educational terms, virtual and video games contain strong elements of formative assessment. Because of the immediate feedback, the player can rethink strategies to achieve success. Since the level of challenge is typically increased incrementally, players receive both optimal challenge and successive mastery experiences. The psychological draw of such a scenario can be explained by self-efficacy theory (Bandura, 1999). The success builds upon itself to the point where players crave the affirmation that the game offers. The narrative structure and heroic context of virtual worlds allows students a multitude of choices (Rigby & Przybylski, 2009). One can equate the individualized elements of virtual games with differentiated instruction, where individual players may freely enter the game at any level of competence and develop their skills through experience. Kiili (2004) used flow theory (Csikszentmihaly, 1975) as the basis of an experiential gaming model for online learning, stressing the need for immediate feedback, clear goals, and optimal challenge. He cautioned that individuals will respond differently to the online learning environments, and the designers should pay particular attention to the game's appearance, story line, and level of player/learner engagement (Kiili, 2004).

Flow Theory and Athletics

Csikszentmihaly (1975) studied the flow states of rock climbers because of the activity's inherent danger and lack of external rewards. He labeled rock climbing and similar activities *deep play* because of their high stakes and apparent irrationality to the uninitiated (Csikszentmihaly, 1975). Rock climbing represents a clarifying activity with respect to motivation, since most individuals would instinctively avoid such a hazardous activity that offers little apparent gain. Csikszentmihaly interviewed 30 highly competent rock climbers to gain insight into their experience of flow states. The climbers' responses supported many elements of the flow model, including optimal challenge, single-mindedness, clarity of demands, clear and immediate feedback, heightened awareness, and the feeling that time suspended (Csikszentmihaly, 1975). Despite the obvious dangers, the climbers reported that their acquired level of expertise and high level of control made the risk manageable (Csikszentmihaly, 1975). The presence of danger heightened the climbers' concentration, which enhanced their enjoyment in the auto-telic activity (Csikszentmihaly, 1975). According to Csikszentmihaly, participants reported that they found rock climbing less dangerous than driving a car or walking in the park because the former activity has fewer variables and allows them far more control.

Because of the built-in competition and connection to skill development, persistence, and concentration, athletic activities lend themselves to study within

the flow model. Jackson (1995) studied flow states among elite athletes and found frequent examples from individuals engaged in competition and practice. The elite athletes reported antecedents to flow experiences including positive attitude, high levels of motivation, optimal arousal, and competitive planning (Jackson, 1995). Jackson and Roberts (1992) examined flow experiences in Division I athletes and found a positive correlation between flow experiences and perceived ability in the sport. Stein, Kimiecik, Daniels, and Jackson (1995) reported similar findings with non-elite athletes. However, differences in the frequency of flow experiences were related to the participants' emphasis upon competition and their relative level of skill development (Jackson et al, 1995). Jackson, Ford, Kimiecik, and Marsh (1998) tested flow states in older athletes and found a positive correlation between frequency of flow states and perceived ability. They reported a negative correlation between flow states and anxiety, suggesting that anxiety produces negative effects on the main facilitators of flow experience, including concentration, control, optimal challenge, clear feedback, and clear goals (Jackson et al., 1998).

Autotelic Personality and Flow Experiences

Csikszentmihaly, Rathunde, and Whalton (1993) examined common attributes of talented adolescents in the areas of math, science, music, athletics, and fine arts. Through this research they identified a construct called the "autotelic personality" (Csikszentmihaly et al., 1993, p. 80), which indicates an

enhanced likelihood of experiencing flow states. According to Csikszentmihaly et al., individuals possessing an autotelic personality can balance finding appropriate challenges with the endurance of developing the necessary skills for success. Where others avoid challenges or give up when tasks become too difficult, autotelic individuals develop new interests, maintain focus, and push forward until they reach a level of mastery (Csikszentmihaly et al., 1993). Because individuals with autotelic personalities seek increasingly complex and demanding challenges, they are likely to be receptive to the cycle of feedback and skill development that is central to attaining the flow state (Csikszentmihaly et al., 1993).

Family Influences on Flow Experiences

Building upon their concept of autotelic personalities, Csikszentmihaly et al. (1993) proposed the construct of “complex families” (p. 155) to indicate fertile ground for talented young people to develop. They suggested that families function as *complex* when there is a balance between *integration* and *differentiation* (Csikszentmihaly et al., 1993). Integration occurs when there is a sense of unity and support within the family (Csikszentmihaly et al., 1993). Differentiation represents a contrasting characteristic where family members are encouraged to seek out challenge and develop their individual identities (Csikszentmihaly et al., 1993). The delicate balance between integration and differentiation creates an environment that fosters autotelic personalities

(Csikszentmihaly et al., 1993). Csikszentmihaly et al. distributed their Complex Family Questionnaire along with pagers to written prompts to 100 adolescents to test predictors of their complex family construct. They compared complex family structures to those they termed *integrated* (unified though not promoting challenge seeking), *differentiated* (not unified though promoting challenge seeking), and *simple* (neither unified nor promoting challenge-seeking). Results showed that adolescents in complex families reported the most frequent occurrence of flow experiences, a balance of family routines and leisure, the greatest amount of time devoted to homework, and the highest quality experience with their families (Csikszentmihaly et al., 1993).

Flow Experiences in the Classroom

The educational implications of flow theory (Csikszentmihaly, 1975, 1990, 1997), particularly with respect to the notion of optimal challenge, are profound. Shernoff, Csikszentmihaly, Schneider, and Schernoff (2003) conducted a longitudinal (cohort) study measuring how middle and high school students spend their time during the school day, and examined the connection between student engagement and optimal challenge, autonomy, and relevance. They also considered how classroom factors affect student engagement and foster flow experiences. Using the Experience Sampling Method (Larson & Csikszentmihalyi, 1983), they collected data from 526 students in three cohorts. Shernoff et al. found that students spent the most significant portion their school

time engaged in individual work (approximately 23% of the day), attending lectures (21%), taking exams (13%), taking notes (10%), engaged in discussion (9%), completing homework/study (7%), watching videos (7%), completing group work (6%), watching and giving presentations (4%), and talking individually with the teacher (1%). They found that students reported higher levels of engagement in the presence of high challenges where the instruction was relevant and the learning environment offered them autonomy (Shernoff et al., 2003). Students also reported the highest level of engagement during group and individual work and the lowest during lectures or while watching videos (Shernoff et al., 2003). Shernoff et al. suggested that teachers may increase engagement by providing optimal challenge, ensuring relevance, and encouraging student autonomy. This aligns with Csikszentmihaly's (1993, 1996) previous finding of a positive correlation between flow states and effective teaching and effective learning.

Csikszentmihaly, Abuhamdeh, and Nakamura (2005) described the mechanism by which flow states positively affect engagement and learning. They suggested that a continual process of self-evaluation takes place when an individual engages in an activity; the decision to either continue or break off this activity is based upon this evaluation (Csikszentmihaly et al., 2005). In the classroom setting, teachers devote a significant amount of thought to engaging students prior to an activity. However, for Csikszentmihaly et al., there is a causal

connection between the continuation of the activity and enjoyment. This would imply that flow experiences have the potential to help sustain interest in learning activities, thereby improving the quality of that learning. Similar to enjoyment, receiving immediate and appropriate feedback correlates positively with motivation to engage in an activity in the future (Deci, 1971; Ryan, 1982).

However, the most essential element to attaining flow states in the classroom is maintaining the balance between the students' skill level and the level of challenge (Csikszentmihaly et al., 2005). This is particularly elusive, since there are often as many as 30 students in a classroom, all with different skill levels engaged in the diverse academic tasks and disciplines. While students who perceive a balance between skills and challenge experience high levels of engagement and flow states, those who feel that they lack the required skills to successfully perform an activity experience boredom and anxiety (Csikszentmihaly & LeFevre, 1989). Dewey (1913) suggested it is the task of the teacher to create increasingly complex learning experiences that promote "*thoughtful effort*" (p. 83) on the part of the student. Teachers can accomplish this by making use of *emergent motivation* to gradually foster interest and flow experiences in students (Csikszentmihaly et al., 2005). Individuals experiencing emergent motivation attempt a previously uninteresting task, and through optimal challenge and growth of skills, they develop genuine interest and enjoyment (Csikszentmihaly et al., 2005). This aspect of the flow experience is particularly

relevant to education, since it provides teachers a strategy to build student interest through appropriate challenge and success.

Csikszentmihaly (1990) elucidated how flow experience can enhance growth and development of students:

Following a flow experience, the organization of the self is more *complex* than it had been before. It is by becoming increasingly complex that the self might be said to grow. . . . The self becomes more differentiated as a result of flow because overcoming a challenge inevitably leaves a person feeling more capable, more skilled (p. 41).

This aligns with self-efficacy theory (Bandura, 1999; Pajares, 2008), where repeated mastery experiences lead to the anticipation of future success.

Csikszentmihaly (1990) explained how flow experiences tend to perpetuate themselves:

When we act freely, for the sake of the action itself rather than for ulterior motives, then we learn to become more than what we were. When we choose a goal and invest ourselves in it to the limits of our concentration, whatever we do will be enjoyable. And once we have tasted this joy, we will redouble our efforts to taste it again. (p. 42)

With this in mind, flow experiences tend to foster growth through repeated exposure to optimal performance experiences.

Chapter II Summary

In the present chapter, I evaluated literature to inform the cross-cultural aspects of the study. I devoted particular attention to the unique features that distinguish the German educational system from that in the United States. I examined literature relating to and self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) with an emphasis upon their potential power to explain academic motivation. In the subsequent chapter, I detail the methodology of the study. Here, I clarify the philosophical underpinnings of the phenomenological approach and justify my choices in research design.

CHAPTER THREE

METHODOLOGY

The present study represents an exploration of the phenomenon of academic motivation from the perspective of highly successful students in Germany and the United States. Since motivation is an internal cognitive process, the primary source of data is the words of students themselves. However, because academic work is in part conducted in public, I attempted to gain contextual understanding through observation of the students in the classroom setting. Therefore, I augmented the students' stories with my own accounts based upon observation, occasionally referencing the comments of teachers for background, context, and corroboration.

Philosophical Overview

Because motivation is a purely human construct, uncovering its essence is inferential and primarily a linguistic process. By focusing on academic motivation, I am exploring a specific motivational field that possesses its own vocabulary, its own social context, and its own fundamental nature. Because motivation is at best a fleeting concept, its truth is essentially subjective and difficult to hold fast. According to the pre-Socratic philosopher Heraclitus (trans. 1912), "Nature loves to hide." Heidegger (1996) characterized the purpose of phenomenology as "to let what shows itself be seen from itself, just as it shows itself from itself" (1996, p. 30). This represents a process of un-concealment or

Aletheia, which, according to Husserl (2001), can be accomplished through a return “to the things themselves” (p. 4, original work published 1900). Since phenomenological research does not attempt to generalize beyond the specific lived experience under investigation, I can only hope to tentatively approach the essence of gifted academic motivation. For that reason, there is no need to distinguish the individual appearance from the more general essence. According to Sartre (1956), “The appearance does not hide the essence, it reveals it; it *is* the essence” (p. 5, original work published 1943).

This attempt to trace the essence of a phenomenon is fundamentally a task of writing, which for Van Manen (1990) “externalizes what is internal; it distances us from our immediate lived involvements with the things of our world.” Hence something is both lost and gained in the attempt to impose structure on a phenomenon through thematic organization. Every description, every quotation, every organizational choice not only influences the hermeneutic process; these choices become the interpretation itself. The ever-present hermeneutic circle, expressing the tenuous balance between the parts and the whole, imposes a constant interpretation of meaning. Every piece of text becomes loaded with fore-meanings to the extent that it is always already gathered by the writer, who has ears only for what he or she seeks. This aligns with Heidegger’s (1996), understanding of *Da-sein*, which represents the individual who is aware of his or her own existence and the temporality of that existence. For Heidegger,

“*Da-sein* hears because it understands” (p. 153). And conversely, as stated by Nietzsche (1979), “Ultimately, no one can extract from things, books included, more than he already knows. What one has no access to through experience one has no ear for” (p. 70, original work completed in 1888 and published posthumously).

By the very structure of my questioning, I funnel the participants’ responses into the philosophical context from which the study originated. I formed questions representing a broad circle surrounding the central concept of motivation. These questions sought to allow students the opportunity to reveal inner processes relating to achievement, effort, and sustained attention. Never during the questioning did I allude to the distinction between intrinsic and extrinsic motivation. However, whenever a student brought up related concepts, such as interest, enjoyment, determination, or the feeling of time, I would always follow up to gain additional insight, often requesting specific examples. The cumulative effect of my probes and follow up questions was to alert the participants that I found their thought process surrounding their academic endeavors to be important. This created a self-perpetuating exchange where students provided additional examples of how their techniques for achieving academic success are unique and of value. With this in mind it is clear that my interpretation began when I posed the initial question and continued until I wrote the last word of analysis.

Throughout the process, my own life-world collided with that of the participants, hopefully producing *understanding* or to use Dilthey's (1996) word, *Verstehen* (p. 102, original work published 1900). With that in mind, I recognize my part in the hermeneutic process and admit that the Presentation of Data and Analysis represent one of many possible perspectives on the phenomenon. By its very nature this interpretation simultaneously uncovers the participants' motivational orientation and reveals my own fore-meanings, resulting in an end product that is equal parts phenomenology and autobiography.

Methodological Overview

Part of a methodology is to justify why the researcher's approach is the most appropriate for the phenomenon under investigation. The Review of Literature presented a substantial number of studies relating to the distinction between intrinsic and extrinsic motivation in a variety of contexts. The overwhelming majority of these studies adopted the quantitative methodology, touting the weight of empirical evidence based upon detailed statistical analysis. The most common means to study motivation involve measures of free time behavior and self-report measures, both administered after an experimental condition. Admittedly these studies demonstrate significant negative correlation between praise, rewards, imposed deadlines, surveillance, evaluation, and intrinsic motivation. They also reveal important distinctions concerning the manner in which the extrinsic incentives are implemented. For example, the

informational content of praise may moderate the undermining effect of praise in general on subsequent intrinsic motivation. These distinctions are important and they create an empirical foundation upon which the phenomenon has gained attention.

However, researchers studying the phenomena of intrinsic and extrinsic motivation often point to the cognitive source, where thoughts have a causal connection to actions. Cognitive psychologists place their work in opposition to that of behaviorists, such as Skinner (1953), who held that only factors external to human consciousness determine actions. For Skinner, operant conditioning could be used to explain all human action; thus, there was no need to even consider the inner processes of personal causation characterized by Heider (1958) and DeCharms (1968).

Yet surprisingly, recent studies on human motivation, including the seminal works of Deci (1971) and Lepper and Greene (1973), established an overtly behaviorist approach to measuring the causes of human behavior. The experimental approach typical for studying intrinsic motivation involves providing subjects with an interesting activity, administering reward or non-reward conditions, and surreptitiously observing and timing the participants' return to that activity during a short break. I would argue that the participants' free choice time is determined as much by the quality of the alternative activities as by the presence or absence of experimental conditions. Even as participants

continue to perform the activity during their free-choice period, we learn nothing of why they are so engaged. They may be bored with the alternative activities. They may manipulate the puzzles to gain experience necessary to defeat fellow participants in subsequent rounds. They may take pleasure in being successful, regardless of the content of the activity. In any case, researchers examine the time they devote to the activity and measure the behavior rather than the cause of that behavior.

Researchers of motivation often follow experimental procedures with self-report measures to assess levels of enjoyment and engagement. These surveys typically require participants to assess their attitude toward an activity numerically on a Likert-type scale. Statements on the scale correspond to subscales of the theory, such as interest, effort, tension, and perceived choice. Subsequently, researchers employ quantitative data analysis to determine correlations between the identified variables. Although this method allows for participants to respond to specific elements of motivation, the numerical system is arbitrary to the extent that a *five* on the Likert scale for one person may be a *three* for another. Although researchers can assess the relative consistency of the choices with respect to each participant, the focus again is upon behavior and not upon the cognitive process that precedes behavior. For a participant to affirm that he or she *enjoys* an activity provides only a vague understanding with questionable generalizability. Because of inconsistent linguistic nuances from

participant to participant, the sophisticated statistical analysis loses its empirical force.

In the current study I do not identify dependent and independent variables. Nor do I perform statistical analysis to determine the strength and direction of a correlation. Rather, I call upon the participants to express their nuanced view of the phenomenon under investigation. Just as Heidegger (1996) asserted that the meaning of being is only accessible to *Da-sein*, the experience of motivation can be most completely revealed through the words of the individual who can articulate the cognitive process.

The motivated individuals in this study consist of students who have a demonstrated record of academic success. Any description of their motivational orientation must acknowledge its changeable nature, according to an array of tasks. Because language can conceal as much as it reveals, it is my task as interpreter to lend coherence to a narrative account of the phenomenon.

The cross-cultural aspect of the study is in no way random. Rather, I have purposefully selected students from two cultures where the academic endeavor is highly charged with competition and extrinsic motivators. At the same time, students from Germany and the United States experience systemic educational differences, which may shed light on all aspects of motivation. If education can be viewed as a series of events that influence the continuum of extrinsic to intrinsic motivation, it is instructive to consider cultural factors that may not be

noticed in a single case study. The responses of the American students inform my interpretation of the comments from the German students. Conversely, the German students' words inform my analysis of the American portion of the study. In combination, the two cultural elements allow for a richer and more profound understanding of the phenomenon of gifted academic motivation.

Research instruments

Prior to obtaining Instructional Review Board approval to collect data I created six research protocols. Each protocol represented a series of questions relating to gifted academic motivation through the lenses of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997). I prepared separate interview protocols for students, teachers, and directors, along with questions for a student orientation. In addition, I created five to six daily questions for Survey Monkey to which students were directed to respond in writing. See Appendices A-J for these protocols.

Demographic information on the student protocol included a self-report on their area of academic focus, top choice of future university, likely academic major, and eventual career aspiration. The student protocols contained 21 major questions along with probes and follow-up questions for use as needed. For the first set of questions, students were asked to define academic success, speculate upon the source and direction of their academic motivation, describe what was

most and least enjoyable in school, comment upon the significance of grades and high-stakes testing, and describe the role of their family with respect to school.

The next group of questions required students to comment upon their connection to the school and the quality of their relationships with administrators, teachers, and classmates. This was followed by parallel sets of questions relating specifically to their participation in math and history classes. These questions required students to detail and evaluate their classroom realities, study routines, academic goals, and areas of academic interest.

The probes consisted of pointed questions relating directly to the various aspects of the two theories. For example, probes relating to self-determination theory (Deci & Ryan, 1985) with respect to the students' experience of autonomy, competence, and relatedness. Probes for flow theory (Csikszentmihalyi, 1975, 1990, 1997) dealt with specific elements of the theory such as optimal challenge and the students' perception of the passing of time.

The protocol for teachers followed a sequence of main questions and probes parallel to those asked of the students. The teacher interviews were intended to provide context for the students' comments. The principal questions for teachers dealt with academic content, definitions of success, perspectives of the classroom reality, assessment, and motivational approaches. They were asked to focus their comments on the top performers in the classroom with particular emphasis upon the specific student participants in the study. Probes also directed

the teachers to respond to elements of the theoretical frames, such as competition, rewards, and formative feedback.

The protocol for administrators sought to elicit similar contextual information as those from teachers. However, the series of questions focused upon institutional goals relating to student outcomes. Administrators were asked a series of questions relating to the academic program, how they select students, which universities graduates typically attend, and participation of students on national tests. Administrators were also asked to describe the school culture, to assess the level of parental involvement, and to characterize the motivational approach of the faculty. Like the protocols for students and teachers, the questions for administrators included probes relating to the theoretical frames as appropriate.

In addition to the interview protocols, I prepared two broad questions for the student orientation. The students were asked to provide a two-minute history of their lives and detail their free time activities. The orientation protocol also included instructions for responding to the Survey Monkey written prompts. Through a link to Survey Monkey, students were asked to complete open-ended written responses to five or six questions during the week following the individual interviews. For each survey, students completed a single demographic item where they identified their first name. This allowed me to link their responses to the oral interviews during the Presentation of Data. The questions related directly

to the theoretical frames and sought to solicit details not offered in the oral interviews. In keeping with the phenomenological approach, questions required participants to articulate why they completed academic tasks and how they felt during the process. I also asked students to relate their perception of the passing of time while engaged in school-related activities. On each of the five days, students were encouraged to provide additional written information that might be relevant to the study.

I prepared a final protocol to assist in note-taking during the classroom observations. Since the classroom observations were not recorded, I took extensive notes in several areas that provided both context and specific information relating to the theoretical frameworks. The observation protocol was divided into several sections, including the physical description of the room and comments relating to classroom atmosphere, rules and routines, and relationships between teachers/students and students/students. Additional sections on the protocol organized examples of student choice, optimal challenge, student engagement, student interest and enjoyment, intrinsic vs. extrinsic goals, contingent rewards, teacher praise, and feedback. In addition to the spaces for the specific categories of observation, I left ample blank space for scripting of comments from the student participants and teachers.

Translation of Protocols

After creating the six protocols, I produced my own German translations of each. My translations were more literal than figurative as I attempted to put forth a faithful version that would maintain consistency. I sent these six translations to a native German speaker to make editorial suggestions with an eye toward more idiomatic German that would be understandable particularly for the student participants. After integrating the editorial suggestions, I sent the drafts to the native German speaker a second time for final corrections.

The Sites

I chose the school sites based more upon their similarities than their differences with respect to academic programs, student population, and performance outcomes. While the Ambrose Academy (pseudonym for the American private school in the study) comprised of students from kindergarten through 12th grade, the Goethe School (pseudonym for the German private school in the study) consisted of grades five through 12. However, both have clearly delineated upper schools for the years of secondary education. Although both are technically classified as *private* schools, there is a significant difference in parental financial support. Students attending the Ambrose Academy pay approximately \$18,000 per year; however, this amount is offset by a significant endowment set aside for families needing financial assistance. In contrast, the Goethe School requires students to pay €50 per month (approximately \$750 per

school year). Although this is a nominal payment, it still represents a significant expenditure from the perspective of German families accustomed to full coverage of school costs by the state. Like in the United States, most private schools in Germany are supported by church organizations. The physical and operational costs are typically paid by the church while the salaries, insurance, and retirement of teachers is paid by the state. Each of the 16 federal states [*Bundesländer*] in Germany is constitutionally charged with providing basic education for all school-aged children. However, for Germans, the distinction from church and state-run entities is blurred and the practice of directing public funds to support church-related activities is without controversy. Perhaps the most significant similarity between the two schools is their rigorous academic programs, coupled with high university acceptance rates for their students.

Ambrose Academy

Based upon my on-site observation, I would characterize the Ambrose Academy as having a relaxed, effortless environment. Boys wearing uniforms of khaki pants and polo shirts moved quietly between classes with only minimal horseplay, such as giving high fives or patting each other on the back. Girls wearing uniforms of plaid dresses with tennis shoes engaged in casual conversations and transitioned seamlessly to the quiet classrooms when the bell rang. Male teachers wore a uniform of sorts as well, consisting of slacks, collared shirt and tie without blazer. Female teachers wore comparable professional attire,

typically slacks and a blouse. Between classes or during the morning break, students gathered in small groups, often sitting on the floor of the carpeted commons in circle. Students wanting a quicker transition to class sat on benches outside of the rooms. The Director of College Counseling substantiated my positive impression of the school climate, observing “I think our kids are really nice to each other. And I think they hold a great deal of respect for their faculty. And that, to me, just provides . . . a very favorable and positive learning environment.” The Upper School Division Head concurred with that assessment of the institution, noting “I think it’s a pretty healthy school culture.”

The morning routine at the Ambrose Academy illustrates the ease with which the school operates. At 10:10 a.m., students have a 20-minute break, which is designated for homeroom and morning announcements. The homeroom activities are largely left to the discretion of the teachers, and they typically allow students an extended opportunity to socialize. On all four days of on-site observation, I witnessed all 400 Upper School students gather in the open commons for announcements. Faculty members intermingled with the students or stood above on the second floor overlooking the square. Most announcements were made with a microphone; however, students were quiet enough for announcements to be heard without amplification. Both students and faculty made announcements in a rather casual, effortless procedure. As the audience quietly listened, several students were recognized for their athletic or academic

achievements. The student body responded positively to the spirit of the announcements and demonstrated respect and appreciation for the school culture.

Goethe School

While students attending the upper school at the Ambrose Academy were separated from the elementary and middle school students, those attending the Goethe School had more interaction with the younger students, particularly in hallways and in the courtyard. While at the Goethe School, I was struck by the contrast between the noise and bustle during passing periods and the quiet and order within the classrooms. Just like the Ambrose Academy, the Goethe School has 45 minute class periods. After the transitional bell sounds, students have five minutes before the commencement of their next lesson. Strikingly different was how teachers moved from class to class and students remained essentially in a single room for most of the school day.

The students in the study are in the upper school, which is primarily housed in a row of four portable classrooms that had been constructed within the past five years. During passing periods, students left the classroom and visited in the hallway outside the rooms. The Goethe School has two built-in breaks (*Pausen*) that last 20 minutes. During this time, students often consume snacks and congregate in the outdoor commons along with students of many ages. Because the school was initially constructed in 1894, there are clear delineations between the older areas and more recent additions. The main wing, which houses

the majority of the classes, was constructed in the 1970s and reflects that style of architecture, complete with windows that open outward, double chalkboards, and rows of tables, each seating two students.

Comparisons

While students from the Ambrose academy are required to wear uniforms, those attending the Goethe School are free to wear attire of their choosing. Students dressed casually, typically wearing jeans and a T-shirt or sweatshirt. Older male faculty members dressed formally, often wearing full suits. Similarly, older female teachers dressed professionally with an air of formality. Younger teachers dressed more casually, frequently wearing jeans and collared shirts while younger female teachers wore jeans and casual shirts. While visiting the German campus on a Sunday, I was introduced to several teachers who were preparing a birthday celebration for the director. As they prepared his office for a surprise party, the teachers and one member of the custodial staff served wine to the cohort on the school grounds. Prior to my interview on the next day with the director we had to wade through a sea of multi-colored balloons to find a table.

The Goethe School possessed casualness in the halls similar to that of the Ambrose Academy. However, the German classrooms were much more formal and teacher-centered. Although I spent a significant amount of time in the faculty rooms of both schools, I had many more occasions for conversations with the German faculty. The American faculty room was often empty, since teachers all

had their own classrooms. In contrast, the German teachers shared a large, open faculty room that was constantly occupied. Although teachers did not have designated office spaces, they each carved out a small territory at one of the tables to store their belongings and teaching materials. While in the German faculty room, I had several occasions to speak with teachers. At least a dozen enquired why I was spending time at the school and expressed curiosity about the content of my research. The German teachers asked specific questions about my research design and seemed to be aware of the issues relating to student motivation. They nodded knowingly when I explained the distinction between intrinsic and extrinsic motivation in the context of academics. In fact, many wished me well in my research.

Recruitment and Data Collection

The student participants from both schools were selected by school administrators, based upon their grade point average and class ranking. From the American school, I recruited the top five 11th graders with the intention of interviewing only four. To obtain a comparable sample from the German school, I selected the top five students in the *E-Year*. This *E* stands for *Einführungsphase* [orientation phase]. It occurs after the 9th grade and prior to the 11th grade. In the state of Hessen, the *Gymnasium* does not currently have a 10th grade class, since they are transitioning the end year from 13th grade to 12th grade. Although I could have selected a sample of 11th graders at the German school, based upon age (16-

17 years old), their relatively advanced academic program, and the fact that graduates of a Gymnasium typically enter American universities as sophomores, I selected the E-year. After interviewing the students and learning about their academic topics (students in the E-year complete calculus in Germany, which is comparable to the most advanced 12th grade classes in the United States), I was comfortable with this choice.

Although neither school formally ranks students, they possessed the records necessary to recruit the top academic performers. For the German school, an administrator selected four participants and one alternate, all of whom signed informed consent documents along with their parents. To facilitate scheduling, I worked with the students' math teacher, who served as a *tutor*, which was essentially a homeroom teacher. Prior to the orientation, I informed the tutor (Herr Gärtner) that I would only require four students to participate in the study. I met with the four actual participants at the orientation and used this as an opportunity to schedule the individual interviews and classroom observations.

Prior to meeting with the American participants, I also arranged for four students and one alternate to sign informed consent documents along with their parents. However, in this instance, I met with all five students at the orientation. The coordinating teacher suggested that I meet with the students, discuss scheduling options, and then select the actual four participants based upon ease of scheduling. During the orientation it became clear that all five students expressed

sincere desire to take part in the study. When no scheduling challenges arose, it became apparent that I would need to choose four of the five to maintain the original design of the study. However, even after speaking with the five students for the 20 minutes of the orientation, I gained some insight into their unique characteristics as students. Had I eliminated a participant after this initial exposure, I would have skewed the data, since I could have pressed the direction of the findings in a predetermined manner. With this in mind, I decided to include all five American participants in the study. Although this created an uneven number of students and created additional data in the American portion of the study, I determined that this was preferable to the potential problems related to eliminating a student.

For all nine students, I provided the same incentive for participation. Prior to the signing of informed consent documents, I offered participating students a \$50 iTunes or Amazon gift card. For the German participants, the cards were converted to Euros. Appreciating the irony of offering monetary rewards to participants in a study of intrinsic motivation, I felt that the time commitment of roughly three hours warranted some type of remuneration. However, in keeping with the assumptions of self-determination theory (Deci & Ryan, 1985), I did not make the reward contingent upon a specific performance during the study.

Conducting the Interviews

I conducted the four student interviews in Germany in a quiet room in the old portion of the building near the cafeteria and overlooking the courtyard. The German participants were polite, respectful, and outgoing throughout the process, assisting me in creating a schedule of individual interviews and classroom observations. For the individual interviews, the students were not early and not late. Rather, they were right on time, which is the German custom. I sat at a table across from the participant with a recording device and a back-up recorder between us.

During the interviews in Germany, I referred to the student participants as *Sie*. This is the formal *you* that is traditionally reserved for adults whom one does not know well or acquaintances with whom one maintains cordial yet ceremonial distance. For students in the *Gymnasium*, teachers often maintain the informal *du* pronoun until the final year of study. I chose to implement the formal greeting as both a sign of respect and to reinforce the idea that the students are essentially my co-researchers in the study. Without their words and insights, I would only gain a superficial understanding of the phenomenon under investigation. Prior to the initial question, I informed the German students that I would use the formal address. They seemed to enjoy the formality, which I maintained until the end of the recorded interviews. However, as we visited informally after the recorded

session was complete, I reverted to the more common *du* address. As is fitting, the students addressed me as *Sie* throughout the entire interaction.

I conducted the student interviews at the Ambrose Academy in similar fashion to the German interviews. One interview was set up in a conference room near the college counseling office. The other four took place in an empty meeting room overlooking the commons. Like their German counterparts, the American students arrived right on time and expressed excitement to take part in the study.

At both schools prior to meeting with students, I had the opportunity to interview the directors. At the Goethe School, I conducted a recorded interview with the headmaster on the initial day of my site visits. Similarly, I interviewed the head of the upper school at the Ambrose academy before meeting students or conducting classroom observations. I was fortunate to be able to interview the Head of College Counseling at the St. Ambrose academy as well. This interview was particularly significant because she provided insight into the highly competitive process of college admissions. Although there was no comparable position in the German school, I gained additional insight by interviewing a math teacher who was also acting assistant director.

In Germany, teacher interviews took place after all student interviews and classroom observations were complete. This provided context for the students' account and allowed me the opportunity to follow up on elements of class that arose during the observations. I interviewed a math teacher (acting assistant

director) and a history teacher, both of whom taught the participating students. At the American school, I also interviewed a math teacher and history teacher who had the participants in class. The purpose of the teacher interviews was to provide context for the study and broaden perspective on the students' comments. Teachers' frequent reference to the specific students in the study allowed for insight into the students' motivational orientation and experience of realities in the classroom.

Classroom Observations

For the series of classroom observations at both schools, I sought to view the participating students in the classroom setting primarily in math and history classes. I chose these two courses because they represent common ground for the two groups of students. I also wanted the opportunity to gain insight into divergent motivational orientations for the natural sciences and the humanities. This also aligns with the design of the study since I asked a parallel series of questions in the context of math and history classes. To some extent, my classroom observations were limited by the students' schedules. Since all of the participating students were enrolled in the most rigorous academic courses offered at their schools, it was common for as many as four to be enrolled in a single class period. When math and history classes were not available, I observed any other class with the intention of seeing each of the nine students in class at least twice. I instructed the teachers to consider me a fly on the wall in the sense that I would

quietly take notes and not interact with the students. During the classroom observations in both Germany and the United States, the participating students acknowledged me as I entered and waved goodbye as I left the room.

Survey Monkey Data

I triangulated the interview and observation data with written data from Survey Monkey responses. This represents a significant amount of text in both the written and recorded formats. What follows is a description of how I transcribed, translated, coded, and prepared all data for analysis.

After the oral interviews and classroom observations were complete, I sent student participants an e-mail link to a series of five Survey Monkey questionnaires. At the end of five consecutive school days each student received the link and was asked to respond in writing to five or six questions relating to the study. Based upon the students' descriptions of their work habits, it was not surprising that the students responded promptly and completely to all of the questions. On the rare occasion when a student submitted a late survey, he or she included an apology either via e-mail or as part of the survey itself.

Students provided additional details and examples of their academic motivation that did not emerge from the oral interviews. The survey links paralleled the Experience Sampling Method pioneered by Larson and Csikszentmihalyi (1983) for studies on flow experiences. With the Experience Sampling Method, participants carry a pager and are asked to respond to written

questions at random times during the day as a way to uncover their attitudes and motivation toward daily tasks. Although my Survey Monkey questions were sent at a previously established time, students were asked to comment freely to a range of topics at the end of the day when their school attendance and homework were complete.

Since the students often worked late into the night, many of the responses were submitted between midnight and the early morning hours. Both the American and German participants were faithful in completing the written surveys, responded thoughtfully and thoroughly. The surveys added a layer of understanding for the study, allowing students another medium through which to express their thoughts on their academic experience. By sending the survey links after the interviews were complete, students had the opportunity to reflect upon their academic routines and feelings toward school.

Transcription of Data

I completed the German portion of data collection in March and the American portion one month later. During the next two months I transcribed both sets of interviews verbatim by hand and later typed them into Microsoft Word documents. I did not immediately translate the German transcripts into English. Rather, I left them in their original version for analysis and thematic coding.

In preparation for the Presentation of Data and Analysis, I assigned a different color for each student's comments. This allowed for balanced attention

to each student's perspective and eliminated confusion during the attribution process. To maintain anonymity, I established a system of pseudonyms for all participants, including students, teachers, and administrators at both schools. I also used pseudonyms for the two schools and referred only in the most general terms to their relative locations. For the sake of clarity, I provided names beginning with the letter *A* to the American participants. I named the American students' Ashley, Alice, Andrew, Amanda, and Amelia, and the American teachers Mr. Anderson and Dr. Aldridge. Following the same approach, I named the American school the Ambrose Academy. On the German side, I began all the names with the letter *G*. I named the German students Gisela, Gudrun, Gottfried, and Günter, and the German teachers Frau Grünwald and Herr Gärtner. Unable to resist a literary reference, I named the site the Goethe School.

Coding and Preparation of Data for Analysis

After the transcriptions were complete, I separated the student statements into four thematic units that appear in the Presentation of Data chapter. They relate to the students' experience of academic preparation through study and homework; how they experience extrinsic factors such as grades, high-stakes testing, and college applications; how they experience the classroom environment and relationships with peers; and how they experience the motivational influence of adults in their lives such as parents, teachers, and school administrators. After creating thematic groupings of students' comments, I initiated the presentation of

data, striving to allow the students to tell their own stories. This was followed by an analytical look at the data through the frameworks of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997).

After transcribing both the American and German student interviews, I was struck by the relative directness of the Germans. With that directness came brevity, which was reflected in a pronounced difference in the duration of the interviews. The American student interviews averaged 45 minutes, while the German interviews averaged 25 minutes. My initial thought was that this was due to my own linguistic limitations in the German language compared to English. However, upon hearing the recordings, I realized that I put forth significantly more probes and follow up questions in the German interviews.

The American students opened up immediately and offered many personal details for even the most generic questions. They eagerly provided anecdotes, frequently quoting themselves or reproducing both parts of conversations with parents, teachers, or classmates. They were at times clever, irreverent, whimsical, and demonstrated self-deprecating humor.

In contrast, the German students responded directly to the questions, offering few anecdotes and maintaining a relatively serious tone throughout. When they felt that a question was satisfactorily addressed, they simply concluded their response. It must also be noted that in German, there is a clear delineation between formal and informal speech. During the interviews, the German students

addressed me with *Sie*, which is the formal version of *you*. With this comes a general formality in speech which certainly comes through in my translations. At the end of both sets of interviews, I revealed to both groups of students that this was a cross-cultural study with participants attending German and American schools. Without exception, the nine students were interested in the content of the study and expressed the desire to debrief, once the dissertation is complete. After publication of this dissertation, the participating students will have the opportunity to read this account of their academic motivation, and that of their co-researchers on the other side of the Atlantic.

Chapter III Summary

The present chapter detailed many aspects of the methodology and represents a detailed account of the process of data collection and analysis. It included philosophical and methodological overviews, which provided the opportunity to situate the study and clarify my choices as researcher. I described the research instruments, clarified the translation process, and justified the questions—a task central to phenomenological study. I set context for the study by providing descriptions of the Ambrose Academy and the Goethe School. To clarify research choices, I detailed the process of participant recruiting and explained the how I conducted interviews and classroom observations. I described the system by which participating students received Survey Monkey

questions. The chapter concluded with an explanation of how I created transcripts, translated the German data, and coded data for subsequent analysis.

The following chapter consists of a detailed Presentation of Data, primarily expressed through the voices of the student participants. It represents the longest chapter of the dissertation and contains the substantive data that I will later analyze through the lenses of self-determination theory (Ryan & Deci, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997)

CHAPTER FOUR

PRESENTATION OF DATA

As I lend structure to the presentation of nine student teacher and administrator interviews, classroom observations, and campus tours, I am mindful that this represents the commencement of the hermeneutic process. Just as all questioning explicitly reveals my own fore-meanings concerning the phenomenon under consideration, the organization of the Presentation of Data exposes my argument, perhaps in veiled tones. Equally significant are the pieces of text that I choose *not* to report. Essentially, I am placing myself as judge and jury concerning the value of the sundry pieces of data that I uncovered. In that sense, as Van Manen (1990) suggested, “the silence of spaces is as important (speaks as loudly) as the words that we use to speak” (p. 113).

Since my principal endeavor is to describe how academically gifted students experience motivation toward academic tasks, I structure the Presentation of Data around four categories of lived experience revealed primarily through the words of the participants. To a large extent, these categories represent areas of common ground between the American and German students. That is, both the American and German participants had a good deal to say within each of the categories. However, their responses revealed cultural and systemic differences that illuminate the phenomenon of gifted academic motivation.

The first category is called *the realities of preparation: How the students experience homework and study*. It details the students' academic routines, including where and when they study, their use (or non-use) of music, their experience of digital distractions (computers and cell phones), and their techniques for memorization. It also explores the amount of time they devote to scholastic preparation and the extent to which their innate talent and work ethic combine to facilitate academic success. The second category is called *the realities of academic achievement: How the students experience measures of success, how they experience the college admissions process, and how they characterize their own academic abilities*. In this section, students reveal the extent to which they are grade-conscious, how they prepare for high stakes testing like the SAT and ACT (American students) and the *Abitur* (German students), and the motivational significance of college acceptance. The students reflect on their own academic abilities and comment on their work ethic. The third category is titled *the realities of the classroom: How the students experience the school learning environment*. Here the students articulate their feelings toward the school and their peers. I also provide descriptions of the students taking part in classroom activities, with focus upon their level of engagement and how they interact with teachers and fellow students. The fourth and final category is named *the realities of the adults in the students' lives: How parents, teachers and administrators influence the students' motivation to learn*. This section explores

the means by which the significant adults shape the students' motivational orientation through both intrinsic and extrinsic means.

After an initial introduction of all nine participating students, I present the stories of the American and German students together, typically in alternating sequence. I settled on this structure to accentuate the cross-cultural aspect of the Presentation of Data, which I endeavor to present with minimal editorial comments. However, I recognize the futility of this task, since the very questions are intimately related to the theoretical frames of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997) and reveal the direction of my thinking on academic motivation.

The Student Participants

Ashley attended public school in Connecticut prior to joining Ambrose Academy in the seventh grade. She plays soccer and is a photographer for her school athletic teams. She plays the violin and is working on her pilot's license. She is ranked in the top five students at Ambrose Academy and considers her current area of academic focus to be history. She plans to attend Vanderbilt University or Emory University with a likely major of business, specializing in international relations. She is uncertain of her career goal.

Alice was born in Oklahoma and joined Ambrose Academy in kindergarten. She is the news editor for the school newspaper and enjoys writing short stories and poems. Due to a recent injury, she is unable to participate in

athletics for the current semester. However, she previously participated in field hockey, soccer, and tennis and anticipates a return to competition during the upcoming school year. She is ranked in the top five students at Ambrose Academy and is currently focused on the study of Spanish and cultural studies. She would like to attend Harvard University, Columbia University, or the University of Pennsylvania, where she would like to major in business. Her professional goal is to work in foreign affairs and international relations.

Andrew was born in Texas, moved to Connecticut for a year, and then returned to Texas, enrolling at Ambrose Academy in kindergarten. He plays football, soccer, and lacrosse at Ambrose Academy. He participates in school musicals and is part of an improvisational comedy team. Just prior to our interview, Andrew was elected student body president for the subsequent school year. He is ranked in the top five students at Ambrose Academy and focuses his studies on biology. He would like to attend an east coast college, such as the University of Virginia, the University of Pennsylvania, or Yale University. He plans to major in biology with a career goal of becoming a pediatric surgeon.

Amanda grew up in Texas and has attended Ambrose Academy since kindergarten. She plays on the softball and soccer teams at her school. In addition, she participates in musical theater, band, and has an interest in photography. She is ranked in the top five students at Ambrose Academy and has labeled her area of academic focus to be science. She has identified a long list of

potential colleges, including Williams College, Amherst College, Pomona College, and Swarthmore College. She intends to major in biology or chemistry and has not yet identified a career goal.

Amelia was born in Texas and attended public school in the small town where she grew up. She joined Ambrose Academy in the ninth grade and still resides in the small town, where she has maintained many friendships. She participates in choir and musical theater, takes part in a freshmen mentor program, is a member of the school soccer team and a manager on the lacrosse team. She is ranked first in the junior class at Ambrose Academy and considers her area of academic focus to be math. She plans to attend the University of Texas or the University of Pennsylvania, where she would like to major in accounting. Her professional aspiration is to enter a field relating to math and accounting.

All of the German students joined the Goethe School in the fifth grade. Gisela's major courses are German and math. She would have preferred to choose Latin instead of German. However, not enough students enrolled in Latin to constitute a major section in the school. In her free time she participates in handball and has taken part in dance in the past. She would like to study math at the university level with a career goal in the natural sciences. She indicated that it is too early to select a particular university.

Gudrun has selected math and chemistry as her major courses. In her free time she participates in track and field and dance. She also likes to play the guitar

and sing. Although she has not yet selected a prospective university, she is most interested in chemistry as a major. Gudrun is not yet certain about a professional aspiration.

Gottfried chose to major in Math and political science. He also listed physics as an area of academic interest, though it was unavailable as a major subject. In his free time he likes to play basketball, though he does not play for a club team. He also has played the drums with his school band in the past. However, this created scheduling conflicts with his academic work, so he recently cut back on his musical activities. Although he is uncertain concerning a potential university or a career, he would like to major in physics.

Günter's major subjects are math and English. In his free time he plays soccer for a local club and also works as a referee. He is the only German student to have a specific university in mind. He plans to attend the Technical University in Aachen. He has already completed a practicum with Lufthansa and would like to pursue a career in aeronautical engineering.

The Realities of Preparation

As the brief introductions above demonstrate, the nine students in the study possess high academic aspirations which they have for the most part achieved. Both the American and German students were eager to share many details concerning their routines of homework completion and study. The following account of common study procedures and the vigor with which they

implement them could be read as a recipe for academic success in high school. The section is divided into subsections relating to when the students commence homework, where they work, their views concerning music during study, their approaches to digital distractions while studying, their favored study and memorization techniques, and how much time they devote to their studies.

When the Students Study

Central to the students' homework procedure is a common lack of procrastination. All five American students reported regularly-scheduled extracurricular activities, such as sports or musicals. Ambrose Academy requires three years' participation in after school sports, which normally run from 3:30 p.m. to 5:30 p.m. Ashley's described her timeframe, which is typical of all five students, explaining "I drive home and then I might like take a 15-minute break and then I start homework." Amanda echoed a similar procedure, explaining "After practice I generally eat, take a shower, and then I'll start my homework, and I'll just do that for up to like three or four hours a night." Alice was not involved in afterschool sports because of an injury, so her start time was relatively earlier than that of the other participants. She specified, "I will get home at 4:00 or five—and then maybe I'll start my homework at 5:15 or 5:30 after I get a snack." Andrew responded that he often takes advantage of a natural break in his schedule to get a head start on homework, noting "I will either do it during my free period or when I get home."

The school has an open campus where students may gather during their free periods in the commons. During my observation, students were typically grouped in circles of five to eight students, dividing their time evenly between studying and socializing. Andrew described how on days with an impending test he often avails himself of a more quiet space near the commons where most of the student interviews took place. He reported “I’ll be in the Addison Room, in here, cramming for that test just surrounded by books and jotting down as many notes as possible before the test.”

Just like the American students, the Germans have firmly established routines of study. Without exception the four German students complete homework as soon as they get home. On typical days, that means arriving home by 1:30 p.m. However, the students in the upper school frequently have two afternoon classes per week. This means arriving home 45 to 90 minutes later, depending upon the length of the class. Gisela explained her approach to scheduling homework, which includes her procedure for weekend assignments:

I do homework directly after school. And always on the same day. For example, if we get something on Friday, then I will do it right away on Friday because I don’t like it when I have to do it late on Sunday night. Studying is partially based on the same principle of time. Mostly I complete the study sheet and read it through again in the evening, because I can remember it better.

Similar to Gisela, Gottfried explained that he never procrastinates and that his start time for homework depends upon his class schedule, noting “Often I start before lunch. It always depends. When I have eight classes, then I come home late. But when I maybe just have five classes, then I do it before lunch.” Gudrun reported that she rarely forgets to complete assignments. However, she admitted “That has happened before. I mean, sometimes you simply forget to write down your assignment or just forget to do it. But I actually try to do it all.” She then described how she had felt at that time and clarified her teachers’ for late homework:

I felt a little bad because I normally do it and always turn it in. But if somebody does that—when someone does not complete the homework, they get a check mark. And when you have three check marks, you get a letter to your parents. I have never had that. Actually the most that I have received is one check mark, and that is not so bad.

Günter also completes homework daily and right after school, explaining “First I eat with my family. And then actually homework—in any case I study something, some type of assignment. But not for the entire day.”

Where the Students Study

Just as the students are consistent with *when* they study, they are also consistent with *where* they study. Although some of the girls described an occasional study outing to Starbucks, they typically study in their bedroom, most

at a desk. Amanda was the lone exception who did not use a desk. She explained “I do my homework in my bed actually. I just sit down and lay all my books down.” Alice described how she attempts to “pay attention to one thing at a time.” She accomplishes this by ensuring a quiet workspace, often working around the schedule of her two younger brothers:

I do have two brothers. So it'll be quiet on certain days—they play sports, so they don't come home 'till later, so I'll try to do my homework like reading or something that I have to definitely concentrate on—while it is quiet, or I'll ask them to keep it down.

Amanda experiences fewer challenges finding a quiet place at home that is conducive to study:

'Cause usually it's just me, my brother, and mom. My dad gets home around like seven or 7:30. But he usually just stays downstairs, and like watches the news or something. And so my brother's room is across from the hall from me. And he's always just doing homework and mom's like cooking or reading a book or something. So it's generally pretty quiet.

Three of the four German students typically complete homework in their bedrooms. Gottfried explained his need for quiet, stating “I stick myself upstairs in my room and close the door so I will not be disturbed.” Günter described his space in a little more detail, noting “I am alone. Totally alone in the room. No other things to do. Then only math book, exercises, and formulas.” Gisela

prefers to complete her studies in a more public space, explaining “I do my homework in the dining room . . . Sometimes my mother is in the room. She frequently sits at the PC, or if she is not there, she is working.” She described how her typical workspace looks, adding “I just sit at the big table. Then I can spread out everything and it is quite practical.”

Use of Music During Study

In an effort to eliminate distractions and maximize the efficiency of their homework sessions, four of the five American students do not listen to music at all while in their place of study. Amelia described a need for absolute silence to enhance her concentration:

I have to have silence myself when I think. I can't listen to music or anything when I do my homework. A lot of people watch TV, listen to music. I can't have any noise really. I shut myself off in my room and I just focus. I can't even fall asleep with music in the background. It's terrible! (laughs).

Ashley, Alice, and Amanda also reported that listening to music while studying is distracting, and that they prefer to work in silence.

Andrew, notably the only male in the American group, was the sole exception with respect to listening to music while studying. He described in detail how the choice of music depends on his mood. His preference is often classical music because it does not have lyrics. He creates folders of streaming

music, emphasizing that it does not require him “to spend time clicking through all the songs and stuff like that.” He tries to avoid music that is familiar, clarifying “If it’s a song that I know, I’m kind of inclined to sing along and hum along to it. And I don’t wanna get distracted like that.” However, he added that when studying for French tests, he often listens to music with French lyrics, noting that it “kind of gets me thinking in French.” He further clarified that for classes like math that do not revolve around words, he often “listens to like just regular old music. But it’s always like really calm. . . and not loud enough that my brother across the hallway can hear it.”

Similar to the majority of the American students, the Germans eschewed the use of music while studying or completing homework. Gudrun explained “I actually always study alone . . . I prefer to be alone and without music.” Gisela left a small opening for playing music while studying, responding “Mostly . . . no music most of the time.” The two boys responded briefly and directly toward the idea of playing music while studying. Günter asserted “No!” Gottfried added dismissive laughter to his “No!”

Digital Distractions During Study

While the students recognized music as essentially a distraction to optimal study conditions, they were also aware of the potential detrimental effects of digital technology. They could all articulate acceptable boundaries for the use of computers and cell phones while studying. Because the school has a web-based

portal containing grades, assignments, and instructional documents, there is a practical need for students to occasionally have an open computer while studying. At the same time, the students were cognizant of how an open computer can lead to multi-tasking. Amelia described how she is able to overcome the distracting potential of the open computer through sheer effort:

Sometimes I get distracted and I open up a different tab, go on YouTube or get on Facebook or something. But I have the willpower to say “No, you haven’t done anything for 10 minutes, you have to stop!” And then I close it.

Andrew often uses his computer to play music while studying, so having it open is a concern. However, he explained that he tries to use his “computer as a tool.” He clarified his use of digital resources to optimize the efficiency of his study time, noting “For instance, reading an article for English, don’t know a word. I’ll pull up Dictionary.com and look up the definition of it, understand it, and then go right back to reading.” Ashley also admitted to leaving her computer open, observing “I manage it most of the time. It depends upon how focused I am (laughs).”

Perhaps more challenging for the students is the presence of a cell phone with the constant potential of text messages to break the spell of studying. Ashley distinguishes between the relative importance of academic tasks when determining whether or not to respond to an incoming text message. She

explained “If I’m doing homework I will, but if I’m actually studying for a test, I don’t really reply unless it’s someone else asking a question.” Andrew is more open to digital distraction, insisting “The only thing I’ll like interrupt my studies for is if like my friend texts me or something like that.” As any good digital native, Andrew uses the capacities of his cell phone to quickly help fellow classmates, explaining “If it’s someone asking for homework help, I’ll text ‘em a picture of the page or something like that.” He distinguishes between serious academic requests and social uses of the phone, clarifying “If it’s . . . just like my friend sending funny pictures or something like that—I’ll ignore those, ‘cause I *know* who those come from.” At the same time, he has established exceptions to his texting policy, confessing “But if it’s my girlfriend, I’ll respond to her, and then get right back to it.”

For Amelia and Amanda, the issue of receiving and sending texts represents a more profound question of conscience. Amelia is torn between the distracting possibilities of the cell phone and its use as a timing device:

I keep my phone with me, which is weird, ‘cause I’m always looking at the time on my phone. When I have a test or a quiz the next day I say, “OK, by 8:00, I’ll be sitting here on my bed studying for an hour, ‘till 9:00.” That’s what I’m gonna do, and if I run past that plan—I usually do run past that plan, because I get distracted with my phone—I’ll see a message on it, I’ll read—if I’m reading history at that time—I’ll read ‘till

the next three pages, and then I get to check my phone. Kind of like a self-reward system, if that makes sense. It's weird.

Amanda has also developed a self-imposed extrinsic reward system, using the text message as currency. She explained:

Well usually I will try to finish the problem. Like if my phone rings in the middle of a problem, I'll try to finish it. And then I'll go and look at my text. And then I'll respond. And then go to the next problem and do it.

And so it's kind of like a text after every problem (laughs).

Amanda later admitted that knowing that a text message awaits her causes stress.

She clarified:

Because my phone has this green light (laughs loudly), it flashes every half a second or something (laughs). And it's like, I can see it, so I'll just turn it over so I can't see the green light flashing (laughs) . . . It's begging you to look at it (laughs)."

The German students were equally adamant about their avoidance of digital distractions in their workspace. All four denied any type of multi-tasking with their computers or phones. Gudrun explained her rationale for this strictly no-technology policy:

I can't do that [multi-task] so well. So I either concentrate primarily on it or I actually get nothing out of it. I would rather just devote 30 minutes

properly to something, and then just go to the computer afterwards.

Otherwise it may take as much as two hours to study only half as much.

Memorization and Study Techniques

Although the American students reported only partial success in negotiating the minefield of digital distractions, they articulated thoughtful and systematic techniques for study and memorization, which are fundamental to their academic success. They tend to memorize material right before bed, which is typically between 10:30 p.m. and 12:30 a.m. They are not above cramming, since their exams are heavily weighted in their overall grade. Andrew explained his method of preparation for math exams:

I do it at my desk right before I go to bed. There's always summaries and review to the chapters in the book. I go back, I do all those, make sure I know the concepts pretty well. Before I do that, I turn through the pages of the book and write down all the formulas—all of those that we learned, all the identities and stuff like that.

It is common for these students to take an active approach to study, often writing down terms and creating their own outlines. Alice detailed this technique:

For exams, I will make like maybe a review sheet—I like to write things out. So maybe I'll do that or I'll read history beforehand, and then I'll just review the night before—but I review for about two to three hours,

depending on what the test is, so I do put quite a bit of extra time into tests.

Alice admitted that this can be a labor-intensive procedure, noting “I tend to over-study a lot, but that’s what I do.” Although Alice underlines passages prodigiously, she does not necessarily go back and study those passages. In contrast, Amanda prefers to study the main topics in history class, explaining “I’ll generally re-read the section of the books, or if I don’t have time, then I’ll just read like what I underlined or highlighted or whatever. And so just get the key points of the section.” For math assessments Amanda expounded “I’ll read the book and the way they do it—and then I take notes on key points and equations and formulas, and I try to look at those, memorize those as best as I can.” Ashley also takes an active approach, which for history can mean reading and outlining 15-20 pages per night. She reported “For each test I re-read the chapter. Then I take notes on what’s important. But other than that, most of it just kind of stays with me.”

The fact that these students are blessed with outstanding memories partially explains why they eschew traditional study methods, such as creating and learning flashcards. Amanda described her strong reading comprehension skills, stating “I’m pretty good at absorbing information, so if I read through something, I can kind of just remember it.” Amelia revealed her strong textual memory by explaining her alternative to flashcards:

A lot of people do flashcards and stuff, but I can't do that. Flashcards have never helped me. I have no idea why, but when I'm learning something, I have to write it down on my own and then re-write it; I need to see if I remember it. I can't look at the same flashcard and turn it over and say, "OK, that's it." I have to outline the chapters, go through the pages, and pick out key times, events, people, and places. If I remember where I saw it on my sheet of paper, I remember what comes after it, and that helps me create like a mental timeline of history. That helps (laughs).

Amelia described how she was very lucky to possess a type of contextual memory, explaining "I don't want to call it a photographic memory, 'cause I spend a lot of time reading and focusing." She went on to detail the visual structure of her memory, adding "I can remember if I read a fact and it was on the left side of the page, and then I can remember what else was in the rest of the page." She described a sequential memory and clarified, "I don't visually see everything on the page, but I remember in order of the things I read."

Although Andrew declared that he was "fairly good at memorizing stuff," he advocates a method that goes beyond reading, re-reading, and studying notes. Particularly for his advanced Spanish course, revealed that he uses a web-based flashcard program called Quizlet, noting "I've got thousands of flashcards on there. Most of them for French, just vocab . . . I make 'em public, and a lot of people in my classes use 'em as well." Andrew defended the objection of many

people concerning how vocabulary is assessed in writing, yet Quizlet requires only typed responses. He explained, “You know it well enough that you can just stare at a screen and type without thinking, then you’re gonna get to the test and know it just as easily. Just as quickly.”

Like their American counterparts, the German students have established techniques for study and memorization that help them successfully prepare for assessments. Gottfried explained that for math, his means of preparation is essentially to calculate problems until he is comfortable with his understanding:

Usually I calculate the practice problems first. These are assigned in class to prepare us. After I have done the problems and had any difficulties, then I calculate where I had the difficulties, go over the mistakes, and calculate an additional problem. And when I am done with the practice problems, I look again at the special cases.

Gottfried clarified that study for history class is a much more time-intensive activity:

In history, we mostly copy down board diagrams in class, which practically summarize the lesson. I summarize all board diagrams and perhaps the text from the book. When I can look at several pages at once, then I just study them all—try to memorize them and be able to summarize to show my understanding. As far as time, history in any case takes longer, as much as five to seven hours I think.

Gottfried then detailed his meticulous process for memorizing material in history:

I read everything—things that we need to memorize I break up into paragraphs of about a quarter page or so. Then I read them through, remove the pages, and repeat them twice. Then I do the same with the next paragraph, and when I have done an entire page, perhaps four times in sections, then I do the entire page. After that, I move on to the next page.

Günter detailed a similar system that he uses to memorize material for history class:

We get a sheet or section of text from the book, and then I write out a summary of the important things. After that I try to repeat it once, often reading through it and doing it again. Then I study the sheet until I no longer need it. But it is not only memorizing what is there. I also attempt to understand it. Once you understand it, it is easier to study.

Gudrun has also developed an approach to history where she studies through writing and repeated readings of passages of text and classroom notes, explaining “When I have an assigned reading or notes, I read them through three to four times. Then I can already recite it by heart. I do that at the earliest two to three days before the test.” She detailed a process where she reads a section “three to four times. That is divided perhaps over two to three days. It always depends, some things I can do faster, some not so fast (laughs).”

Gisela commented that she has similar systems of study for both math and history. However, she clarified “The assignments are more time-intensive and involve more reading and more writing and more reflecting.” She admitted that her efforts for math were significantly less, noting “For math, I actually hardly study. And for history, until you really get it, it takes a little longer.” Gisela explained that for history assignments she often takes notes and cautions that to comprehend the material “you have to read it several times.”

Time Devoted to Homework and Study

Although the American students’ homework and study routines may not contain groundbreaking techniques, the consistency and sheer magnitude of hours they devote to academics outside of school separates them from their peers. They described systems of efficiency that maximize the time allotted to homework. They detailed methods for resisting the lures of technology and the pressures to leave their places of study for social interaction. They characterized a determination to complete their school work on time without procrastination and without excuses.

Four of the five students are involved in after school athletics, which entails arriving home as late as 6:00 p.m. After dinner, they typically study with few interruptions until bedtime. Concerning his study schedule, Andrew reported “It’s not uncommon for me to be up ‘till 12, 12:30 every night.” He added that he typically wakes up at 6:30 a.m., which is “kind of tough sometimes. Catch up on

the weekends (laughs).” Ashley reported studying “maybe three or four hours a night.” She clarified that her recent studies have required more time, noting “Lately it’s been pretty late. We’ve had a lot of work, so, like twelve—but that’s ‘cause lately it’s just been very stressful, but I think normally maybe like 10.” Alice reported a similar time frame after a 5:30 p.m. snack, clarifying “I’ll work through and have dinner about 8:30 and then I’ll continue working ‘till about 10:30. But with math, it just depends on where it falls in that time period.” She explained that she occasionally allows herself breaks and that the schedule is flexible, clarifying “It depends. When I have like a test, maybe I’ll work a little later. If I don’t have as much homework, maybe I’ll stop at eight or nine. It just kind of depends on where I am.”

Because the students are highly scheduled throughout the day, time for homework represents a scarce resource. According to Amanda, she has to prioritize the time she devotes to history class, which meets every morning at 8:30 a.m.:

History I don’t procrastinate in because it’s my A period class, so I really can’t afford to *not* do my homework, because I don’t have time during the day to do it. . . . So that’s probably the first thing I’ll do every night. I get out my history book and I’ll read my history homework.

For Amanda, the challenging homework for history class often requires an inordinate amount of time compared to her other classes:

I think that sometimes, I mean like in a way, history kind of takes precedence over some of my homework because I don't have the time to afford to let it go by. So it'll take precedence. And so like, as I was saying earlier, if I have a lot of homework, then something has to get pushed aside a little bit. But it's never history . . . never history (laughs).

As a result of the tight schedule during the week, Alice typically logs into the school's homework portal and completes her Spanish assignments and history reading on the weekend. She explained:

So when I know that I have a busy week or even if I'm not doing anything crazy on the weekends—not that I do anything crazy on the weekends (laughs)—but if I'm not having a busy weekend, I will just check the portal and I'll do any homework I can. I tend to do my Spanish homework ahead, 'cause our teacher posts everything online, so I have everything done, so it kind of eases the week's load . . . A little ahead. I like to be ahead.

Amelia also described her willingness to complete homework on the weekend, responding to the Survey Monkey prompt while attending an out-of-town lacrosse tournament:

Well, today I was at the lacrosse SPC tournament in Austin. Even though I was away from school, I had friends texting me the assignments that I was missing. Even now, back at the hotel, I feel very stressed to get all

my homework done. I've been working on small assignments when I have time, but there isn't much spare time, so I'm feeling scared about leaving assignments on my to-do list. I hate it when work piles up.

She subsequently articulated her inner calculation between the relative value of homework and free time, writing "I hate knowing that I could get behind in a subject. Like when I miss a day of school, for instance, I dread the make-up work more than I enjoy the free time I have while being gone." She described her tendency to complete tasks early to avoid stress, noting "When I have a lot written down in my planner, I get stressed out. So that motivates me to do more tasks as efficiently as possible, and then I get to cross them off of my list." Amelia clarified the nature of her decision-making process by comparing her work ethic to that of her peers:

I mean, a lot of people consider homework burdensome. They say, "Oh my gosh! I don't want to do this!" But I think of it as: "If I learn it now, if I take the time outside of class and I study it, that's just gonna be less stress I put on myself the day before the test," when they're all cramming at home, saying, "Oh my gosh, I don't know how to do this." I'm saying, "Well, I *do* know how to do this." I'm saying, "Well, I *do* know how to do this, because I *did* pay attention." So that helps (laughs).

Similar to the American students, the Germans possess a strong work ethic and devote a significant amount of time to their studies. It is difficult to compare

the time with that of the American students, since athletics, music, and theater are all school sponsored events in the United States. The German students certainly juggle a variety of time commitments, though most likely to a lesser extent than their American counterparts.

Gudrun explained that she likes to complete her homework early to allow for her participation in track and field three times per week and dance once per week. She also makes time to play guitar and sing. However, from her description, she typically devotes most of her preparation for tests, explaining “I typically only study prior to an exam—three or four days before the test I begin, and perhaps for a half hour to an hour per class. So for me only if tests are scheduled.”

Günter shares Gudrun’s practice of studying only for upcoming exams, noting his timeframe of “perhaps one to two hours. All for a test at this point.” Günter explained his challenge was combining school with his soccer schedule, which includes both competing during the week and refereeing on the weekend, noting that he does not study “for the entire day.”

Gisela spelled out how she struggles to balance time commitments for athletics and academics, explaining “Since I want to do something else in my free time, I know I am quite occupied in handball, so during the week I am gone a lot. That is a time problem.” She clarified the extent of her athletic participation:

I train by myself three times per week and I have a match on the weekend.

I practice on a team. Then there is also practice twice a week and with that there are more games. So handball and school are my interests.

In contrast, Gottfried does not take part in organized athletics. This allows him to devote significantly more time to prepare for exams than his fellow German participants, noting “It all depends of course on the topic. How well I have understood it, how difficult I think it is. But all in all for a test, from three to five hours.”

The Realities of Academic Achievement

Both the American and German participants revealed that they have been constantly mindful of grades throughout their high school years. They often referenced report cards, grade point average, and class ranking, and defined *success* as something that must align with good grades. The American students shared the methods and extent to which they prepare for national exams, including the SAT and ACT. Likewise, the German students described the importance of the *Abitur* for university admissions. This section contains subdivisions relating to how the students experience competition, how they focus upon grades and measurable academic outcomes, and how they are oriented toward future experiences of college and career. It also includes the students’ characterization of their own talent and work ethic.

Competition

Without exception, the five American students described themselves as highly competitive with respect to both academics and athletics. Ashley responded with initial hesitation, stating “Um, I think—yes I do.” However, she went on to admit higher aspirations:

I guess I’m in the 10%, so I’m definitely competitive among my peers. I mean I don’t wanna put other people down. But I definitely wanna do the best I can in my classes and compared to everyone else. I want to be like above average.

She eventually specified her actual goal concerning class ranking, revealing “GPA-wise? I’m not sure because I don’t know where I stand right now. But I want to be—I guess top five?”

The other four American students offered more direct assessments of their competitiveness. Andrew bluntly affirmed “Yes. Extremely!” He went on to clarify that his competitiveness relates more to athletics than to academics. With respect to grades, he explained:

I don’t really compete with my peers so much. I don’t know. I have this goal that I set that I have to—I don’t feel accomplished if I don’t like pass the benchmark that I’ve set for myself. It’s not really set by anyone else or by where I come in the class. It’s just personally where—how well I do.

However, with respect to athletics, Andrew described himself as hyper-competitive. He provided an example from lacrosse, where he often competes with his older brother:

It's just kind of like this drive that I have within me. Like even in lacrosse practice, my brother and I are on the same team, and there's a drill where they roll the ball out between the two of you and you fight for that ball. Hit the other guy, hit at his stick or something like that. And some people don't always go the hardest, and I just—I don't know—I just wanna get the ball and it's just kind of who I am. I've just always been competitive.

Similar to Andrew, Amelia was happy to announce that she is highly competitive. She replied with laughter “Yes sir! Very!” Amelia went on to describe what she termed friendly competition with Amanda:

I try to keep it good fun too. You know Amanda. Amanda and I help each other a lot. We take a lot of the same classes. Maybe not in the same class together, but we're in the same courses, so we're always helping each other, like, “Hey, if you do this test review, can we compare answers?” So then if we have questions, we can help each other. But there's still good fun going on between us, 'cause we like to strive and say, “You know, if you're setting the bar here, I'm gonna try and do better than that.” But we keep it interesting—like we don't ever get in a fight about it or—No we don't ever do that. She helps me keep my goals

higher, and I think that's really important and I think it's awesome because we're friends too, so it's really helpful."

Amelia also described competition with her older brother and sister, who preceded her by two years in receiving the designation of Cum Laude at Ambrose Academy. She revealed "So I always look at what Alyssa [sister] and Alexander [brother] have done and their accomplishments, and so that's always pushing me to do more." Amelia reluctantly admitted the nature of this competition, explaining "I like to see what they do and I like to try and beat (hesitant)—I guess, what's the word?—*surpass* what they've done, but in like a friendly way." Similar to Amelia, Amanda shared her competitive approach, laughingly admitting that she was "a pretty competitive person" who wanted to "make straight As." Amanda was the only student to state that she wanted to achieve the top academic honor offered at the Ambrose Academy, exclaiming with laughter that "it would be nice if I could be valedictorian or salutatorian." Amanda reported that she was taking the most rigorous possible academic courses, clarifying "I would rather take the harder classes, and not get such good grades than take an easy class and get the highest GPA and valedictorian."

Similar to Amanda, Alice was able to articulate the underlying competition between the top students in the school. Although the school does not officially rank its students for universities, they keep track of grade point average to determine the valedictorian and salutatorian at the end of the senior year.

Because of these data, I was able to identify the top performing 11th graders for my study. Alice was aware of this, stating:

I guess why we were chosen for this was that we're in the top of our class. And I know our school doesn't rank, but I know that we're kind of within the top five kids. So, I mean, I pay attention more to myself and how I'm doing myself, but of course, since I do have a competitive edge, I like to see how I compare to my fellow students kind of in the same area.

I had the opportunity to observe a rather playful form of academic competition during math class. Amelia and Amanda were completing a warm-up problem in the same section of advanced analysis. When the group of five students could not solve the problem immediately, Amelia asked the teacher how long it took students during the previous class period to solve the problem. The math teacher, Mr. Anderson, later indicated that the students often attempt to create this kind of interclass competition. However, in this instance, he resisted taking the bait and asked the students to continue solving the problem.

Comparable to the American students, the German students appear to be competitive academically, though perhaps outwardly to a lesser extent. However, only two out of the four participants were willing to articulate that fact outright. Gisela admitted, "By all means . . . Well I am very ambitious." She went on to explain that she views grades as a means to validate her success:

I think on the one hand that I am motivated because I see it as a confirmation for me. When I receive what I consider to be a good grade, then that always motivates me to study for the next exam. However, if you receive bad grades, then it causes you to feel depressed.

Gisela explained that she is “a very industrious as a student,” and that she would like to maintain her grade point average if possible.

Gottfried also freely admitted that he is competitive with respect to school, declaring “Yes, I want to achieve something.” Concerning his position in the class and grade point average, he explained that “report card grades should naturally be as good as possible. That is the prerequisite for the future.”

Gudrun indicated that she had to overcome challenges during her first years in the Gymnasium, particular in the area of foreign languages, which did not come easily to her. She explained that she often “got things mixed up . . . and found the word order sometimes difficult.” However, for Gudrun, “It was never really bad in school. I just got better and better at it.” She declined to say that she was academically competitive, explaining “it merely comes easily to me.” She admitted to having an interest in grade point average, “but nothing beyond that.”

Perhaps the most balanced of the German participant’s with respect to school and free time was Günter, who observed that his level of competitiveness has diminished in recent years. He asserted, “School is not everything in life.” Günter did not express a particular goal or class ranking or grade point average,

noting “I am not saying that the *Abitur* grade must be so and so. I attempt to put forth effort. What comes out of that comes.” He explained that his academic performance is closely tied to his future college and career goals:

I study to understand the topics. And since I also want to attend college later, and of course, I would like to work for Lufthansa, it is not so simple. You need a definite grade point average or achievement, which you can show. For that reason, that motivates me. I consider school a place for working.

Focus upon Grades and Measurable Outcomes

Similar to the attribute of competitiveness, the American participants demonstrated attention to academic tasks bordering on perfectionism. Amanda and Ashley both admitted that they were perfectionists with respect to their academic work. Amanda spoke specifically of her desire to obtain perfect grades and how a B in history lowered her overall average:

My mom and I were talking about like my GPA a couple of days ago because we got the letter for Cum Laudi and—so we were talking about like what my GPA was. But that grade brought my GPA down for that semester, and so now it’s just (laughs)—it kind of brings it down, and it’s hard to get it up.

Ashley also described herself as a perfectionist, pointing out “I guess it’s just my personality . . . Growing up I was always wanting to be the best—or do the best I

could. Not necessarily *be* the best, but it's always how I've been in school." She related how this perfectionism originated in middle school, where she consistently "tried to get the best grades." She revealed that her mother shares her competitive attitude. However, she clarified that her father has the opposite approach:

He's kind of, "Just go with the flow," and that's always (laughs) stressed me out a little like—doing whatever, but I've always liked to plan and I've always liked following through on things, so I guess I learned it from my parents.

Amelia demonstrates her perfectionism by consistent use of an academic planner, where she prioritizes tasks and methodically crosses them off the list upon completion. Amelia admitted that she is "kind of OCD about things." She enumerated "if I get an assignment that's due in a week or two, I have to start—at least start on it by the end of the week—get something going, just so it doesn't slip my mind. I have a lot of organization actually—terrible! (laughs)." In a written Survey Monkey response, she expressed the intensity of her need to complete academic tasks, stating that "the thought of getting a zero on an assignment, let alone a DBQ [Document Based Question], is terrifying."

She went on to spell out how she relieves anxiety by methodically completing academic tasks so they do not accumulate:

There's not a specific order—a lot of people do their homework based on what class they have the next day, or the class they have first the next day.

But I do whatever I—I get anxious when I—I write all my topics—or my assignments down on my planner, and I get anxious when there’s a lot written down, ‘cause I kind of told you I have to start on long-term projects too. So I do the homework first that I feel like will be easiest, so that I can mark those out, saying, “Hey, I’ve done that.” So like my Spanish homework is usually out of the workbook, so I get that out of the way. Math homework, usually out of my textbook—Get that out of the way. And then save the bigger stuff, like studying for a test and quizzes, right before I go to bed.

Similar to Amelia, Amanda expressed the need to complete academic tasks early:

Yeah, I usually don’t procrastinate. I mean, there will be exceptions if I’m really overloaded one night. Then I’ll be like, “OK,” but even then, I *schedule* when I’m gonna do it, like—maybe not like literally write it down, but like in my mind I know when I’m gonna do things . . .

Generally I’m pretty organized when it comes to those kinds of things, and I don’t like to leave things behind—it stresses me out, like a lot (laughs).

With respect to classroom grades, all five students expressed a desire to not only do their best, but to consistently achieve the highest possible results.

Andrew stated his goal for math to receive an A, but he still has some work to do, noting “This is one of the classes that I’m—that is difficult, and so I’m getting a B and I’m working hard to make it an A.” He received A’s in all of his other

subjects, so this single blemish on his transcript is of particular concern to him.

Like Andrew, Alice described her history of consistently high grades:

I've been getting straight A's since middle school or as long as I can remember, so it's always been that way. I've known that I am competent enough to earn the grades that I do, so I've never really strayed from that.

She shared her current average and her goal for high school, saying "my GPA is a 96 right now and I'd like to maintain that. And then, I'd like to be in the top two kids, hopefully." Equally forthright concerning her focus upon grades, Amanda admitted "Generally I've made straight A's my entire life. I had a B last semester though. It made me sad (laughs)." She went on to reveal "I get upset when I get a B (laughs)."

Of the five American students, Amelia has achieved the highest ranking and expressed a strong desire to maintain that success. She articulated how school provides a venue for her to be successful, professing "OK. So, I love school. I know that's not probably typical for a lot of people. I love the feeling that I get after I do well on something." She described how she has honed her academic abilities over time:

I would say my success as a level has developed, but I would say throughout my school career I've been successful consistently. Always been a straight A student. But, I think over the times, I've developed my

study skills in a way that's helped me be more successful, more efficient, if that makes sense.

Unlike the American students who reported having been always successful academically, the German students indicated a gradual increase in success throughout the middle level (grades seven through nine). Gisela explained:

I was always successful in school. But I think the beginning of the seventh grade was actually not so good because of a change in teachers.

From the seventh through the ninth grades my grades got better and better. And in the ninth grade, I had my best report card, which was 2,2 [on a six-point scale]. So the ninth grade was my best.

As the top student in her graduating class, Gisela is prone to understatement, explaining "I think my grades are quite OK, and for that reason I would say that I have success." Gisela described her view toward grades over time, noting "They have always been important to me. It has not just developed recently." Yet she tempered the significance of obtaining good grades, clarifying "I complete the work as well as I can and am successful most of the time. But if I do not achieve the best result, that is also not so bad." She went on to offer a broader perspective, stating "At that point I will think that I will do better on the next test. In any case, I am motivated by grades." Gisela places particular emphasis on her performance in math because it is one of her two major courses and it is something that she plans to study at the university. She explained that she is

driven “simply by the ambition to solve problems, to demonstrate strategies, and to develop logical thinking.” She admitted to seeking a good grade also in history, but added that she also wants to “have fun during the learning process.” She was quick to clarify that between having fun and obtaining a good grade, the more important was “Uh (pauses)—the grade.”

Gudrun concurred with Gisela’s view concerning the importance of good grades, asserting “I think that success should certainly be defined through grades.” However, she clarified that success can be defined in broader terms, noting that “there are people who are perhaps successful without necessarily earning good grades.” Gudrun explained that her own level of competence is evident not only because of good grades, but “one can at least see that if they have or have not understood something.” She clarified her views concerning grades, pointing to possible negative effects of poor grades on students:

I find grades in general actually good, because you know where you stand. But there are also subjects in which one is not so good. And sometimes the grades demotivate also, particularly if students are a little worse. Then they get those grades and find themselves under pressure so that nothing else really works. And that is a little silly.

In Germany, grades have traditionally been administered on a six-point scale, with One being the highest and Six being the lowest. In recent years, many upper schools in Germany have implemented a 15-point scale with reverse values.

Thus a 15 is the highest possible score and a One is the lowest. The purpose of this change is to create more spread in report cards, which eventually makes the college entry process more precise. In the following accounts, students refer to both grading systems and I will note the specific scale parenthetically.

Like Gisela, Gudrun expressed the double goal of “attempting to get a good grade average and to also have fun” during history class. She clarified that to meet her goal in history of receiving 13 points out of a possible 15 (new upper school scale) requires “hard work.” She added that she “will attempt it (laughs).” Gudrun added that the benefit of a high grade point average is “to make it simpler to obtain a place at a university later on.”

Gottfried shared the view of the other German students regarding the importance of grades, stating “I think one should naturally have good grades. That is the primary goal.” He also defined success with respect to participation with classmates, noting “Success would also be working together with fellow students, should we be asked to complete group work.” Gottfried admitted that his level of success depends upon the subject, explaining “I think I am more competent in some subjects than in others. Right now I am better in math than I am in biology.”

Gottfried revealed that his grade in biology is only a 10 on a 15 point scale (corresponding to a C in the United States), explaining “That is the worst grade that I have on my report card.” He characterized a dual motivation, clarifying “I

would like to receive good grades. And the motivation also relates to one's future in life." He reported how he prioritizes the time he devotes to history and math:

In history, I would also like to receive good grades, but it is less important to me than receiving good grades in math. If there were history and math exams scheduled on two consecutive days, then I would study more for math than for history (laughs), because math would be more important. It is my major course.

Similarly, Günter has always been successful in school, clarifying "Perhaps better now, but approximately at the same level . . . But I think that my grades have always been under 2,0 [on a six-point scale]." He declared the importance of grades, stating "Good grades—that is the main goal." However, he clarified "More important still, I think, is that you learn something and you can bring it along to your universities studies. It is not worth anything if you receive a One [highest grade] and you do not understand anything." Like Gottfried, Günter prioritizes the time and effort that he devotes to his major and core courses:

I study now for specific subjects. But I don't spend the entire day studying. Rather, I simply do my homework, study well for the tests. But I do not complete an unnatural amount, because in the afternoon, after I have studied, I take part in sports and do things for the entire afternoon.

Günter admitted that his grade in math, which is a major subject, is "between a One and a Two [A minus in the United States]." With respect to history, which is

only a core course, he indicated that he is comfortable with a less than perfect grade, noting “a Two is completely satisfactory.”

With respect to graded tasks, the German students expressed the attitude that they would complete even uninteresting academic tasks if they were assigned by the teacher. In Survey Monkey responses, Günter indicated that he completed assigned tasks “because it was content of the course.” Gisela expressed similar justification for completing her assigned tasks, explaining “I completed the assignments because my teacher required it of me.” Gudrun voiced comparable sentiments, stating that she completed an uninteresting task “since we were required by our teacher to complete it, and to later report the results in class.” Gottfried explained that he completed uninteresting academic tasks with a view toward long-term benefits, clarifying “I must receive a good degree in order to attain a good profession later in the future.”

Another aspect related to measurable outcomes in the German data was the students’ approach to class participation. Unlike in the United States, where class participation has minimal direct effect on a student’s grade, in Germany teachers place particular weight to how students participate in class. According to Frau Grünewald, a history teacher at the Goethe School, students receive a participation grade based upon the quantity and quality of their in-class responses. The quality of response relates to the extent to which the students’ comments

push the class discussion forward. At the Goethe School, participation represents roughly 50% of the overall grade for major subjects (60% for other courses).

While Frau Grünwald advocated the system of rewards for class participation, she also expressed the hope that her students would achieve a “love of knowing” [*Wissenslust*], which represents a more altruistic or intrinsic orientation toward learning. For students, class participation represents an opportunity to enhance their grades and offset their scores on tests, which are typically weighted at 50% of the total grade for major subjects (40% for non-major subjects). The students brought up their level of participation and volunteering often during the interviews. Günter clarified that he participates more often in math class, a major course, than in history. He also noted that he had participated more in history during the previous school year:

This year I am not so good in history. But last year I had a really super teacher. At that time I had proper ambition. I volunteered often. And that was a good class. But this year, it is somewhat different.

Gudrun also strives to participate actively in class, explaining “I volunteer actually quite a bit. I always strive to participate just to get good grades.” Gisela noted that students can best receive feedback from the teacher “only when we actually volunteer in class or when our answer is correct or incorrect.”

Gottfried mentioned regular completion of homework and strong class participation as ingredients to his academic success. With respect to participation,

he noted “Of course I would like to contribute as much as possible orally to receive a good grade.” Clarifying his rationale for participation, he explained “I want to make a good impression on the teacher.”

Future Orientation Toward College and Career

The American students frequently mentioned rather vague terms such as *the future* or *a situation* to justify their current endurance and work ethic. They also revealed a more tangible concept that occupies their thoughts, the thoughts of their parents, and the thoughts of their teachers: *college*. All five students share a long-standing goal of admittance into a top-tier university. Their preparation relates to specific aspects of their college applications, including grade point average, teacher recommendations, college essays, community service, extra-curricular resume, and standardized test scores.

Although university admissions officers look closest at GPA and class ranking, colleges have minimum standards for SAT and ACT scores that prospective students must meet. The students spoke to the significance these tests, along with SAT Subject Tests and Advanced Placement Exams. Ashley spoke of her preparations for the ACT test, which was scheduled a few days after her interview for this study, reporting “Well I’m actually taking the ACT on Saturday, so they’re pretty important. And I’ve taken an SAT, so they’re on my radar—They’re pretty apparent (laughs).” She revealed that her score on the SAT was slightly below the requirement for her top college choice, noting “I think I

wanna do better, definitely.” Likewise, Amelia was not yet satisfied with her scores, admitting “I’m still kind of on edge about those. I need to start preparing more so I can raise my score from previous.” She clarified that “AP exams are very much on my radar right now (laughs). . . So I’m pretty anxious.” Alice was also scheduled to take the ACT and considered herself to be on more solid footing with respect to the SAT, explaining “I have taken an SAT and my scores on the SAT are comparable to what I want for the colleges I want to apply to. So I’m not worried about those anymore.” Amanda has established a complete strategy for the SAT and ACT, along with SAT Subject Tests in math, American history, Spanish, physics, and biology:

I already planned out when I’m gonna take like the SAT/ACT. I’ve already taken the SAT and ACT once—Well, I’ve taken ‘em twice, but one time I took the SAT in 7th grade. It was for like the Duke-TIP thing [Talent Identification Program]. And then I took the ACT freshman year, and then I took the SAT, like again this year and the ACT last fall. And so I’m planning on taking both of those again in the summer and then in October, just so I can do it one more time—And then also with subject tests, I’m gonna take those.

Of all the students, Andrew revealed the most specific goals with respect to the college entrance exams. In addition to describing his plan to take the SAT

Subject Tests in US history and physics in the next several weeks, he detailed his aspirations with respect to the general SAT:

I got back my first SAT that I took in January and got a 2040 on it. And I was OK with that. I wanted to do better, 'cause I got a 218 on the PSAT, and I feel I should go better on the SAT just since I've learned more since then. I don't know. Maybe it was just nerves for the first time taking it. But very much on my radar. I'm scheduled to take the SAT in May and the SAT and ACT in June. So—gotta get all that done . . . I wanna get like 2200.

The significance of these national exams to the participants is clear, based upon their early and extensive preparation. Ashley plans to study for the SAT after she completes the ACT, noting, "I might just get the practice test so I can study with it." Ashley, Andrew, Alice, and Amanda all have taken some type of PSAT or SAT review course. According to Alice, "It was private lessons, so they're two hours, and it was just maybe every two weeks. I went to about four or five classes." In keeping with their aforementioned study routines, most of the students preferred to work independently, learning through reading and taking practice tests. Amanda explained "I mean I just do the practice stuff rather than going and seeing a tutor for it." Amanda went on to detail how college has recently been on her mind:

Recently a lot more than I have in the past. Just because it's kind of getting towards the end of junior year. And so, we've been discussing like "What do I like in college? What am I looking for? Or what kind of situation do I wanna be in? Do I wanna be rural or in a city?" And so I've had to start thinking a lot about what my interests are.

Similarly, Alice spoke with animation about her excitement to enter college for the opportunity to meet new people and focus on her chosen academic major. However, she tempered her comments by admitting that she would miss her present school, clarifying "I wouldn't say I'm excited about leaving, but I am excited about going off and doing new things now, 'cause I'm so used to this community." Ashley also expressed a desire to "leave Ambrose Academy and this atmosphere" so that she can "try something new." She revealed an aspiration for less structure and more freedom during her college experience, admitting "I'm kind of (laughs) getting burned out a little of like the same routine." She went on to elucidate why she devotes such energy to obtaining outstanding grades and test scores while in high school, declaring "I wanna be able to choose—like when I think about college, I wanna have the option to go to different places and not be stuck in a situation that I don't wanna be in." Amelia expressed comparable sentiments in more general terms with respect to her future orientation:

I like knowing that it's going to pay off in the end. That's part of my self-initiative. Like why I apply myself, because I think if you put in a lot of

work now, you're gonna get a lot more benefits later. And so I love knowing that I'm helping myself right now.

Just as the American students demonstrated a strong future orientation with respect to college admissions, the Germans exhibited an acute awareness of the *Abitur* exam and its implications for their future. In addition to thoughts of the forthcoming *Abitur*, the German students were more mindful of their eventual careers than their American counterparts. Gisela expressed how her focus on college and beyond has recently increased:

I think now, because I am in the Introductory Phase, it is now a short time until the *Abitur*. And because of that, receiving a good *Abitur* average motivates me the most. It is now very important and allows us to be successful in life, so we can find a job, and I think that creates greater pressure.

She clarified her awareness of the *Abitur* and its level of rigor, noting "I haven't had so many thoughts about the *Abitur*. I think it is quite difficult, but you can do it. I would like to do as well as possible."

Günter also has the *Abitur* in his sights, and explained his views with respect to its national utility, stating "I find it meaningful that we have it. Throughout Germany there is the same *Abitur*. So one can simply compare students and this can rank students for jobs." He described how he is just starting to formulate his study plan:

I think I will start studying rather early. I will also keep this review sheet that I am making because it contains content from the *Abitur*. It will help me study when I try to get it back in my head again.

Gudrun explained that the *Abitur* functions as a type of long-term motivator, noting “It just motivates me because later I want to study at the university . . . And for that I want to achieve a good result in the *Abitur*—Yes, that actually motivates me (laughs).” She added that “for studying at the university the average score on the *Abitur* is quite important, and therefore one is under more pressure with the *Abitur* than with a normal exam.” Gottfried also acknowledged the long-term significance of the *Abitur* for him and his parents:

My parents naturally have a certain expectation. But that is not currently my main motivation. I think it is simply important for the future. I want to do something with my life and I naturally need good grades as a prerequisite.

Gottfried also expressed the social value of an assessment like the *Abitur*:

I think that different Gymnasien have different levels of achievement. And it is nice when you recognize that with the *Abitur*. The *Abitur* is centrally administered so that everyone answers the same questions. So it is a good measure of comparison.

He expressed that his performance on the *Abitur* will have direct effect on his career, stressing “To prepare for a good job in my future I must, of course, get a good diploma.”

Self-Perception of Talent and Work Ethic

As the litany of study routines, paired with descriptions of high academic goals illustrate, the American students have developed and refined highly personal systems that allow them to successfully overcome substantial academic demands. If sustained discipline and effort represent one side of the equation representing academic excellence, the other side consists of talent and an innate capacity for learning. The ease with which they negotiated the interviews confirms their linguistic dexterity and mental endurance.

According to the five participants, they share the perception of an advantage of inborn talent, which means that they can complete academic tasks of higher quality in less time than their peers. Ashley observed how digesting academic material comes without difficulty for her, noting “I think the concepts come easily.” However, she was quick to explain that she still had to work hard, noting “If I want to know the details, then I need to study for that.” Alice explained how her memory is an asset, pointing out “I think I’m good at memorization, and when I read history textbooks, I can remember things that I’ve read.” She described how her memory is of particular value in English class, explaining “I can remember specific lines of things. Memorization of vocab

words is a little harder for me, but when I read something once, I grasp it and can remember it really well.”

Similarly, Amanda acknowledged that her success is due to a combination of innate talent and diligence:

I think that I’m a pretty naturally talented person, which sounds a little cocky. But (laughs) I’m pretty naturally talented. I do try a lot—a lot of people call me an overachiever because I always work hard and put in a lot of effort when I do things. I don’t generally do things minimum level, like “Oh, a paper is due next week,” like I’ll start doing it—I won’t wait ‘till the day before.

In a similar manner, Amelia attempted to demystify her academic success by calling attention to her work ethic, which is often unseen by fellow students:

I think it’s a lot of self-initiative. A lot of people think that just because I’m quote unquote like “smart”—I guess is what they would call it—that everything just comes easy. And it doesn’t, ‘cause they don’t see a lot of the outside work that I do.

She went on to articulate the sacrifices she makes to be successful and how she often asks for teacher assistance when things do not come easily:

Like on the weekends, I don’t go out every weekend (laughs). Well, I go out, but not every night of the weekend. I do a lot of extra work if I don’t

understand something. I go in for extra help, ask questions in class, and apply myself in class. Make use of the time that I have.

Similar to the American students, the Germans in the study expressed that learning comes quickly to them compared to their classmates. Gisela explained this advantage, reporting “I think math was easy in the beginning. And now I need to work a bit harder. It is fun to solve more complex problems.” She explained that she possesses both talent and a strong work ethic, stating “On the one hand, I have the ability to understand the instruction well, which is an advantage. However, it is also because I prepare.” Gisela reported that she has particular ability in math and writing, explaining “I have always had talent for it—for logical thinking. And German because I really like to write.” She also noted that she possessed talent for acquiring foreign languages. However, she was disappointed that she could not select Latin as one of her two major subjects because of insufficient enrollment. She listed three qualities that allow her to be successful academically, including “industriousness, ambition . . . and perhaps discipline.” Similarly, Gudrun attributed her academic success to a combination between innate talent and effort:

It comes easily to me. I don't study excessively. Naturally I study what we have learned prior to exams. But I don't learn it by heart. After reading it through three times, I can recite it back. For that reason, it just comes easily to me.

Gottfried suggested that his relatively high grade point average was due to his consistent completion of homework and a natural ability to digest and remember information, adding “I think I can understand things quickly. I am good at learning and recalling concepts. I can understand things fairly well, and I think with that I will be able to achieve something at the university.”

Günter mentioned that he has natural ability in specific subjects, explaining “I do not find math to be difficult. Physics and chemistry I understand immediately. But there are also difficult subjects.” He added that when he does not understand something he receives help from his mother, father, and grandfather, explaining “I simply have ambition to learn something. And I also receive help, for example when I don’t understand something, then I can ask my family. I get support from them.” He also mentioned that his success has something to do with natural intelligence. However, he was quick to admit that he is less talented in certain subjects, such as art.

The Realities of the Classroom

Although the American and German students revealed similar study routines and a common goal of attaining university acceptance, the way that they experience school is a point of disparity that delineates cultural and systemic differences. The following section is divided into three subsections concerning how the students feel about their school, how they relate to their classmates, and how they experience learning in the classroom.

Connection to the School

The American students revealed strong sense of loyalty and connection to their school. However, their words also revealed a tension between thoughts of college in the future and a desire to enjoy their remaining time at Ambrose Academy in the present. Three of the five students Amanda, Alice, and Andrew, have been designated as “originals,” meaning they are among the 45 students in their graduating class who have attended the Ambrose Academy since kindergarten. Amanda was quite complimentary of the school, detailing the sheer amount of time she has spent on campus during the past 12 years:

I like it a lot here (laughs). I honestly couldn't imagine being somewhere else. Of course, I'm sure everyone always says that, but this really is kind of like a second home here. I think I've spent more time growing up here than at my own house. So, because I've been here since kindergarten, five days a week, and then here up to 14 hours a day, like when musical time hits, 'cause I have sports and then musicals, I'm here a lot.

Alice asserted that Ambrose Academy has a positive and welcoming culture. However, she reflected “Since we don't know anything else—not that we've gotten tired of it—but we've gotten so used to this system. Maybe when we leave for college, I don't know how much our college readiness will compare.” While touting Ambrose Academy's relaxed atmosphere, Andrew cautioned “You don't see us when we are studying or cramming for tests or anything like that.”

Ashley echoed the sentiments of the three “originals” concerning the school culture. However, she stressed the academic rigor compared to that of the neighboring public schools, stating “I like this school. It’s definitely tough, depending on the classes you take and the workload you have.” She related that Ambrose Academy compares favorably with the area’s public schools, explaining “When my friends in public school tell me what they’re doing and the amount of work they have—it’s like not as intense compared to this, but I think it’s more beneficial in the end, because I learn more.”

Another relative latecomer, Amelia was also unequivocal in her admiration of the school, exclaiming “Ambrose Academy? I love it!” However, she cautioned that students must avail themselves of the opportunities that the school presents:

A lot of people don’t take advantage of the resources that we have here. But that’s why I’m here. I think it’s easier to say that a lot of people who have been here since kindergarten are kind of ready to leave at this point. But I’m loving every second of it actually (laughs). It’s an incredible school. Incredible teachers and they give you the study skills to be able to be successful. And I love it (laughs).

Although they described a harmonious school environment, the German students expressed less connection to the school than their American counterparts. Gisela articulated this attitude, noting “I like to be here in this school. I think that

it is a good school. I am simply happy to be here.” She added that she finds the “structures and the organization” of the school to be positive. Gudrun initially focused her evaluation of the school on its physical attributes:

I just find it nice that we have a bistro here, because then you can get some warm food when you want . . . Our classrooms are actually relatively good compared to those in other schools. And we have the park. Most schools also don’t have that.

She added that the school’s orientation (or qualification) phase allows flexibility in selecting a major:

I find it actually good because of our Upper school system—the course system. In other schools they do not have the Qualification phase. At this point we can look and see if the major subjects that we selected fit or not. And I think that is a big advantage compared to other schools.

Günter expressed similar sentiments about the school, with a minor reservation, noting “My general impression is good. But there are exceptions—particular teachers with whom I do not get along.” Gottfried expressed a less glowing appraisal of his school:

It is not as though we love the school (laughs). There are a bit too many time constraints, and sometimes it is too tense. But I know that I have to go here. I am of course required by law to attend school. But on the other

hand, I want to make something out of myself. And for that reason I have to go here.

Although the German boys and girls seemed to disagree concerning their assessment of the school, they shared a distain for the afternoon classes that are required two days per week. Gottfried expressed his resignation to this practice, explaining “We have rather long school. But I think every school has that, so you really can’t change it. So when you have eight hours of class, then you just have to accept it.” Günter concurred, clarifying “One hour on Fridays is OK. But the two hours on Thursday afternoons last a bit too long (laughs).” Gudrun also complained about her two afternoon classes, offering “We have long school two days per week. And then I get home relatively late and still have to do homework. I don’t always find that so great (laughs).” Gisela looks forward to her classes with one exception, explaining “Well, except for Thursday afternoons (laughs). . . . I don’t really like that. I would prefer to be home at lunch with my family.”

Connection to Classmates

The relationships between students at Ambrose Academy seem to have been strengthened by the common goal of surviving the rigorous AP courses. The top students have formed a type of school within a school, since they have shared the most challenging courses for years. Alice explained that she finds it comforting to have her friends in such close proximity “and just being able to be

with them—talk to them throughout the day.” Similarly, Amanda seems to relish the time she has at school with her friends:

And then socially, I mean, of course, seeing all of my friends, because—can’t see ‘em all the time over the weekends or during breaks or anything—so it’s nice to just have a friends-base here or whatever, and I know like, when I go off to college and stuff, then I’ll still have these friends and stuff.

Like Alice and Amanda, Andrew has attended Ambrose Academy since kindergarten and spoke enthusiastically about the strength of his peer relationships, declaring “The people I’ve met here are some of my best friends . . . It’s been cool to see all of us kind of grow up together.”

Although Ashley entered Ambrose Academy in the seventh grade, she has formed strong friendships at the school. She suggested that the competition and stress during the school day has not soured her relationships with classmates, insisting “I get along with everyone pretty well. I’ve never really like got into a fight with a kid or a teacher. So I have pretty good relationships (laughs) with everyone.” Amelia joined Ambrose Academy in the ninth grade, and had relatively more glowing things to say about her fellow classmates, proclaiming “My peers. They’re hilarious (laughs).” She described her transition as a relative latecomer to Ambrose Academy:

I think I fit in pretty well here. I have a pretty easy-going personality. It was kind of hard at first adjusting—‘cause these kids have been together for so long—and that was a little rough. But they’re really welcoming and I’ve established my—I don’t want to call it “territory,” but like my comfort zone. And so I feel like I have been going to school with them since I was in kindergarten. They’re—Love ‘em!

Amelia noted that she feels much more connected and comfortable at Ambrose Academy than at her previous public school, observing “My classes were so big . . . Socially—the kids were really spread out. There were some *interesting* things going on there that I just didn’t want to be involved in.” Later, during an out-of-town lacrosse event, Amelia’s expressed her sentiments toward both teachers and students at Ambrose Academy in a written response on Survey Monkey:

Here I'm with my fellow classmates and a few teachers. They're like my family. Even at school, I feel the same way. We're all working hard, whether it be in playing lacrosse or completing different assignments. More importantly, we're all having fun and making the most of every situation. Maybe that sounds cliché, but it's true. So many aspects of our lives revolve around school, and we spend so much time together that we don't have to worry about feeling uncomfortable around each other. That bond makes things easier.

Just as the German students expressed only moderate praise toward their school, they described positive, though not glowing relationships with their peers. Gottfried expressed this qualified view, explaining “I get along well with my fellow students. It is not necessarily as though I would meet with every fellow student in the afternoon and play basketball or something. But I already do that with several of them.” He described how he occasionally gets frustrated when his fellow classmates fail to participate in class:

If the teacher asks a difficult question and no one volunteers an answer, and they just sit there—They should just say what they think. I always think, “OK, what do you have to say now?” And that is the only unpleasant moment. But otherwise, it is actually all good.

Günter also expressed a positive, though moderated view of his connection to classmates, noting “Actually I get along well with most of them. I also have found many friends at this school. And I play sports with them.”

Similarly, Gisela articulated a mixed view of the relationships at school:

To some extent the relationship to teachers and fellow students is distant. However, with some teachers we can really have fun. It varies. In general, the teachers communicate a lot with us as students, so that the mood is actually always quite pleasant. However, I would not describe it as harmony.

She also explained how this year's transition away from the homeroom concept has been challenging:

I find the sequence of courses better when you have a firm group and a person to lead it. Now we partly do not have this, because we are together with different people. However in the major courses, which we have much more often during the week, in that group you feel good for the most part because you know everyone.

Gudrun also offered a balanced appraisal of her social connection to the classmates, explaining "Right now we have to get to know everyone. I get along quite well with the teachers and the students. And as I said, I have my best friends—everyone has those actually." She then tempered her comments, observing "Of course there are those with whom I get along better than others—and those with whom I don't get along."

Another point of agreement with the German students concerned their relative enjoyment of group work. Günter explained his preference for collaborative learning, noting "I find it good when we work in groups and do not always have instruction from the front of the class. In general, I prefer for it to alternate." He described the type of group assignment that is common in his classes, explaining "Well, different topics. We have some kinds of sheets or books, and then we develop something relating to the topic and some kind of visual Short presentations. Just one to two minutes." Similarly, Gottfried

described a small group project for religion where students “worked together to represent a story from the Bible in the form of a comic.” Gisela also expressed enjoyment in the social aspect of group work, reporting “It is also interesting to work together with interesting people on group assignments. I like to work in groups because it makes learning more fun.” Gudrun explained that she likes to work with fellow students and by herself, noting “I would say I really like doing group work. However, I also like individual work.” She described a recent example of a group assignment from German class, explaining “I created the poster that we were assigned in German class and had to make a short presentation. It is a group assignment and I offered to make the poster because it is fun.”

Classroom Experiences

To illustrate how the American students’ learn in the classroom setting, I describe lessons in Advanced Placement US History, Advanced Mathematical Analysis, and Advanced Placement English Language. I observed the History course during two subsequent class periods prior to having met the student participants, so I had the teacher point them out to me. The teacher, Dr. Aldridge, has taught for 41 years, including 34 at Ambrose Academy, and has gained the reputation as one of the school’s most challenging teachers. I observed Amanda and Ashley in the first period and Alice in the second.

By the time the first period bell rang, 10 of the 11 students had already taken their seats in a circle, which contained chairs and two couches. Students sat with large history texts and notebooks on their laps. The walls contained old posters and photos that could very well have been up for decades. As class began, Dr. Aldridge warned a boy to resist falling asleep during class, which apparently was his custom. According to Amanda, “He falls asleep every single day. . . . For real, every single day (laughs).” After this preemptive strike, the teacher stood at the front of the room and initiated a system of Socratic questioning relating to the difference between politics and economics. Rather than calling on specific students, she only acknowledged volunteers, which is her typical practice. She later explained “I just would prefer people who would want to participate. . . . I don’t want to put people on the spot who are maybe just simply shy.”

After a few minutes, it became clear that the purpose of the Socratic questioning was not to introduce new historical material. Rather, it was Dr. Aldridge’s introduction to a 30-minute rant relating to a recent set of essays that she was about to pass back. Apparently, the majority of students in the class had misread the prompt and failed to reference both economics and politics in their responses. Dr. Aldridge unleashed a sustained barrage of insults that left all of the students in distress, wondering if she was referring to their essay. Her diatribe commenced swiftly, declaring “You write this gibberish!” But she also clarified “And I am not trying to make you feel bad.” She offered a not-so-subtle warning

concerning plagiarism, explaining that “if you quote from the textbook, that’s not very sneaky.” Subsequently she admonished the group, asserting “I think you are lazy mentally.” Often referring to the looming AP US History exam, she exclaimed “We have a month!” These volleys to the entire group certainly created tension. However, she directed some of her remarks to individual students. For example, one boy had written that “World War II was the greatest war.” Dr. Aldridge publicly admonished the young man, warning “Don’t make such a stupid comment! Stick to what you know!” Then she resumed her tirade to the entire class, inquiring “How smart is it if you can’t follow simple directions?” Before students could answer, she launched into an attack on the overuse of clichés in their writing. However, she was not above throwing in a couple of her own, such as: “Some of you can’t write your way out of a paper sack,” and “This is a sad commentary!” Then, without sarcasm and with a little disgust, she lamented “Quite frankly, some of you don’t write very well. I don’t care what they accept in the English Department.” Just prior to passing back the papers, she declared “Only one person, Allen, was able to connect the Cold War to the political situation.” And finally, “Almost everyone in the other class period got an A.” She passed back the essays as the bell rang. Some students celebrated and some hung their heads. Dr. Aldridge wished them all a happy weekend.

After the five-minute passing period, a group of nine students entered, including Alice. The mood in the classroom was positive, relaxed—even jovial.

Students visited with each other prior to the beginning of class. Dr. Aldridge briefly mentioned how badly the previous class had performed on their writing assignments. I settled in for another onslaught of insults directed at the students. However, she merely stated that “students who do not follow the prompt receive a One” (the lowest score on a scale of 1-9 on the AP US History writing sections). She then proceeded with the lesson. This time she was seated in the circle and engaged in playful banter with the students as they discussed potential projects to be presented at a school-wide event. There was a high level of student participation, often initiated between students as they brainstormed and revised their proposals. As she released them at the end of the 45-minute class period, the students seemed very happy and content with the lesson.

Immediately after Dr. Aldridge’s second class, I had the opportunity to interview her. From this conversation, I gained understanding of the rationale of her instructional approach. She noted that the two class periods could not have been more different, admitting “I was mad at the A Period.” She explained that “the *intensity* of the talk was aimed at the kids who made 70s. I mean, they knew who they were. They *knew* I was talking to ‘em.” She clarified “I don’t think they were intentionally trying to bamboozle me” by ignoring half of the writing prompt. Concerning the directness of her speech, she stressed “I was *kind* to them when I said it was an honest mistake that they were so bad (laughs).”

Describing her motivational techniques, she noted “I use everything.” She elaborated with understatement, saying “I can occasionally be very entertaining (laughs) . . . I made it *entertaining* on purpose (laughs).” She described the level of effort that she consistently demands of her students, explaining “I make them work hard. But that’s just part of the AP deal. . . . I don’t allow them to whine. I tell ‘em they can’t complain. I tell ‘em, ‘I don’t care. Don’t whine!’” She emphasized that she does not get upset when her students fail to complete their assigned history reading, declaring “I just give ‘em quizzes and they fail them (laughs loudly).” She explained that “kids around here live and die” based upon their grades. Dr. Aldridge went on to describe her firm policy, asserting “I won’t discuss their grades. I mean, I won’t go over grades. If they get a grade on an essay, I don’t discuss it.” She clarified further, stating “I never will haggle a grade with them. They just have to take it.”

She reported that she never reteaches material that students do not initially comprehend from her lessons, stressing “Oh no! It’s over.” Comparing her method to that of other teachers in the school, she emphasized:

Lots of teachers would never have been that intense about telling them how *bad* they were. I mean, I told them they couldn’t write well and they couldn’t do this and their papers were terrible and . . . there are very few teachers here who would tell that to a group of kids. . . . I very rarely ever

yell at them. And I really *do* tell them the truth. I mean, I don't sugarcoat anything (laughs).

She explained the perspective of her students, saying "I think a lot of them want to *do* well. . . . I think they perceive that I can *prepare* them well." She further described how she has established "a reputation for being able to prepare the kids to do really well."

Dr. Aldridge also revealed another side of her motivational technique, including frequent praise and occasional rewards in the form of a night free of homework. She also displayed insight into the unique attributes of four of the five students in this study. She related how her best students, like Alice "sometimes need a lot of reassurance that they're doing OK." She further explained how well she understood Alice's work ethic, stating that "she's very anxious. She'll do an assignment before I've assigned it. Or she'll do an assignment three days ahead of time." She also revealed how Amanda was not successful at the beginning of the school year, and how she "chewed her out for something. And the minute I chewed her out, she just turned right around and does really well."

She suggested that Ashley's relative quietness in class does not necessarily imply a lack of understanding of the content:

Ashley doesn't *say* much. I would never call on her. I would never put her on the spot. . . . Part of the reason is that some of the sharper kids are

extraordinarily shy and will simply say nothing. . . . You have the kids who, you know, are very verbal and outspoken, and so obviously you get *that*, but it doesn't mean the kids who are quiet aren't getting it. And sometimes the kids who do the most talking (laughs) actually aren't really getting it. They just like to hear themselves talk (laughs)."

Dr. Aldridge expressed respect for the diligence of her students, reporting "They very rarely ask me for special privileges." To reward her students' efforts in class, she permits "little celebratory parties." She described how the students occasionally bring food and subsequently sit quietly and watch historical documentaries with great interest. She explained that "a lot of teachers would just shun their noses at parties. Well, I get the yelling part, 'cause I allow a party or two (laughs)."

Within the History class, I observed a range of participation and engagement from three of the participating students. Of the three students I observed in History class, Ashley was by far the quietest. However, she later explained that she exerts influence by being consistently prepared for each lesson. During much of the class I observed, Ashley sat quietly and without emotion, occasionally yawning and constantly taking notes. She subsequently explained her typical level of participation in that class, clarifying "Most of the time I do—that day was a little overwhelming." She added "I'm definitely quieter in class as compared to most people, but if she asks questions about the information that we

read the night before or something, then I'll normally answer a question or two."

She further explained that she must often rescue her fellow classmates by volunteering to answer Dr. Aldridge' questions because "some students don't read at all."

In the same history class, Amanda also had little opportunity to participate directly in class. However, throughout the lesson, she was animated, often laughing at Dr. Aldridge' sarcastic comments. Amanda later clarified that she participates frequently in history class on most days, noting "I usually participate a lot. I ask a lot of questions a lot of the time, because history is something I haven't been well-versed in until this year." She added that she would be frustrated if she were a quiet student and not comfortable answering questions:

Like Ashley is so shy. But she's so sweet and she's really smart. And I know she has questions, and I'm like "How can you just sit there and (laughs) not say anything?" 'Cause she's just not a very talkative person like I am (laughs).

Amanda confirmed that her classmates rarely complete the assigned readings for history, saying "I'm like one of the only people that actually reads (laughs) . . . There's only like maybe three or four people who actually read—maybe."

In the following history period, Alice found herself in the center of most of the class discussion. Prior to enrolling in the course, she had "heard stories from upper classmen about how scary Dr. Aldridge is and how hard her class is."

However, she explained “Once I got used to it, I’m not really afraid of it at all anymore or stressed out about it.” During the class I observed, Alice offered several potential presentation ideas, which were evaluated by class members and Dr. Aldridge. Alice’s demeanor was relaxed as she frequently joked with students, offering her own suggestions for their research topics as well.

During an advanced mathematical analysis class, I had the opportunity to observe Amanda and Amelia in action. The two girls, sitting side by side near the front of the class, represented approximately 85% of the class participation. They were either at the board working problems or suggesting answers from their desks. They both demonstrated the habit of thinking out loud while the rest of the class was quietly working on a problem. The two asked frequent confirmatory questions, either to the teacher or to each other. They were completely invested in the lesson, and their smiles, laughter, and public self-talk were all directly related to the teacher’s lesson.

Amelia later explained her motivation for participating throughout the class:

I like knowing the answer (laughs). I like asking questions because it bothers me not getting to the answer as quickly as possible. Or like if people just sit there and they just stare at the problem, rather than thinking of ways to solve it, I find that bothersome, so I constantly ask questions,

like, “Hey, is there anything else you can tell us? Is there any missing information? Is there even an answer possible for this?” Stuff like that. Amanda expressed a similar justification for why she tends to be such an active participant in class:

I’m a pretty vocal person. I’m not like shy or anything. I like to assert like my opinion and I like to ask questions. And so I think that my curiosity and my talkativeness—if that’s a word (laughs)—loquaciousness—I think that is just a big factor. And I think mostly the curiosity. Because I don’t like to just sit there with a question and not have it answered. That bugs me so much. I’m like (laughs), “I wanna know!” ‘Cause like I’m *curious*.

In a second section of the Analysis class, Andrew took a similar central role. Within the 45-minute lesson, he spent roughly 20 minutes at the board, working problems for the class. Like Amanda and Amelia, Andrew articulated his inner monologue while attempting the problems, such as “I think I can solve it.” Or “I used it right this time.” While talking from the board, Andrew realized that he had made an error in his calculation. Recognizing the error, he exclaimed “Oh my gosh!” Then he casually joked with his classmates, adding “Trying to slide one past you.” When he was finally satisfied with his answer, he reassured his classmates, saying “I triple checked it.”

I also visited an AP English Language class attended by both Andrew and Amelia. Andrew was just as engaged as he was in math class. At one point, the class was stumped on the meaning of a legal term, so he looked up a definition on his iPhone and read it to the class. During student presentations, he asked questions, joked about a student's misspelled word on a Power Point, and volunteered to write the titles of the next day's presentations on the board. Andrew later explained, saying "I try to participate as much as possible."

In the same English class, Amelia was the first student in the room and remained the center of attention for the entire class period. Early in the class period she clarified how the class was to take an online quiz. When the English teacher asked about the edition of a novel they were currently reading, Amelia held up her copy of the book. Her group was the second to present on that day, and she was the recognizable leader of that group. She spoke first, directed her groupmates' activities, occasionally clarified and expanded upon their points, and even took the lead when they had technical issues with the computer. Throughout the presentation, Amelia knew all of the material, speaking from her head rather than from note cards or by reading from the screen. At one point, she explained to the class the difference between the terms *acquittal*, *exoneration*, *censure*, and *impeachment*. She later observed that she likes to take an active role in class because many of her classmates "don't do their homework, so they don't really help with the conversation." She related how she becomes frustrated when her

classmates' lack of preparation leads to digressions and a waste of time, suggesting that "they'll be asked a question and they'll say something that doesn't really apply and then you know they didn't read and we get off topic, and it's kind of bothersome."

To elucidate the experience of the German students in the classroom, I present accounts of my observations in calculus and Spanish classes. The four German participants shared a common math class, which was taught by Herr Gärtner. Since the students are in the upper school, they no longer have a fixed homeroom teacher. However, Herr Gärtner is their major subject teacher and functions as *Tutor*, taking on some administrative duties.

The class took place in one of four portable rooms that the school added in 2006. The walls were sparsely decorated with a small map of Paris and a single cross. Since teachers in Germany rotate from room to room and the students remain, the classrooms essentially belong to the students. They are responsible for keeping the room clean and making sure the rows of desks are set up for class. At the end of the school day, the students place the chairs on top of the tables to assist the custodial staff.

As Herr Gärtner entered the room, the students continued their conversations and seemed not to notice him. However, as soon as he spoke, the students became immediately silent and were seated. There were few pleasantries as class commenced. The students each sat with a spiral notebook, a textbook,

and a large binder containing stacks of worksheets. As students organized their materials, Herr Gärtner joked about a truck that was having trouble backing up in the school's courtyard. This broke the tension as the students looked out the window and laughed.

The technology in the room was limited to an overhead projector. However, Herr Gärtner brought in a laptop and projector, which he rarely used. Most of the class activities were focused on an old sliding chalk board in the front of the room. In this Calculus class, the students were occupied with a variety of mathematical concepts, including trigonometry, differential equations, and non-linear functions.

Of the four participating students, Gottfried sat in the front row, frequently chatting and collaborating with a neighboring boy. Gudrun sat just behind Gottfried and often worked with a girl who sat beside her. Günter was part of a small group of boys in the back, with whom he often conversed. Gisela sat in the center of the front row and essentially worked alone.

Herr Gärtner placed a problem from the previous night's homework on the board and waited for a volunteer. He later explained that he typically acknowledges volunteers; however, he occasionally "calls on individual students when he needs to gauge how they are doing." Sometimes he calls on students "who need a positive feeling from offering a correct answer." For the first question, approximately half of the 24 students raised their hand to offer an

answer. Students who did not have an answer ready shuffled through their papers and often talked to their neighbors, most likely about how they solved the problem. There were no off-task conversations.

Throughout the class period the four students in the study consistently volunteered to answer questions and to work problems on the board. They formulated their own questions for Herr Gärtner, took notes, and remained highly engaged throughout the period. The German term for volunteering an answer in class is *sich anmelden*, which means *to announce one's self*. All four participating students *announced themselves* constantly during the lesson. This took the form of volunteering to read passages from the textbook out loud, offering solutions to problems, responding to questions offered by other students, and working problems on the board.

When a student wanted to be called upon, he or she raised a hand with the index finger extended. The student left the hand in the air for as long as 20 minutes, patiently waiting to be acknowledged by the teacher. As the lesson progressed, often two or three of the participating students had their hands in the air at the same time. Since positive participation represents a significant portion of the overall grade, the students leverage this in an attempt to make a good impression on the teacher. Herr Gärtner clarified that “the oral grade relates to the quality of the students’ participation. It represents 50% of the total grade in my class, so it is a significant element of the course.”

Gottfried explained his rationale for frequently volunteering in class, noting “I participate well orally and make as good an impression as possible on the teacher. My goal for math? To press ahead in the class.” Gottfried repeatedly conferred with a neighboring student before offering questions or answers to Herr Gärtner. For approximately 15 minutes of one math period, Gottfried’s questions and responses took center stage. Herr Gärtner responded with limited praise and non-informational confirmations, such as “Yes, that is good!” or “Super!”

Gisela articulated her thought process for actively participating in class, explaining “When I know something, I volunteer. But it depends upon the topic.” She described the often infuriating process of solving problems in math class:

It is only frustrating when absolutely no solution comes (laughs).

Sometime there are such problems. Then we just sit there, and then I am annoyed. He gives me the solution and then you try it once. And if I don’t get the same result, then it is rather frustrating.

Like Gisela and Gottfried, Gudrun often finds herself in the middle of classroom discussion. She explained that this often causes anxiety, explaining “If you have to draw something or write it for the class on the board—I don’t like that so much” She went on to report “Then everyone looks at you, and if you have the wrong answer, then it is like—I don’t like that so much.” Despite her aversion to working problems on the board, she found herself in this very position

during the classroom observation. When Herr Gärtner asked for volunteers, the group of 23 students looked down at their textbooks. The problem related to the previous night's homework, so any volunteer would have to reveal his or her solution or lack of solution to the problem. Finally, after an extended silence, Gudrun *announced herself* and went to the board. Since it was a complicated problem, Herr Gärtner settled in to a seat in one of the rows and left the board to Gudrun. The problem related to how reducing the entry fee at a public swimming pool would affect attendance and overall revenue. As Gudrun created a diagram, worked the problem, and explained her solution, students offered suggestions and occasional corrections. During breaks where Herr Gärtner fielded questions from students, Gudrun stood patiently at the board. After 20 minutes, Herr Gärtner transitioned to another problem and Gudrun took her seat in the second row.

Gudrun later explained her rationale for participating in math class, noting "I always just try to volunteer. You can have a buffer for your overall grade if you have a good oral grade. You can then get a little worse test score and it all evens out." Although he never found himself at the board during the periods observed, Günter also exhibited consistent and active participation in math class. Like the other participants, he had his hand up throughout most of the lessons. Günter would often confer with a neighboring boy about the problem under investigation. He would then speak for the two of them to Herr Gärtner. Günter later explained "I don't have fear or problems participating in class. That is quite

normal.” He also described how he participates to gain favor of his teacher, admitting “It also carries with it an oral grade, so I can push the instruction forward.”

After 45 minutes of working the previous night’s homework problems on the board, the class was interrupted by the bell. Unlike the traditional ringing school bell, the Goethe School has an upward arpeggio four-note sound that can be heard throughout the campus. Since this was a double-blocked period, most of the students took their break in the classroom or wandered briefly into the hallway. Herr Gärtner remained in the classroom and took the time to organize his materials and set up his laptop and projector.

During the second block of Calculus, Herr Gärtner projected a website from his laptop which illustrated how a graph can be digitally shifted upon the axis by keying in a formula. After taking questions concerning this website for 10 minutes, he asked the students to form groups of four and handed them transparencies and markers. The groups were given four problems to diagram and eventually present to the class. The students seemed more animated during the group work.

The four participants in the study took on leadership roles in their respective groups. They did most of the talking and most were chosen by their groupmates to write on the transparencies. As they quietly conversed and manipulated their protractors to create diagrams, 30 minutes of class passed.

There was no opportunity for the students to present their solutions on the board. However, Herr Gärtner wrote four trigonometry-based problems on the board as homework for the next day.

In another classroom observation, Günter was the lone attendee from the study. The course was Spanish I and the teacher was a native Spanish speaker. The class took place in a portable classroom in the same wing as the Calculus class. The walls were bare, there were a few water bottles and lunch bags on the floor, and the sole piece of technology in the room was an overhead projector, which remained unused. The Spanish teacher was seated at the front of the room near the chalkboard, which she used periodically throughout the period. The class consisted of eleven students who formed their desks into two smaller groups, one of four and one of seven. On their laps were large binders of handouts and a Spanish workbook.

Class began in a serious tone with few pleasantries. The teacher asked the students to rehearse a short Spanish dialogue in groups of two. After five minutes of practice, the students read their dialogues to the class from their seats. The teacher offered minimal correction and a few short comments in Spanish, like “*beuno*” and “*si*.” She moved to the board to clarify a grammatical point that arose through the dialogue. Her explanation was in German and the students took notes. She then transitioned to a workbook activity and gave the students 10 minutes to quietly write in their answers. Subsequently, she called on students in

sequence to read their answers. Although some students occasionally made errors and received brief correction, Günter always offered the correct answer.

After the workbook activity, they switched to a speaking drill. The teacher made no effort to elegantly transition between activities, since everything came directly from the workbook. During the oral activity, she asked students to express in Spanish where they would like to go in their free time. When students did not understand, she modeled in Spanish or asked them either/or questions to simplify their choices. Within the context of the oral drill, she clarified the process of moving from the third person to the plural conjugation. After 45 minutes, the bell interrupted the lesson. The Spanish teacher offered no closing announcements, though she did wish them a happy afternoon, “*Que tenga un buen día.*”

References to Academic Interest

The American students were divided with respect to their references to interest in specific academic content. Three of the five students revealed particular interest in studying foreign language. For example, Amelia noted that she was planning on studying an additional language informally, explaining “I’m really interested in languages actually. . . . And this summer I’m gonna start taking—not taking a course, but my Spanish teacher from freshman year’s gonna teach me French. She’s trilingual, so that’ll be exciting.” Alice also spoke of a practical application for studying foreign language, noting “Our housekeepers are

from Mexico, so I talk to them in Spanish.” She also told of her recent summer trip to Spain, explaining “I was nominated for a scholarship based on my National Spanish Exam scores . . . so I ended up going to Salamanca and studying for two weeks of school there.” Similarly, Andrew was proud to relate a practical example of his use of French outside of the school setting:

OK—Prime example of something that happened yesterday: I was eating lunch, Easter lunch, with a—my grandparents and a group of their friends. And this lady from Belgium is sitting next to me. And she said this to me in French: “We-re gonna start speaking French right now.” And I said, “OK.” And for about 15 minutes, we just started—we just started speaking French, just the two of us. And everyone at the table was kind of listening and watching and I—I realized afterwards that Ambrose Academy’s really set me up to do something like that. Just what I’ve learned and what I can translate into my real life, can take from the classroom and bring it into a conversation like that. I don’t know if that can happen at many other places. I think that’s the most enjoyable thing—to see how education can change my life in a way like that, and how back when I just started taking French, I couldn’t hold a conversation with anyone. But now I can speak with a fluent speaker and get by. And she kept saying stuff like, “Wow, Ambrose Academy really has a great language program.” And I just kept saying, “Thank you.”

Similar to the American students, the Germans expressed a strong commitment to learning foreign languages. However, Gudrun indicated that she finds their acquisition difficult, noting “Foreign languages do not come easily to me. The grammatical forms are difficult for me. Right now I have a Two minus [on a six-point scale]. But that is not bad. Those are just my worst classes.” Gottfried expressed a comparable interest in foreign language, describing his choice of bilingual English in the middle school as an elective. This course allows student practical experience with English conversation, often inspired by field trips to places like the airport where students have the opportunity to develop their English fluency in a natural setting. Günter also started Italian in middle school and switched to another romance language, Spanish, in the upper school.

Although not all of the American participants were able to describe their outside academic or intellectual interests, some revealed the content of their recreational reading, which largely consists of popular novels and humor. After clarifying that she does not have much time for non-assigned reading, Ashley explained her preference for realistic and historical novels, noting “I read *Night* by . . . I don’t remember. . . . I enjoy *Hunger Games* and I guess the trendy books, I guess you could call them, like *Eclipse*, and *Twilight*, and things like normal, I guess.” Amelia indicated that she prefers to read even lighter fare, noting

I read a lot of books outside of class. I mean a lot of fiction. But I’m reading non-fiction—Tina Fey’s book’s called *Bossy Pants*. It’s hilarious.

But specific areas other than that I've looked into what I'm gonna pursue in college—I love animals too, so I focus on those sometimes.

Alice also offered that she likes to read about history when time permits, saying "I haven't really had the time to do too much outside reading this year, but I read a lot—I really love European history so I'll look in—I'll read books about, Kings and Queens of England or the World Wars, the Holocaust and stuff like that . . . From a young age I've always loved to read. It's kind of like my own way to escape from what's going on in the daily world, so that's why I—I feel like I've always read, even when I was younger."

The German participants expressed interest primarily in the areas of their chosen academic majors. Gisela described how her expressed interest in math has developed over time, explaining "In the beginning, math was rather simple. And now you have to be a little more tricky. That is fun because it is a little more complex and the topics have simply become more exciting. More interesting." She clarified that there are many aspects of math that will likely have lasting value for her, noting "I think you can take a lot of math with you. Above all perhaps if you want to study math in college. So I can use all of it." With respect to history class, Gisela explained that her interest in the class has more to do with the teacher than the subject matter:

The most pleasant aspect is the way that Frau Grünewald sets up class. Because she relates well to us as students in contrast to other history teachers I have had. It is more interesting because of the way that she represents history. Otherwise history was not my favorite class, but right now it is really fun.

Gisela also appreciates how Frau Grünewald relates the past to the present, noting “I think she combines the old with current everyday life. And she tells us about some kind of queen or something. She partially criticizes what she had done. Or she makes fun of it. And that is quite interesting.”

Similar to Gisela, Gudrun related that her most interesting class, chemistry, was one of her major courses. She explained why she enjoys this course, asserting “Chemistry is just fun for me because we often get to do experiments.” She also expressed an interest in history class based upon the particular approach of Frau Grünewald, stating “History is fun for me. Especially with Frau Grünewald because I don’t find it as boring as with other teachers.” She went on to explain “Frau Grünewald always tries to take up topics that relate to today so that you learn how it was previously and so you can see how our culture originated.”

Günter also expressed interest in history, though it is not one of his major subjects. He identified his areas of interest in the class, noting “It depends upon the topics. The World Wars or history in general. I find the Middle Ages quite

interesting, but Greece is not interesting to me.” Gottfried also expressed his enjoyment in history class, elaborating “I am interested, but it is not as pronounced as in math.” He explained that his primary area of academics is physics, which is his intended college major. Gottfried described how the process of successfully solving math problems provides him with a long-term benefit:

I think knowledge of how to calculate problems of course. That is the main purpose of math class. And lasting value? Well, the motivation that you get from learning, when you get lots of assignments from the teachers. It empowers you to attempt to solve problems and then it is motivating because you solve it. That has lasting value. If I know that I can come to terms with difficult problems, than for the rest of your life, you will be able to confront similar problems.

Unlike the American participants, the German students did not report outside academic interests. Because the Germans have declared a provisional major subject, their course of study already represents what is equivalent to an undergraduate major. During the Introductory Phase, they have the opportunity consider the appropriateness of their choice of two academic major subjects. After the introductory year, the choice becomes permanent and the two major subjects will represent a substantial portion of the *Abitur*. With this in mind, the German students’ stated areas of academic interest were identical to their provisional major subjects. In the cases of Gisela and Gottfried, their top choices

of major subjects, Latin and physics respectively, were not available as majors due to lack of enrollment. In their cases, they selected alternative majors. However, their eventual areas of concentration in college may revert to their initial choices.

Just as the American students volunteered only marginal amounts of reading material beyond what was assigned by their teachers, they often offered varying levels of detail concerning their academic interests, ranging from generic descriptions to detailed accounts with frequent unsolicited content references. Ashley offered a broad account of her academic likes and dislikes:

I definitely love history. I think—I find that really interesting. . . .

Physics. I'm not as interested in that. And then I guess—I don't know—parts of math—I like Algebra more than I like Pre-Calculus and Geometry—some concepts I enjoy.”

Alice described a specific time period and more specific topics of interest with respect to history, noting “American history—I really enjoyed the 1920s—I really like watching the societal changes in history. I like watching how people have changed and what's stayed the same in society and how it's affected us today.” She went on to explain why she takes pleasure in learning history, saying “I guess 'cause history is a story, it's entertaining to read, it kind of captivates my interest, so that's why I enjoy history.” Amanda mentioned a particular interest in the

changing role of the federal government and expressed a similar justification of her enjoyment in history:

Just learning about what happened, why things happened. The correlation between events, and definitely there's a lot of things in history that you'll learn that are not necessarily what you've been taught before (hesitates), like what the media says or what politicians say. So you get a little different background, and hopefully it's a little more accurate (laughs). So that's interesting to learn too.

Andrew was more specific with respect to interests in history and politics:

I love studying the wars. That's just been very interesting. I like knowing what presidents did in the past. I like being able to compare them then, and then what they've done to more recent presidents and stuff. And what Congresses have done in the past. I like seeing the changing in ideologies that have gone through our government.

He also clarified aspects of history that he does not find exciting, adding "I don't really like talking about social change and stuff like that. I don't know. It's just not as interesting in my opinion."

He related an experience from history class that illustrates the diverse topics that are addressed within a single lesson:

The other day in class, Amelia tracked how the discussion went. And so you've got the main topic over here and the like tangents going

everywhere. And the drawing that she came up with at the end was just incredible. Just us going off on huge tangents over here, talking about World War II, going off to professional baseball for a little bit, the Masters, and coming right back in to the topic. But our teacher doesn't really skip a beat. If we go off topic, she'll chime in and then bring us back and stuff like that.

With respect to math, Andrew struggled to express which area was most gratifying, noting "Most enjoyable. Um—(pauses)—(deep breath)—I—I like learning new concepts. Um, (long pause) I do—I pretty much just enjoy math. Like there's—there's nothing that really stands out from everything else." He later clarified how he experiences math class in more detail:

It's just like learning new ways to express ideas and stuff like that—to express numbers, to express functions and stuff like that. Just learning how functions and everything kind of works together and when you've got like this puzzle that is this problem, and when you put all the pieces finally together and come out with that result, it's—it's great I think. It's fun.

More than any of the American students, Amelia referenced specific academic content, even though she was not asked directly. For math class, she brought up polar coordinates and how to multiply matrices; for physics, she mentioned electric fields; for history, she referenced President Eisenhower, the role of the federal government, the Civil Rights Movement, President Obama and

the current presidential candidates; in English, she referred to Olympia Snowe, Emmett Till, Rosa Parks, Gandhi, illegal immigration, *Slaughterhouse Five*, the Dresden fire bombings, post-traumatic stress disorders, dissociative disorders, and German prisoner of war camps, and how to use rhetorical strategies to support a thesis statement. She explained that she likes to look for connections between different academic topics, noting “I don't usually like a lot of research about history, but when the bombings and camps were combined with research on disorders and other workings of the mind, I didn't mind reading about them.” In preparing for an English essay and eventual presentation, Amelia explained how she carried out research:

Throughout this process, I read supplementary information from my textbook and took side notes on my packet. In the end, I combined my notes to create an outline of my essay. This document is full of supplementary points that will enhance my verbal presentation.

She added that her interest in the topic was matched by attention to the details of the ancillary materials for her oral presentation, noting “Not only did I complete the assignment; I went beyond the expectations, making it colorful and well-organized. I'm happy with my final product, and that's what's really important.”

Amelia admitted to being somewhat uncomfortable with interpretive knowledge, noting “I like knowing that I'm going after one specific answer. 'Cause then if I don't find it, I can keep trying different ways to get it, because I

know it's out there." She added "But sometime in English or history, you can just interpret something totally wrong and not be aware, I guess." Although she prefers more tangible forms of knowledge, Amelia finds more interest in concepts and skills that she can apply beyond the particular assignment or assessment:

I like to apply what I learn to other life situations, and that makes me really curious, and I branch off what other teachers or other people say in class, because I want to apply it to something else that I have been referencing. . . . The objective we've been doing for this chapter is polar coordinates, and I have had a hard time grasping how I apply that into the real world. 'Cause I want to know—I asked this a lot in math last year too—like "How can I use this? How is this applicable into how people are doing this in real life?" 'Cause—I guess that sounds bad—but I don't want to learn something, just so I can say "Hey, I know how to do this." I want to know why I have to know this. Like: "What is this going to get me?"

While Amelia expressed substantially more tangible examples of academic content than the other four American participants, the German students all made frequent references to arcane aspects of their diverse disciplines. For math class, Gudrun referenced inflection points, analysis of functions, discrete problems, and percentages. She referred to experimental procedures and chemical reaction with respect to her chemistry class. For music class, she mentioned the

Renaissance period, triads, and cadences. She referred to Biblical themes and the act of meditation for religion class. In a description of history class, Gisela offered that she enjoyed “antiquity because of the connections to Latin. For example in Latin class we talked about the slaves and about the gods.” With respect to math class, Gisela brought up a class discussion on geometrical curves. She described an assignment for biology, noting “I had to describe meiosis and to show the differences and similarities in the appearance of male and female germ cells.”

In a description of an essay assigned for German class, Gisela cited Schiller’s drama *Nathan the Wise*. For Latin, she explained that a written exercise and translation activity had value to her, clarifying “I happily translated a Latin text which was written in verse form. . . . Solving the problem was helpful to my knowledge of the fundamentals of grammar and my knowledge of vocabulary in the Latin language.”

Gottfried expressed how his current topic in math class related to a discussion curves. He described a film that he viewed in English class called *The Insider*. He detailed his reaction to the film, noting “On the one hand it was exciting and on the other it made you think.” He went on to clarify his reaction, exclaiming “I think I deepened my ability to appreciate and better understand the film. Through that I could put myself into the position of the main character and

already anticipate his decisions.” When describing biology class, he referred to a discussion relating to the “metabolism of our bodies.”

Gottfried provided even more details concerning activities in physics class:

Today in physics our current task closely considered the instantaneous power and average output. With that we developed a new formula. I found it especially interesting that we also established a connection with the accumulation of the limit value in math . . . Furthermore, I am very interested in physics and am fascinated to the extent that you can calculate aspects out of real life, and that you can prove them through experiments. Previously I would have not been able to imagine, for example, how to determine the velocity of a skier at the end of a ramp (with comprehension of the friction), without having measured them through exemplary experiments.

Günter also referred to specific academic details without specific prompting. For example, he detailed the content of his math class, which included analysis of a series of functions, modeling, and examination of extreme cases. Beyond the general topic of the Middle Ages, Günter clarified the content of his history class:

We had to complete group work. To prepare a written report on this theme, and finally we will interpret it and then discuss what we can

compare to see if it would have been possible at all for the Crusades to have been earlier. The Holy War of Islam, the terror attacks today, if one can compare them at all.

He offered that his current topic for biology was the “citric acid cycle.” In Chemistry, Günter was occupied with an “experiment on saturated hydrocarbons.” He described the current content of his economics course, which included “negotiated wages, minimum wage, accrual of price, constitutional principles, undercutting of wages, and precarious work conditions.”

Connection to Current Events

Amelia commented that she is intrigued by the practical application of history class to current events, such as the current presidential election. Amanda shared the appreciation of how her history teacher tied course content to current events:

History can be a little bit like: “Oh, that’s in the past, like why does it matter now?” But then she brings in the current day situation, and so it makes you understand. And you see the correlations, because the past is not something we live through. But now we can see it and we can actually say, “Oh, this is how it’s happening. So it actually does make sense, it actually is relevant.”—Something like that.

Alice mentioned that history is the course that she is most likely to discuss with her parents, noting “Oh yeah, I’ll talk to them like about history and I’ll have

discussions with my parents about that, and even with Government, ‘cause we’re studying current events right now.” She added that this often feeds her general interest in foreign policy. Amelia described how she does not often have time to watch television news. However, she described her frequent discussions of current events with her parents, noting “We bring up different events I guess you could say. And that stems off or branches off into other conversations. So that kind of keeps me more involved in the world.”

Andrew also admitted to not having time to watch television news. However, he described his typical news source, noting “I read the newspaper and I am signed up for this service on my e-mail that the *New York Times* sends me headlines that have gone on during the day. So I’ll read those after school.” He explained that he frequently discusses his school work with his brothers, though not in depth:

I have two brothers, and we always talk about something that happened during the day. And if there was something interesting in my classes, I’ll tell ‘em about it. But I don’t go into detail about everything we’re learning. Like I’d tell them we’re talking about World War II recently in history. But nothing like detail into the policies and stuff like that. I won’t tell ‘em the specific math thing that we’re learning at the time.”

Unlike the American students, who reported frequent conversations with their family members concerning academic content from school, only one of the

four German students reported similar interactions. Gisela described how she communicates to her family concerning her school activities, stating “About school assignments—directly after lunch I tell what happened in school and if I don’t understand something—natural sciences for example—then my dad sometimes helps me.” The other German students reported strong parental support, but less direct involvement or parental knowledge of their day-to-day academic activities. Nor did they report spending a significant amount of time discussing current events or watching televised news with their family members.

Experience of Pressure/Tension

The five American students reported that they felt very little stress in the classroom or at home preparing for school. However, they admitted to varying degrees of anxiety associated with exams, homework, and grades. Amanda mentioned that her organizational system allows her to overcome occasional anxiety when her homework tasks accumulate. She added that she sometimes feels tension during and immediately after assessments in math:

When it gets toward the end of the test and I look and I’m like, “I still have five problems left and five minutes” (laughs), then I start to freak out a little bit. But generally I can work at a pretty good pace where I can just finish it and not have to worry too much. Although I do make like a lot of stupid errors when I do math, and so that kind of stresses me out, because I know I’ll do something and then I have to look back over it—because I

mean, it's just simple addition errors—I'm just being careless, and so these are the kind of errors I generally make. And so that stresses me out because I think, "What if I did this wrong?" and the "What if I did that wrong? (laughs) and so this whole answer's gonna be wrong" (laughs).

Ashley explained that her stress anxiety before, during, and after math exams does not have to do with her level of understanding of the course material; rather, she indicated the source of her stress, stating "It is the grade I think, honestly." She clarified that she is more anxious relatively for tests in history than in math class:

The class is just more intimidating. I think math is easier 'cause it's more conceptual. If you know the basic principles of it, then you can do fine. But history—it's detail-oriented—the dates and people and facts—and so I think just the amount of knowledge I need for the test makes me more stressed out I guess.

Amelia characterized her level of stress in math class as relatively low: I feel more stressed the day before a test . . . By the time I get there, I'm just like, "OK. I know I'm prepared for this. I've done all that I can by now. Now I just need to bring my knowledge to the table." There are some things, when I look at the test and a problem that I knew I say, I say "Maybe I should have paid more attention to that." But then, I think of all

the other things that I did know. And all the other time I spent preparing extra-well for those topics.

Andrew explained that his anxiety during math tests is from the limit of time:

It depends on if I studied the right stuff (laughs). And sometimes some problems take quite a bit of time, 'cause you gotta think about it for a little bit. Figure out the way to solve it. So it—it kinda depends on the time—time management.

Andrew explained that his stress in history class has more to do with essays and the teacher's strict grading policy, noting "It's not really anxiety. Just kind of pressure to do well, because it's the other class that I have a B in and I'm working hard to get an A in. She's hyper-critical of your writing."

Of the five American students, Alice revealed the least amount of stress in math and history classes. She explained her circumstances in math, offering "During math—there's not really any stress since I've dropped down a level. But last year when I was in the harder level, there was quite a bit of stress." She added that she does not feel stress while working math problems on the board, noting "It doesn't really phase me if I—I mean as long as it's not for a grade or anything—I don't really mind, 'cause it's a learning experience, even if it's on the board." She clarified that her level of stress in math class relates to both the difficulty of the content and the challenge presented by the specific teacher:

This year, since I think I know everything, so I'm not really worried about math. But last year I got quite a bit of test anxiety, just 'cause the other teacher's class was a little more strenuous, and it was just harder for me to understand and when—I just never fully felt like I understood the concept before I took the test or would always tend to freak out while I was taking the test.

Similar to the American students, the Germans reported only limited stress with respect to their school activities. When they experience stress, it mostly has to do with the preparation for classroom exams. Günter expressed that he feels little anxiety participating in class discussion or while taking exams, noting “I am never afraid or anything—sometimes a little excited, but not so much that I feel panic or anything. If you read and prepare for the test, then that is the best.”

Gottfried clarified the pressure that he experiences at school, particularly with respect to the time limits for exams, noting “At the beginning of the test I am just not so certain if I will finish. But I always have gotten it done. And then the stress of the thing is always right before the test.” Günter detailed his inner preparation for history tests, which includes a type of self-imposed stress to improve his performance:

I put a little pressure on myself because I have the feeling that I can quickly jump into the test and I think faster if I am under pressure. And

then I put a little pressure on myself, but I think I don't have to absolutely have the pressure.

Gudrun admitted to feeling some pressure with respect to assessment, noting

“Prior to a test, you clearly feel a bit excited, but now it is not quite so bad.”

Gisela expressed similar feelings toward assessment in history class, explaining “I only really feel pressure during tests. For example, if we have a source and we have to summarize it, then you find yourself under a bit of pressure to see if you properly understand the source.”

Experience of Choice for American Students

The American students described choices that they made with respect to their academic programs. Within their core requirements, they can choose whether to take regular, honors, or advanced placement. Ashley explained that her rationale for selecting courses is based upon both interest and potential effect upon her GPA:

Well, I definitely wanted to take Spanish and—or AP Spanish and AP History and AP English because—I think those are my best classes. And then Physics—I knew I wouldn't do as well there, so I just took the regulars course load. And then math, I've just been on like a track of just like normal, I guess, so that's just how I chose mine.

Alice described the relative difficulty of her chosen courses, noting “I still have a heavy course load in regard to the other students.” Similarly, Amanda

reported her choice of a challenging course schedule, explaining “I find it challenging now. . . . I’m taking three AP classes and two honors classes and I have two fine arts, so it means I don’t have a free period.” She added that she is one of the few students at Ambrose Academy who has a full schedule, noting “I actually haven’t had a free period my entire high school career. So freshman or sophomore year either. But there’s just a handful of people who don’t have free periods.” She added “Some of ‘em because they take a sixth academic, or some, like me, because they have two fine arts.”

Another choice that the students can make concerns how they use their free-period. Andrew noted that he will either visit with friends in the commons or find a quieter place to study. Amelia explained her ambivalence toward her free period, noting “Sometimes I dread free period actually ‘cause then I know—I feel bad when I don’t work in free period. But I like it.”

During an observation of history class, I witnessed a very quick shift in student attention and engagement. When the history teacher transitioned from talk about the AP exam to student-chosen topics, the level of interest and engagement increased immediately. The students were preparing for a school wide praxis, which is a cross-disciplinary activity where students make presentations and attend panel discussions based upon a prescribed theme. The current theme related to social change in the 20th century. Alice was animated as she commented on how Dr. Aldridge helped her narrow her praxis topic:

Actually my first one was to analyze the impact or the shift away the US policy of isolationism after World War II. But Dr. Aldridge suggested that I change it. So I ended up changing it to: What impact urbanization had on societal changes in the 1880s. So you kind of see how urbanization of cities changes the youth of America. And they start dating and drinking and slowly people start shifting away from I guess this past kind of Puritan ideal of what's right and moral and you watch the shift in cities. So that's what I'll be doing my project on now.

Alice reported she has the opportunity to make choices most in history and English classes:

In history we've had maybe two other projects this year and this is the third one, so she's very nice about letting us choose what we wanna do. And she'll offer suggestions. And in AP English, we're writing a research paper, and we got to choose our topic. So this semester I'm writing one on language and culture. So that's kind of my interest. And then last quarter my English research paper was on Islamophobia in America and how the role of the media affects current views of Islam. So those, I mean there's a lot of freedom in choosing stuff like that—that you actually have to maintain an interest in to kind of finish.

Experience of Choice for German Students

The American participants reported that their most significant choices concerned their academic schedules, relating to signing up for regular, honors, or advanced placement. Although the German students did not report selecting the level of difficulty of their courses, they reported early choices with respect to electives and more recent choices relating to their major subjects. Since they are currently in the Introductory Phase, the German students have the opportunity to change their two major subjects at the end of the school year. Gudrun described the types of choices that she was able to make with respect to her academic program:

First we could choose an elective course in the seventh grade. Either bilingual political economics—but that is essentially English class—or we would go to the airport and through that learn vocabulary. So I selected that. Then you could also select computer science. Italian or—what else is there? Also Latin or French. Then in the Introductory Phase we could either choose English conversation –what is it called—philosophy, computer science, or Spanish. And then you can just choose bilingual English every year. So there are actually different many variations.

Gottfried described the transition between to two levels within the school, noting “There was the change from the middle school to the upper school, from

the ninth to the Introductory Phase. I could still select the major courses.” Gisela described her selection of elective courses:

I could choose my first foreign language between French and Latin. So I selected Latin. That was very good because Latin is my best subject actually. Then we could select a couple of required subjects. I selected computer science. And now we can select our major subjects. I actually wanted to select Latin, but because there was such little interest from the other students, I unfortunately could not do it, because too few students chose the course. So that was too bad. And because of that, math and German rather represented my second plan.

Gisela expressed some hope that her initial choice of major could be available in the following school year, explaining “I will try in any case to select it again, but I don’t expect that so many will choose Latin. Eventually I might be able to attend the . . . [neighboring school]. But that is always difficult to organize.”

While the German students reported an array of choices with respect to their academic programs, they were unified in their characterization of choices within the classroom. Gisela reported “I had no choices.” Gudrun asserted “There were actually none.” Gottfried assented, also stating “I had no choices.” Only Günter expressed the limited possibility of choice, stating “Only for history homework I had a choice between two topics”

Sustained Academic Activities

The American students described school-related activities where they were able to sustain activities in a single-minded manner without distraction. Andrew described a speaking activity for his AP French class:

I completed a timed response to a historical question in French today. It was an oral, speaking, response that had to be two minutes long. I thought about the question and jotted down ideas for how to answer in the allotted time. A lot of my response was then improvised when the timer started. I felt very accomplished because the response showed that my French speaking had greatly improved from the beginning of the year.

Just as Andrew felt proud of his progress in French, Ashley articulated how she perceives schoolwork to gain in value based upon the extent of her effort:

Success I think it's the reward you get out of the amount of work you put in, depending on the situation. But it's a goal you feel you want to complete. I think I'm successful because of the amount of work I put in to my classes and I definitely spend a lot of time. Because doing work, especially in my AP classes, the ones that I actually care about, well—I care about all of them—but the ones I enjoy the most, I definitely put in more work.

Gottfried characterized the work ethic and sustained effort of the German students, who persevere to accomplish academic goals. In a response to the

Survey Monkey prompt, Gottfried described his commitment to study, stating “Today I unfortunately had to devote approximately two hours of my actual free time to prepare for an exam in politics and economics.”

Manageable Challenge

Although all students describe a high level of challenge within their respective academic programs, they also characterized this challenge as being consistent with their abilities. Amelia expressed how she considers school to be a manageable challenge:

I’m very lucky, but, like, sometimes in math we have those graded assignments, and they’re problems that we’ve never seen before, don’t exactly know how to do ‘em. And sometimes they take a couple days to figure out, and those stress me out, but I know I don’t wait—a lot of people wait ‘till the day before it’s due at midnight, and then they start it. And that would stress me out more than anything (laughs). ‘Cause then I don’t know if I’m ever gonna find the answer in time. So I always start ‘em maybe a few days earlier, and then that’s why I can turn it off, because I can say “I’ve solved two out of the five problems. I’ve started on the other two. I just don’t know how to do this one.” And then I can keep going back to them the next day, until, hopefully I figure it out (laughs).

She noted how the assignment pressed her limits, explaining “I had to use a lot of my memory so that I was able to have the rudimentary skills involving matrices. I definitely had to have patience as well because the multiplication pattern for matrices is very complicated.” She also commented how she possesses sustained focus and takes joy in completing the task:

I had to have the self-discipline to sit down without distractions and figure out the pattern. I loved it! I've always found matrices interesting, and even though I love how math has one specific answer, I've always been amazed that there are so many ways to get the same answer. I felt confident in expanding my current knowledge.

Amanda commented on how she enjoys the challenge in math problems, reporting:

I like it when I'm presented with a problem and I think I have no idea how to do it. But if I sit and work it out for about ten minutes or something, and I figure out how to do it, it's really gratifying to know that you can actually figure something out that just looks impossible. And I think that's one of the big things about math that's really interesting to me.

Alice expressed similar sentiments with respect to mathematical process, explaining “I enjoy proofs I guess. And actually working problems and getting to the right answer after all the work you do, you finally simplify it down and get the correct answer. I like that—the puzzle aspect of it.” Recognizing a similar level

of challenge for his amount of school work in general, Andrew added “The intense workload that I have kind of inherited or gotten because of the classes that I’m taking. It’s good that I’m taking a rigorous schedule, but it’s got it’s downsides as well.” He articulated that the cost to having such a demanding schedule relates to his social life, noting “Some of my friends may wanna do more stuff on the weekends and stuff like that or have time to watch TV when they get home. I have to go home, eat dinner, and go straight to my homework.”

Experiences with Complete Attention

Although the German students were reluctant to report past occurrences where they experienced optimal performance and heightened attention, the American student recounted several experiences in that category. Andrew described how his experience in theater has improved his classroom performance and allowed him the assurance to participate in student government:

I think doing theater and stuff like that has given me enormous amounts of confidence just to stand up and say, “Hey, I don’t understand this” or “Yes, I’ll speak in front of you.” I don’t mind speaking in front of people. That’s why—that’s one of the main reasons that I ran for student body president, because I knew that it requires you to speak in front of large groups of people and I kind of thrive off of a crowd, I guess, if that makes sense?”

He explained that he developed his love of performing through middle school choir and drama. He described his initial time on the stage, offering “In the fall play in ninth grade, we did *As You Like It*. And I had the smallest role in the world. But I still loved it.” His most recent theatrical endeavor has been his participation with an improvisation troupe. He became animated as he described the feeling of being on stage:

It is extra-curricular and there’s a group of 12 of us. And we meet (laughs) every Saturday and just kind of do our improv stuff. We have three shows a year. We just had one two weeks ago. We’re gonna have another one in two or three weeks, something like that. And I love it. I absolutely love it, ‘cause it’s just—you think on your feet, and you have to—you have to have those relationships with the other people in the improv troupe so that you know what they’re gonna say. You know them well enough to know that they’re gonna respond to an action like this. Respond to an action like that. And I don’t know, just being comfortable with standing up in front of a group of people and making myself—like the last show we had at Ambrose Academy—I was a synchronized swimmer in one of the scenes, and me and another guy were just kind of swimming around stage. People thought that that was pretty funny. And I—I’m fine with being a goofball in front of ‘em, ‘cause—ya know what, if they laugh, then I’m happy.”

He characterized his participation in improvisational theater as a heightened experience where time passes quickly:

I love the adrenaline rush of coming out on stage for the first scene that you're in, and uh, you're kind of like—anxious to get that first big laugh. And then once you do, it's just like—huge weight off your shoulders and the rest of the show just rolls. And it's just—it's great.”

Andrew later explained that his type of adrenalin-filled experience is not limited to sports and theater, noting “Something that happened last week—last Friday. My friend and I had to give a presentation on saltatory conduction in your neurons.” He went on to describe the presentation and his sensation of the passing of time:

I didn't really know anything about it prior to when the assignment was given to us on Tuesday. And my friend and I really understood it. And we went up on the board to the front, and you can either do a PowerPoint presentation or write it on the board. And we taught it like we were the teachers teaching the class. And just kind of got into it and started drawing stuff and like explaining stuff and had some questions from the people in the crowd. At the very end, the physics teacher normally says, “Great job, but here's something I wanna correct.” He just kinda clapped for us. He said, “Great job, guys!” And I look up at the clock—it had been 20 minutes. It felt like two. So I think that's an example of it.

During math class, Amelia, Amanda, and Andrew all attempted to solve a puzzle as a warm-up activity. The puzzle consisted of a question relating to how the spaces on a chessboard can be manipulated within specific constraints determined by the teacher. It was meant to be a thought problem that needed to be broken down into smaller parts to reach a solution. However, in this case, there was no possible solution, so the problem represented an exploration where the students were to use their analysis skills to determine either a correct answer, or in this case, to supply an explanation why the problem could not be solved.

Amelia described the process:

I knew in that puzzle—I knew we had to find a way to make the two boxes that would be extra fit together. So kind of like I said, I visually saw myself cutting the board in half. I *made* it into a math problem, ‘cause if you look at it, you could say, “Hey, that’s just creative thinking or however you want to look at it.” I made it into a math problem, saying “I have two identical pieces, or two identical shapes, turn them the same way and there’s no way they are going to fit together.” If that makes sense.

Amelia went on to describe the typical practice of the problem of the day in her math class, indicating that it is both frustrating and challenging:

So there are days when we’ll be sitting there for the entire 45 minutes trying to solve this one (laughs) math problem that we have no idea how to do. And that makes time go a little slower, ‘cause you get frustrated,

‘cause you try doing it so many different ways, and he’s not going to give you any hints and you’re working together with everybody else in the classroom and you’re like, “I have no idea what’s going on, do you?” And they’re saying “No!” And then he brings it back the next day and you’re like “I still don’t know how to do it!” and then we get into inter-competition with the other class and like, “Did they solve it?” Or, ya know, it’s crazy. But it’s fun. I mean, I still like it.

During the chessboard problem, Amanda was working beside Amelia, sometimes in collaboration, sometimes working independently. They seemed to take turns leading the class discussion by suggestion solutions and articulating their thoughts out loud. Amanda described the process of attempting the problem:

I was just trying to think ahead. I mean it made me think of kind of like chess or something, ‘cause we have a checkerboard—but you have to think a couple steps ahead, and you have to go for it. And then you mess up and you just have to start over again. And then finally coming really close to the conclusion, you’re just thinking and we’re like, “Oh.”

She went on to elucidate how she experienced time during as the class neared the solution and how she felt afterwards:

And then you just finally speed up the process and you get there. So it was just kind of annoying that we (laughs) spent that time doing that (laughs). But it teaches you that you have to analyze it a little bit first,

rather than just going straight into it. So I think that's the point of those problems. He always makes us do those every day. And so, it just kind of teaches that gotta like analyze the question and look at it before you just start trying to answer it.

During another period of math class, Andrew encountered the same puzzle problem. He explained his approach, noting "I looked at that problem and I just blindly jumped into it. I didn't really think logically, 'cause I like doing stuff like that. I like puzzles and I wanted to find a solution." He explained that this type of problem is common in that class, adding "We get problems of the day every day in math. And I work furiously to try and solve 'em (laughs). 'Cause I like those kinds of problems." He further clarified that there is occasionally some competition between his class and that of Amelia and Amanda, stressing "It's kind of friendly."

During these math problems or during graded homework assignments, Mr. Anderson provides feedback as he sees fit. This often involves responding to a student question with a question of his own. Amanda related that she finds this both helpful and frustrating, noting "Actually he doesn't really talk to us about a lot, honestly (laughs). If you go and ask him a question (laughs), sometimes he won't answer it, so." She then clarified how Mr. Anderson can be coy with his assistance:

Well, I mean (laughs), sometimes he'll just be like, "Well I don't know if I can tell you that" (laughs)." But a lot of the times he doesn't help us because he's like, "Well I don't know, is it?" and we're like, "I don't know, that's why I'm asking you" (laughs). But if you have a specific problem and you say, "I need help with this," then he'll—he's really good about helping you with that.

Andrew pointed out that he frequently responds to questions in math class, noting "I guess it's just my nature if someone asks a question, I'll try to solve it for 'em." He explained that he appreciates any feedback from his math teacher or from his fellow students:

In that class, I made a mistake with the work that I did and was just—I just laughed about it. I was like, "I'm so sorry everybody." I mean it wasn't a big deal at all for me. Just someone corrected me and I'll correct it for the test that I have today. Just make a couple corrections and accept the criticism from other people.

While the American students often articulated their level of challenge within the academic program, the Germans mentioned their challenges in an understated manner. Günter referred specifically to an assessment, stating "The normal school day passed without stress. However, the test in politics and economics was challenging." Gisela expressed that her math assignments are often at the threshold of her classmates understanding, noting "It depends on the

theme because there are always assignments that are always somewhat more difficult. Everyone can't solve all of them." She went on to describe how the level of challenge in math class can cause her stress:

Only frustration when I can't come to a solution (laughs) . . . Then we sit there and are too annoyed. He gives me the solution and then you try one. And if I can't come to the result, then it is always frustrating.

Perception of Time

As the American students described how they worked problems in math class and took part in discussions in history class, they mentioned their perceptions of the passing of time. Ashley noted her experience in math class, saying "Obviously it depends on the day. But most of the time I feel like it just goes by pretty fast. It's one of my easier classes, since it's just a normal—it's not an AP class, so I think it goes by pretty fast." Ashley volunteered that she had recently been pursuing her pilot's license and clarified how time feels in the cockpit compared to in her seat in math class, noting "I think time flying feels like it goes by faster, 'cause I kind of enjoy it more (laughs). Except when it's a stressful situation; then math feels like it goes faster, I guess."

Like Ashley, Alice is enrolled in a regular-level math class, which she finds less challenging than the honors track in which the other three participants are enrolled. Alice described how she often looks at the clock during this class, offering "During math class—since I've dropped down a level—it's kind of

slower. So I've already learned a lot of the things that we are learning, so it tends to pass by pretty slowly." Amanda expressed that when she is at the board working problems in math class, time passes quicker than when Mr. Anderson goes over homework, noting "Sometimes I'll be the one putting the questions up. And so when you have to figure it out, it goes pretty quickly. But when we're just talking about math principles I guess, then it goes a little slower (laughs)." She clarified that she is "not much of a lecture kind of person." With that in mind she expressed that the discussions in history class often seems to pass quicker than math class, adding "We're engaged the whole time and we're just having like a discussion the entire time. There's usually not a big lapse when we're not doing anything, so it goes pretty quick."

For Andrew, time in history class typically passes slower than in math class. He explained:

If I'm just sitting there thinking, "I know I can solve this but I can't think of why it would work or how I can solve it, um, but then I like working problems on the board and stuff like—given a problem and trying to find that solution—that passes pretty quickly, usually.

The German students reported that time passed relatively quickly during their classes, particularly when they perceived the activities as fun. Gudrun explained her perception of time in math class, noting "Actually relatively quickly. That is not boring." She compared her relative view of time in history

class, noting “Maybe it is a little slower than in math. But I think normally—you don’t think about the time at all. It is not like that.” Günter noted that his view of time in class was based upon his interest and in the length of the class period, noting “Because of my interest the time actually passed quite quickly. The normal school day passes without stress. One hour on Fridays, but two hours— On Thursday afternoons it lasts quite long (laughs).” He went on to describe his relative preference for math over history, asserting “If math were in the afternoon, then math would pass a little quicker.” Gottfried expressed similar sentiment with respect to time in class:

It varies. It depends upon how much fun—if I am now—motivated—*very* motivated in the topic of class, then it appears faster, because I had something like three hours or something. Then with respect to time, it is lots of fun. But then it passes much quicker.

Gisela described how her perception of time in class varies depending upon the level of interest

It varies, I would say. If we have some kind of interesting assignment, like for example problems to solve individually, and then time actually just flies by. But if we, for example, now have an assignment or discuss something, then the time can seem a little slow . . . Simply when I take part in the class, then the time passes quicker. I also know that I will receive a good grade for that.

The Realities of the Adults in the Students' Lives

Throughout the interviews, both the American and German participants frequently referenced strong support from the adults in their lives. The questions focused upon the motivational content of those relationships and the extent to which the adults were controlling or autonomy-supportive. The following section is divided into three subsections, detailing the students' relationships with school administrators, teachers, and parents respectively.

Connection to School Administration

Of the three students who have attended Ambrose Academy since kindergarten, two expressed positive relationships with the school administration. Amanda stated that “they’re really approachable. And the college counselors as well.” She explained that they have an “open door policy, kind of just ‘Come in and see us when you need to.’ So they’re very available.” Because of his involvement with the counsel, Andrew has had considerable interaction with the school administration. He explained:

Since I was elected student body president, I had to go meet with the principal of the high school and the vice principal of the high school. And they basically said, “Well, we’re ready to work on next year starting right now.” I said, “OK great.” And they kinda said, “We’re always here for you. We got your back. Anything that you want to do, come run it by us. We’ll let you know if that’s gonna be OK.” They’re very personable.

They're not extremely high up on a pedestal or anything like that. They're very accessible if you have any problems or anything like that.

Unlike the American students, who reported very close relationships with school administrators, the German students described a relatively distant connection. According to Gisela, this relationship has not developed, explaining "Up until now I have had little contact with the school administration. You see them at special events, and they may say 'Hello!' or something. But otherwise little contact." Gudrun and Gottfried reported even less interaction with school administration. According to Gudrun "There is really no actual relationship there (laughs)." Gottfried responded with a simple "No." Günter recalled an incident where the School Director visited one of his classes and left a negative impression on him:

The Director came to our class to give support to a teacher because of a quiz—not an exam—a quiz that went badly because no one had prepared. The Director said we should all go to the *Realschule* [a type of school that is academically less rigorous than the *Gymnasium*]. Then the Director asked us if we really should be here at this school.

Connection to Teachers

While the American students have formed positive relationships with the school administrators, they have also established close bonds with their teachers. Andrew summed up the sentiments of the five students, exclaiming "The teachers

are incredible! And I think with the small class sizes that we have, you can really have like kind of a personal relationship with the teachers.” He went on to assert “I have not had a teacher in high school that I haven’t liked.” It is a tradition at Ambrose Academy for junior students to select one teacher who will write their college letter of recommendation. Andrew recalled “I had a tough time deciding who it was gonna be, ‘cause I thought all of my teachers were amazing and could write great recs. So—teachers are pretty incredible.”

Particularly after the first history class observation, I was eager to learn what the students thought of Dr. Aldridge. Surprisingly, the students in the study responded very positively to this teacher, forming perhaps their strongest of all faculty member relationships. Asked if she was comfortable going in after class to speak to her history teacher, Ashley responded “Yes, definitely.” However, she clarified “I mean not too often, if I have a question about a test coming up or a paper or a project I will—but for the most part I basically don’t need to.” Similarly, Alice explained that Dr. Aldridge “has a nice personality too. She’s easy to talk to.”

Alice also commented on the extensive comments that she receives from Dr. Aldridge on her written work:

Especially on our papers and tests she will put a lot of comments. They’re

hard to read a lot of the time (laughs). But she will put them down and you can always go in and talk to her about something, and she'll help you and she's very willing to help you and talk about anything.

She explained that she is most likely to make an appointment for extra help in history or English. Speaking of Dr. Aldridge, she clarifying "I tend to go in and ask her, not often, but if we're writing like a paper, maybe I'll ask her about something. And in English class I do it for a research paper. But that's really all."

Amanda indicated that she has positive relationships with all of her teachers, saying "They're just passionate and that's what I think makes a really good teacher, someone who is really passionate about what they teach. And we have a lot of those teachers here, so that's nice too." When asked specifically about the feedback she receives from Dr. Aldridge, she concurred with Alice:

She gives really good feedback on all of our papers. And even when we just have questions from the book that we have to answer, she'll write like a lot on them. She'll say like, "This is partially true, but maybe you should have said it this way, so that way it's more accurate" or just a better way to write, and also better ways to integrate information and stuff like that.

According to Amanda, she went through a transitional period with Dr. Aldridge, particularly with respect the writing requirements, which took a few

weeks. This may have been the only class during her high school career for which she received anything lower than an A grade. Amanda characterized Dr. Aldridge's appraisal of students as direct, asserting "She's not a very beat-around-the-bush kind of person." Amanda likes this attribute, explaining "She's just very straight-forward, like—'Well, I don't like this.' Like on the day in class she got mad at all of us (laughs). I actually did well on that paper, so . . ." She added, "I was sitting there the whole time like terrified. I was like 'Oh my gosh! I probably got like a C minus (laughs). But I actually did OK on that.'"

Andrew described how Dr. Aldridge exhibited generosity and flexibility when dealing with his relatively poor performance on a recent writing assignment:

I talked to her about it and she actually told me that I could rewrite the paper. She said, "I know you were going through a lot that week, 'cause it was the week of student body president elections . . ." And she said, "I know you're a better student than the grade you received. I'm gonna give you a second chance, 'cause you haven't asked for any second chances all year. And I feel like it would be fair if I gave you this one right now." So I'm gonna turn that paper in tomorrow.

With respect to teachers, the German students have developed both strong and strained relationships. They indicated that their connection with teachers to a large extent determines their level of interest in the course. Gottfried described

his admiration for the content knowledge and pedagogic abilities of his teachers, explaining “I think we have good teachers who are knowledgeable about their subject. And they can for the most part present the information so that we can understand it.” He described generally positive interactions with his current teachers, noting “I actually have a good relationship with the teachers. I get along with them very well.” However, he described an even more positive relationship with a teacher from a previous year, recalling “I previously talked about my old French teacher. His name is Herr Gerstner. I got along extremely well with him. During the breaks we often had conversations. He would tell anecdotes from his life.” Gottfried characterized his present history class as “less interesting, relatively speaking,” adding “with my old history teacher we had spoken about the Second World War and things like that, and I found that more interesting. It seemed more real.”

Gottfried explained that he attempts to make a positive “impression on the teacher” by consistently participating actively in class. He explained, “I volunteer and just try to give the answer. If I have a wrong answer, then I have tried.” He characterized the feedback that he receives from his math teacher as positive, but non-effusive:

Of course there is feedback in the form of grades when we take an exam.

Or I also receive an oral grade. This is based upon how we volunteer and so forth. And it sometimes occurs, but rarely, that you get feedback from

the teacher when you volunteer. Such as having a good idea of how to solve a problem. It mostly comes in the form of “Good!” or something like that.

Like Gottfried, Günter expressed mixed levels of connectedness with his teachers, going so far as to say that his drive to success is directly related to these relationships:

In general, I am motivated in school, but that also depends upon the teachers . . . This school year, I am not as good in history. But last year, I had a really super teacher. And then, I really had ambition. I volunteered in class and so forth. And that was also a very good class, but now this year it is just different.

Günter explained how the praise that he receives from his math teacher “shows that the teacher is satisfied with the student.” He characterized this praise as rather simple, like “Well done!” or “Work well-done!” or “Yes, good idea!” On the other hand, he described history lessons that he has found least enjoyable where “the teacher simply lectures and gives assignments with some types of difficult texts and you are supposed to find something out, and there is not enough time.” He added that feedback from his present history teacher is limited to formal parent meetings, explaining “You actually now receive little feedback. Mostly during the grade conference at the end of the year. Otherwise just when your answer is true or false. Nothing else really.”

In contrast to the two male Germans, Gudrun and Gisela described very positive relationships with their teachers. Gudrun characterized math in the lower school as being “not always a super subject.” She clarified that the specific teachers transformed her interest in the subject, noting “It just depends upon the teacher, how much fun I have. And during the past three years, I actually had good teachers who were fun. So, now it is my favorite subject.” She then evaluated her connection with her current teachers:

I get along with most of the teachers quite well. I don't know if I would call it a relationship. There is actually not a close relationship. We no longer have a proper homeroom teacher. We all are in different courses. We are no longer a class. But I actually just get along quite well with all of my teachers. With some better, with some not so good.

She clarified how the teacher of one of her major subjects has taken over some of the organizational and administrative responsibilities formerly held by the homeroom teacher, stating “Herr Gärtner is technically just our tutor, and that is something like a homeroom teacher. But you no longer have a solid class in which you have all courses together. Rather, they all have different people together.”

Gudrun also interjected her feelings toward history class and that teacher, stating “History is fun for me. Especial with Frau Grünwald, because I don't find it as boring as I do with many other teachers.” She then explained how Frau

Grünewald makes class relevant, noting “Frau Grünewald always tries to connect the themes a little to what is going on today—to explain current political things. And that you just learn how things were earlier and how our culture actually originated.” Gudrun clarified that her interest in history has been fostered by her relationship with Frau Grünewald:

In any case, it has gotten higher. My previous history teacher was not really my favorite teacher. And it was just relatively boring because he just always either lectured or we had to just take notes from the board for an hour and read some eternally long text. And that was not very fun for me . . . With someone like Frau Grünewald, I actually like her board diagrams because then we don’t have to read through eternally long texts, and in spite of that we understand what is going on. And she just tries to speak with the students and to bring them a bit along as far as history.

Similar to Gudrun, Gisela has established positive relationships with her teachers, declaring “I think that I get along with most of the teachers.” She finds math class with Herr Gärtner to be enjoyable because it is often fun. She also explained the effectiveness of his comments to students, noting “If for example when we are called to the board, he always gives us feedback concerning the problem that we solved or how we can improve ourselves.” She added that his remarks were typically “Short and good. And also informative.” With respect to

Frau Grünewald and history class, Gisela also stressed the structure of class and her teaching style:

Most enjoyable is the way that Frau Grünewald sets up class. Because she has created good relationships in contrast to the other history teachers that I have had, I find the history that she presents more interesting. Otherwise history class was not really my favorite class, but right now, it is fun. . . . I think she connects the old with things that are happening in everyday life today. And she tells us about some queen or something and partially criticizes what she did. Or she makes fun of it. And so it is quite interesting.

Familial Relationships

Just as the American students were happy to express their study routines, their college aspirations, their relationships at school, and their reasons for participating in class, they were eager to credit their families for instilling the work ethic and intellectual curiosity that allows them to be successful. In all five cases, their parents have gradually taken a hands-off approach with respect to the students' school work. According to Ashley:

My family's definitely more supportive than anything. They're not really pushy or anything. This is strictly what I set myself up for. So they're like a huge help with what I get because they're supportive, but if I don't

do so well on something, they don't get angry. They're just there if I need them.

Ashley described her parents' simple and non-descriptive feedback on her academic work, noting "It's like 'Good job!' or 'I'm proud of you!' Things like that." With respect to tangible rewards, she explained "No, I don't (laughs)—I don't get compensation." Andrew's parents also give him a free hand to take care of his academic responsibilities, telling him to "'Do as much as you can! 'Cause you're only going to be at Ambrose Academy for a certain amount of time.'" He explained that "in lower and middle school, they used to be more hovering over my shoulder about grades. Now they kind of just expect me to do my thing and come home with good grades." He added that during his freshman year, "They just kind of said, 'We trust you. Ready! Set! Go!'"

Alice has a similar relationship with her parents concerning her schoolwork. She explained that since her parents are both physicians, they have little time to help with her homework. However, she mentioned that her father will occasionally read over English or history papers "and see if there are any grammatical errors and stuff like that." Because of her past efforts, she has gained the confidence of her parents:

I think in contrast to a lot of other kids, my parents maybe remind me to do well, but they've never made it a point, 'cause they don't really worry about me. I have two younger brothers, so their focus tends to be on them,

just being boys. So, I've kind of been on my own. And being the oldest child also I think has led me to kind of take care of myself and pay attention to my own grades and not have to worry that much of what my parents think. They know I'm gonna do well. They know I try my hardest, so even if I don't do well on a test or a quiz, they never get worried. I guess I kind of motivate myself to do well. And I want to do my best.

Amanda also describes herself as being a self-starter, attributing her work ethic to her father:

I think that my dad is a good role model because he is from India. He moved over here in the 70s, and he's a doctor. And so he's always taught me, "You always have to work hard and put forth your best effort, because otherwise you're not gonna get as far as you would like to in life and you're not gonna get like economically stable or like stable with a family and a home and with all your friends if you don't work hard, because people aren't just gonna hand you things." And so that's definitely something he's taught me.

She explained that her mother provides emotional stability and gentle motivation, observing "My mom—she's really good about the more emotional side, because she's definitely always like, 'You know you can do this. I believe in you.'"

She admitted that her parents have “unspoken expectations” relating to grades which she has consistently met. She credits her parents with igniting her curiosity and drive to learn:

My dad has like a thousand books . . . Like we have piles and piles and piles of books. And so he’s always telling me about all these little things and how interesting they are, and so I think that—like sometimes he’ll tell me about things (animated), and I’ll go like look them up and be like, “Oh, well that really is really interesting!”

Amanda also explained that her parents encouraged her to develop her own “likes and dislikes” by pushing her “in every single direction.” She added that her parents often say “Hey do this, and see what you like. Do this and see what you like.” She described how this attitude has led her to attempt a variety of activities, noting “I took dance, and then now I play sports and I played the piano and I play the clarinet and I’m in the musical, and I like to sing and so they’ve kind of just pushed me out there.”

Amelia’s parents also maintain a detached and trusting approach when it comes to her academics. She explained “They’re not overly dramatic about grades, because I guess they just assume that my brother, my sister and I are gonna work our best, work our hardest. She also suggested that “They’ve never been the type of people to say ‘You have to get an A or you’re grounded!’ or stuff like that.” Amelia described how she often watches the evening news with her

parents, which typically “branches off into other conversations . . . So that kind of keeps me more involved in the world.” She also mentioned how her father often travels to Canada and Germany and brings her back postcards containing facts about those countries. She explained how her father motivates her to persevere during the challenges and drudgery of high school life:

My dad’s always said, “Ya know, these are the best years of your life.” He always says that to me. I’ll get a home and I’ll be like, “Oh my gosh! I have so much homework tonight,” and he’ll be like, “Ya know, these are the best years of your life. Enjoy ‘em while you can.” And I’m like, “OK (laughs)!” But then actually, I don’t know why that motivates me to do well, but I say, “Ya know, if I can get through it now, later on it’s just going to help me. In college, I’m going to know how to study. I’m going to know how to deal with getting everything done on time.”

Like the American participants, the four German students described strong and supportive relationships with their families. Gisela reported the role of her family in her academic success, explaining “I think it is nice when I am praised by my parents and they are proud of me. For example, my grandma also tells people how good I am in school (laughs). And that makes me proud.” She openly communicates with her family regarding school, noting “Concerning homework—directly after lunch I tell them what happened in school and if there is something that I don’t understand, naturally, for example, my father will help

me sometimes.” Gisela added that her parents do not have a rewards system for good grades. However, she admits “My grandma gives me money for the report card. But that is all.” Gottfried’s also reported receiving money for his report card when he was younger, explaining “It used to be that if we brought home a good report card with good grades, we would perhaps receive €5 from grandma. But that is no longer is the case.” Gudrun explained that her rewards system was not tied directly to the quality of her grades:

For the report card we always received perhaps something little, but the same regardless of if you had bad grades or better ones. My sisters and I would get the same thing. And never something like: if you got a One [highest possible grade], then you received €10, or if you received a Two, five or something. We never had that.

Günter reported that his family did not have a contingent rewards system in place for grades. However, he expressed how his parents support him, irrespective of his academic outcomes, noting “They motivate me by all means. And now when something is not so good, there is also no drama. And they just support me if there is any kind of problem or if I need help.” He explained how his parents verbally motivate him to work hard in school:

They tell me, “If I do that now, then you can later attain something, for example. But they also say, “If you don’t do something now, then it isn’t everything in life if it goes badly.” And I strive to do well.

He clarified that his parents never nag him to complete school work, declaring “It is all from me.” He added how receives parental assistance in homework, observing “My mother just knows very much, and we have conversations about it and I gain a few pieces of information from her.”

Gottfried also reported active assistance from his mother during his first three years in the Gymnasium:

I think my mother, above all, strongly supported me from the fifth through the seventh grade. She always studied with me for exams, testing me on the day before the exam. And I think that brought me in the right direction so that I can now do it independently. Now I can independently prepare myself, even if I sometimes do not really want to. In spite of this, I know that I must do it.

Although she no longer provides direct help with homework, Gottfried explained her current involvement, noting “My mother asks me sometimes what we did during class or if we have a special exam. So she wants to know what we recently have done. But I do the preparation on my own, as I already said.” Gottfried described how he took responsibility for his academic preparation, adding “I began to prepare myself all the time in the seventh grade—to write out my own summaries of things, and now since the eighth grade I do that basically alone.”

Gudrun also described how she has access to academic assistance from her family, explaining “If there is something that I didn’t understand, then I come and

ask my mom and dad or my two big sisters.” She described a more active level of parental involvement than the three other German participants:

I received just a little bit of pressure, but not so much now. I mean—there was a time when my sister received bad grades. So the expectation is lower, and with me they are higher. But that is just what my parents want—for the child to receive a good school diploma.

Gudrun explained how the location of her parents’ work allows them to maintain close contact, noting “My parents have a shop, and it is directly under our house. Then we can always eat together, but they are otherwise below in the shop.” She stressed that her parents do not scold her to complete homework, noting “I do homework independently, and actually, since the third grade my mother no longer looks at it.” Gudrun described how her family occasionally discusses current events relating to academic content, reporting “Now and then, we will talk about politics or something interesting that is in the newspaper. . . . But there is not always enough time for that.” She described how her family follows her academic performance with interest:

They are just happy and find it good that I have good grades. But, also if I were to receive bad grades, like a Three [on a 6-point scale], that would also not be so bad. I mean, they would not be enthusiastic in that case, but it would be OK.

Chapter IV Summary

The current chapter consisted of a presentation of the words of the participants, organized around four major categories. The students described routines for academic preparation, pressures to attain academic success, the daily experience of classroom realities, and how the significant adults in their lives affected their academic motivation. By presenting the data of German and American students simultaneously, I accentuated the cross-cultural elements of the study. In the next chapter, I analyze the data through the constructs of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997). I consider the usefulness of the two theories to explain the students' words and present instances where theory and data do not align, suggesting other realities of academic motivation.

CHAPTER FIVE

ANALYSIS

This chapter essentially addresses the second and fourth research questions relating to the theoretical frames of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1997). Those two questions are the following:

In what ways do the experiences of academically gifted students in Germany and the United States support understandings posited in self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1997)?

How useful are self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1997) in understanding the motivation of gifted German and American students?

I intentionally phrase these questions in a bi-directional manner to align with the phenomenological methodology. Through this approach, I analyze how the data support the theories, then how the theories explain the content of the data. Since my point of reference is always the life-world experienced by the nine student participants, I do not cite literature to support my analysis. However, in the concluding chapter, I connect the data and analysis to existing literature.

In the first major section of this Analysis, I describe the extent to which my understanding of the phenomenon of gifted academic motivation, as

established through the interviews, written responses, and site visits, aligns with the elements of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997). I organize the presentation according to the three attributes of self-determination theory and the nine attributes of flow theory. To be sure, there are times when the evidence presented in the Analysis overlaps with that offered in the Presentation of Data. In those instances, I shorten or summarize the citation, allowing the reader to refer back to the Presentation of Data for the statement within its more complete context.

In the second major section, I evaluate the extent to which the two theories clarify the examples of gifted academic motivation described in the Presentation of Data. This represents a more speculative endeavor where I consider how accurately and completely the theories elucidate the data. Again, I reference the words of the participants that appear in the Presentation of Data, though often in abbreviated form. Here, I evaluate the relative explanatory power of the two theories with respect to the data. Based upon this analysis, I discuss if there is *something else* at work that resists the understandings posited by the two theories. Not to give away the last chapter, but an exploration of that *something else* represents the primary content of the Conclusion.

Philosophical Overview

Similar to in the Presentation of Data, I support the assertions in this Analysis primarily with the voices of the participants. Prior to the Presentation of Data, I followed Van Manen (1990) by reflexively admitting how the thematic organization was largely determined by the content of my questions, the substance of the theoretical frames, and my own fore-meanings concerning gifted academic motivation. This is equally true in the Analysis, since the very structure of the presentation follows specific aspects of the theories. My intention is certainly to follow the prescription of Moustaches (1994) “to set aside biases” and to “come to a place of readiness to gaze on whatever appears and to remain with that phenomenon until it is understood, until a perceptual closure is realized” (p. 73).

However, I am also mindful of Gadamer’s assertion that “Interpretation begins with fore-conceptions that are replaced by more suitable ones. This constant process of new projection constitutes the movement of understanding and interpretation” (1975, p. 269). Gadamer (1975) did not necessarily view prejudice (the German term being *Vorurteil*, meaning *pre-judgement*) in a negative sense, claiming that “a text can present itself in all its otherness and thus assert its own truth against one’s own fore-meanings” (p. 271-272). With this in mind, I submit the two theories as my fore-meanings and lenses through which a deeper understanding of gifted academic motivation can assert itself.

Self-Determination Theory

According to Deci and Ryan (1985), social factors that enhance autonomy, competence, and relatedness lead to intrinsic motivation while controlling social factors undermine intrinsic motivation. The nine students spoke extensively about both controlling and autonomy-supportive elements of their academic activities. In the Presentation of Data, I grouped the participants' comments into motivational categories, including the realities of preparation, realities of extrinsic motivators, realities of the classroom, and realities of the adults in the students' lives. As I evaluate the students' relative autonomy with respect to academic tasks, I draw from all of these areas of their motivational experience. I analyze the responses of the American and German students together at this point, calling attention to motivational differences as they arise.

Deci and Ryan (1985) pointed out that relative levels of autonomy-support vs. control are activity-specific and always determined by the individual's perception. For example, two students may interpret a teacher's motivational approach differently. One student may feel that a teacher offers controlling feedback while another student may experience that same feedback as informational. Since this would suggest nine separate motivational perspectives, my task was to consolidate and interpret the responses through the lens of self-determination theory (1985). The Review of Literature focused upon several aspects of autonomy, including interest, pressure/tension, choice, praise, rewards,

deadlines, and surveillance. The students' comments provide insight in these areas from the perspective of academically gifted students in Germany and in the United States.

To accentuate the idea that motivation is in no way a binary concept (either exclusively intrinsic or exclusively extrinsic), Deci and Ryan (1985) proposed a regulation process where extrinsically motivated activities gradually become internalized and may become part of the individual's sense of self. Since intrinsic motivation is subject-specific, the students may have attained different levels of the continuum of regulation. For example, Amelia may have reached a state of internalization with respect to math; yet she may also be at the level of introjected regulation with respect to history. By examining the students' statements regarding goals for the disciplines of math and history, we can make a rough determination of their relative levels of internalization.

School as Gateway to College

In their formulation of self-determination theory, Deci and Ryan (1985) describe interest as a measure of intrinsic motivation. Students who are intrinsically motivated to complete academic tasks would complete these activities for their own sake without extrinsic reinforcement. It is difficult to characterize the students' motivational orientation for academic output, since they all view their current school as a gate through which they must pass to reach university acceptance. The American students reported overt focus upon

preparation for college entrance exams such as the SAT or ACT. Alice noted: “It was private lessons . . . just maybe every two weeks.” Awareness of a specific score requirement has placed particular pressure on the American students to take the exams multiple times. For example, Andrew admitted “I wanna get like 2200” on the SAT. They also expressed concern about attaining exemplary Advanced Placement scores, which could mean receipt of college credit for high school courses. For instance, Amelia explained “AP exams are very much on my radar right now (laughs). . . So I’m pretty anxious.”

The German students devote similar preparation and worry toward receiving satisfactory *Abitur* scores. Gudrun stated “It just motivates me because later, I want to study at the university. . . . And for that I want to achieve a good result in the *Abitur*.” Gottfried pointed beyond college to his professional aspirations, noting “I must receive a good degree in order to attain a good profession later in the future.” Although both groups of students expressed interest and enjoyment in the process of academic learning, they often referenced broader goals, which included impressing the teacher, obtaining the highest possible classroom grade, gaining a high class ranking, and receiving college acceptance. Gudrun bluntly admitted an extrinsic orientation with respect to her school work, stating “I think that success should certainly be defined through grades.”

The American students often spoke of their motivation to complete academic assignments as a way to relieve pressure. Amelia clarified her approach in behaviorist terms, mirroring a drive-reduction orientation, stating “That motivates me to do more tasks as efficiently as possible, and then I get to cross them off of my list.” The extent to which tasks remain on her “to-do” list represents the quantum of stress in her academic life. From that perspective, her purpose is to systematically complete and eliminate the stressful tasks. Though Amelia finds this process enjoyable, the academic content of the activity may be of lesser concern than the completion process.

In contrast, the German students did not speak in terms of feeling pressure to complete assignments. According to Gudrun, “When someone does not complete the homework, they get a check mark. And when you have three check marks, you get a letter to your parents.” The German students do not receive a specific grade for submitting homework. Rather, they complete it to enable them to positively participate in class discussion, which is assessed directly by the teacher. Rather than viewing assignments as a required task for which they receive a contingent reward (grade), the German students consider the assignment a means to improve their knowledge of the subject matter. Günter expressed this view with his comment that homework represents “content of the course.” Gisela articulated the motivational function of teacher authority, stating “I completed the assignments because my teacher required it of me.”

With this in mind, the German students did not report experiencing homework as a form of stress; rather, it was an essential element of the course. In fact, most of the stress that they revealed originated in the process of assessment. Gottfried noted “The stress of the thing is always right before the test.” In Germany, students do not technically *take* an exam; rather, they *write* [*schreiben*] an exam. This means that German exams involve extensive written analysis, as opposed to the objective multiple-choice assessments that are ubiquitous in the United States.

Based upon their extensive preparation routines, particularly in text-based courses like history, the German students are required to reproduce a significant amount of content during assessment. For example Günter detailed his memorization process, noting “I write out a summary of the important things. After that I try to repeat it once, often reading through it and doing it again. Then I study the sheet until I no longer need it.” The strenuous testing regiment in Germany prepares students for the rigor of the *Abitur*. Günter acknowledged the practical value of the *Abitur*, noting “Throughout Germany there is the same *Abitur*. So one can simply compare students and this can rank students for jobs.”

Since the German participants have provisionally chosen their major subjects that will ultimately be tested on the *Abitur*, every lesson holds both short-term and long-term implications. Students want to participate in class to ensure a favorable oral grade, they attempt to digest material so they can successfully

complete course assessments, and they take part in long-term study to prepare for the pending *Abitur*. Just like the American students, the prospect of college admissions lurks behind all classroom activities. The German students may find the academic content interesting, enjoyable, challenging, and valuable at the same time. For this reason, assessing motivation is content-specific and represents a moving target, since the students are constantly moving upon the continuum of regulation from extrinsic toward intrinsic orientation.

The Presence of Grades and Assessment

The presence of extrinsic factors, such as grades and assessment complicates the evaluation of motivational orientations for both groups of students. Their expressed need to be academically successful embodies an internalization and outward representation of their sense of self. The American students frequently referred to themselves in terms related to report card results. For example, Amelia asserted that she was “a straight A student” who was recently awarded the honor of Cum Laude. Alice admitted her goal with respect to class ranking, stating “I’d like to be in the top two kids, hopefully.” Although the students associated their self-image with academic achievement, they also described some enjoyment in the learning process.

Amelia expressed how her enjoyment is connected to her relative level of success, noting “I love the feeling that I get after I do well on something.” Her words express a focus upon the outcome of the activity, rather than upon the

intrinsic enjoyment of the task itself. Amelia clarified her perception of the instrumental value of academic success, stating “I like to apply what I learn to other life situations.” She added a series of questions that clarified her motivational orientation, asking “How can I use this? How is this applicable into how people are doing this in real life?” “What is this going to get me?”

Similarly, the German students characterized the motivational role of grades. Gottfried asserted that “report card grades should naturally be as good as possible. That is the prerequisite for the future.” Gudrun expressed a similar view, stating that “success should certainly be defined through grades.” Günter shared Gudrun’s view of the importance in attaining satisfactory grades. However, he also pointed out the need for longer-term knowledge that could be beneficial beyond graduation from the *Gymnasium*. He clarified “More important still, I think, is that you learn something and you can bring it along to your university studies.” Günter’s attitude still represents an extrinsic orientation with respect to the instrumental value of acquired knowledge for his subsequent participation in higher education. However, his longer-term valuation of learning characterizes the regulation process from extrinsic toward more intrinsic goals.

Gisela expressed a more integrated and self-endorsed approach to learning, stating her “ambition to solve problems, to demonstrate strategies, and to develop logical thinking.” She touted the informational and validating characteristic of grades, clarifying “I think on the one hand that I am motivated

because I see it as a confirmation for me.” By wanting to solve difficult problems and develop logical capacity, Gisela expressed the process of internalization of extrinsic goals.

Examples of Independent Interest and Detail

While the American students were eager to detail their routines of study and homework completion that have fostered their academic success, they were less inclined to speak freely concerning details of academic content from their courses. They were even less forthcoming with regard to their intellectual interests beyond the curricular content of their courses.

Of the five American students, four made reference to rather generic areas of academic interest. For example, Alice expresses interest in “Kings and Queens of England or the World Wars, the Holocaust and stuff like that.” She added “I really enjoyed the 1920s—I really like watching the societal changes in history.” Andrew also offered only the most general examples of his academic interests, stating “I love studying the wars. That’s just been very interesting. I like knowing what presidents did in the past.”

With respect to private reading, most of American students expressed that they did not have time during the school year. Ashley admitted reading a list of novels that is rather typical of American teenagers, though not necessarily reflecting her own personality or a driving interest. She explained “I read *Night* by . . . I don’t remember . . . I enjoy *Hunger Games* and I guess the trendy books,

I guess you could call them, like *Eclipse*, and *Twilight*.” Amelia explained that the purpose of her personal reading was to find distraction and humor, offering Tina Fay’s *Bossy Pants* as her current choice.

However, of the five American students, only Amelia offered a significant amount of specific curricular details from her schoolwork. In several comments, she referred to the following topics:

Polar coordinates. . . . How to multiply matrices. . . . Electric fields. . . .
Presidents Eisenhower and Obama. . . . The current presidential
candidates. . . . Olympia Snowe. . . . The role of the federal government. . .
. The Civil Rights Movement. . . . Emmett Till. . . . Rosa Parks. . . .
Gandhi. . . . Illegal immigration. . . . *Slaughterhouse Five*. . . . The
Dresden fire bombings. . . . Post-traumatic stress disorders. . . .
Dissociative disorders. . . . German prisoner of war camps. . . . Rhetorical
strategies.

Similarly, the German students were reluctant to volunteer insight into their personal intellectual endeavors. None offered titles of books that they were reading for pleasure. However, in contrast to the Americans, all four of the German participants referenced significant content from their courses in very technical terms. Without specific probing, Gudrun mentioned details in math, chemistry, music, and religion, including “Inflection points. . . . Analysis of functions. . . . Discrete problems. . . . Percentages. . . . Experimental procedures. .

. . . Chemical reaction. . . . The Renaissance period. . . . Triads. . . . Cadences. . . .
Biblical themes. . . . Meditation.”

Gisela referenced “the appearance of male and female germ cells” from biology class and Schiller’s drama *Nathan the Wise* for German class. With reference to physics and calculus, Gottfried mentioned “Metabolism of our bodies. . . . Instantaneous power and average output. . . . Accumulation of the limit value in math. . . . Velocity of a skier at the end of a ramp (with comprehension of the friction).”

Günter cited an array of technical content from calculus, history, chemistry, and economics, including “Series of functions. . . . Modeling. . . . Examination of extreme cases. . . . Holy War of Islam. . . . The terror attacks. . . . Citric acid cycle. . . . Experiment on saturated hydrocarbons. . . . Negotiated wages. . . . Minimum wage. . . . Accrual of price. . . . Constitutional principles. . . . Undercutting of wages. . . . Precarious work conditions.”

Interest Limited to the Scope of the Course

The American and German participants articulated different motivations for participating in classroom activities. Amanda explained that she was one of the only students in her history class who consistently completes the assigned reading, noting that “there’s only like maybe three or four people who actually read—maybe.” She considers her participation a way to keep the class on track.

Amelia articulated how she becomes frustrated when her classmates' lack of preparation often leads the teacher to topics beyond the scope of the course, admitting "It's kind of bothersome." She went on to explain that she frequently poses questions in class to mitigate her frustration of "not getting to the answer as quickly as possible."

The American students' active participation in class allows them to exert some control of their learning during the 45-minute period. None of the American students mentioned a participation grade as a motivating factor. Rather, they are more interested in having their questions answered and relieving their curiosity. Amanda expressed this sentiment, asserting "I don't like to just sit there with a question and not have it answered. That bugs me so much."

In contrast, the German students revealed that their classroom participation was motivated primarily by the oral grade attached to it. Gottfried provided a reason for frequently volunteering to answer questions in class, stating that he wants to "make as good an impression as possible on the teacher." Although Gudrun declared that she does not like to be called up to the board, she often volunteers anyway to enhance her grade, explaining "I always just try to volunteer. You can have a buffer for your overall grade if you have a good oral grade." Günter expressed his lack of fear volunteering in class and noted that "it also carries with it an oral grade" and affords him the opportunity to influence the course and "push the instruction forward."

While observing a math class in Germany, I was struck by the nonchalance with which the German students raised their hands and volunteered to answer questions [*sich anmelden*]. The same group of six students, including the four from the study, had their hands in the air throughout most of the class period. Although most were eventually recognized by the teacher, they seem to have made their point simply by raising their hand. Perhaps the cumulative effect of constantly volunteering to answer questions contributed to this “good impression” that they sought to make upon the teacher.

Both Herr Gärtner and Frau Grünewald expressed that they assessed both the quality and quantity of the students’ participation in class. From a motivational perspective, it is difficult to distinguish between participation to achieve a grade and participation to attain knowledge. Frau Grünewald spoke of her desire to instill a love of knowing [*Wissenslust*] in her students. In the case of the German students, the oral grade has clouded the motivation of students to take part in the discussion and cast doubt on the purity of the students’ motivation to learn, at least from the perspective of the teacher.

Examples of Choice

Deci and Ryan (1985) predicted that the perception of choice enhances the internalization process of extrinsic goals. This aspect of self-determination may represent a culturally significant difference between the American and German educational systems. While both schools offered students choices with respect to

their particular courses, the available options exemplify a point of departure. For the American students, the choices available to students were essentially related to the relative difficulty of courses. Although all enroll in core courses, such as math, science, English, and history, students may choose one of three tracks, including regular, honors, and Advanced Placement.

While those students wishing to compete for prestigious university acceptance typically enroll in the AP track exclusively during their junior and senior years, they have the option of taking less rigorous versions of the core courses. For example, Alice and Ashley chose to enroll in regular pre-calculus as opposed to the more rigorous honors analysis course taken by the other three participants. Ashley also clarified that she selected regular physics as opposed to the more advanced offerings, explaining “I knew I wouldn’t do as well there, so I just took the regulars course load.”

In most American public schools, students receive a significant boost from taking Advanced Placement courses over regular courses. For example, a student receiving an A grade in an AP American history course might receive five points towards GPA, while someone obtaining the same grade for a regular American history course might receive only four points. Students in the Advanced Placement track often take four or five advanced courses per year. Over a period of two or three years this affords them a significant advantage on GPA. In fact,

for a student to reach the top 10 percent of the graduating class, Advanced Placement courses are essential.

The Ambrose Academy does not have such a weighted grading scale for Advanced Placement courses. Students taking an Advanced Placement course receive only three additional percentage points on their overall semester grade. This means that the courses are still scored on a four-point scale, with a mere three percentage points added to the final grade. A student receiving 95% would be pushed up to 98%. Students scoring 98% or above in an AP course may not even receive the full three-point benefit, since there is a cap at 100%. The students in the study were clearly aware of the practice of GPA gamesmanship and took pains to report that they were taking the most rigorous possible academic courses.

Amanda indicated that she “would rather take the harder classes, and not get such good grades, than taking an easy class, then get the highest GPA and valedictorian.” She explained that her chosen schedule is more rigorous than that of most of her classmates, noting “I’m taking three AP classes and two honors classes . . . and I actually haven’t had a free period my entire high school career.”

While the American students can choose the level of rigor of their courses, the German students have the opportunity to select elective courses during middle school and can identify their two major subjects during the upper school. Gudrun specified her elective choices, noting options including “either bilingual political

economics. . . . Then you could also select computer science. Italian or . . . Latin or French.”

Once a German student decides upon a major subject, they have no further options concerning the level of difficulty. For those subjects, they will be on the most rigorous track until graduation. The Germans also do not have the Advanced Placement option where they can receive college credit during their time in the upper school. However, testament of the German curriculum’s rigor is the fact that students graduating with the *Abitur* are typically placed as sophomores upon acceptance to American universities. During the introductory phase [*Einführungsphase*], students at the Goethe School have the opportunity to try out a major subject for one year. This allows another form of choice, since their teachers provide enough feedback to assess the appropriateness of their chosen majors.

While both the American and German students described comparable choices with respect to their course schedules, only the American students described choices as the classroom level. For the American students, this choice is limited to the occasions when they have assigned projects. In these instances, students have the opportunity to select topics of personal interest, provided they align with the goals of the overall assignment. Alice described the use of projects in history class, noting “We’ve had maybe two other projects this year and this is the third one, so she’s very nice about letting us choose what we wanna do.”

Alice referred to an individual project in Advanced Placement English class, explaining “We’re writing a research paper, and we got to choose our topic. . . . I mean there’s a lot of freedom in choosing stuff like that.”

Perhaps the clearest example of choice for the American students was their participation in the school-wide cross-disciplinary event, which occurs four times per school year. For this event, students write research papers, prepare poster presentations, and participate on panel discussions in various parts of the school building. The day-long event allows students to research areas of interest related to multiple school subjects. The general topic is thematic and relates to some aspect of cultural studies, such as the progressive movement or civil rights.

During an observation of Dr. Aldridge’s Advanced Placement American history course, she turned the discussion to potential research topics for this event. As students proposed and evaluated possible topics of research, their level of interest and engagement transformed. From a motivational perspective, the students experienced autonomy-support through Dr. Aldridge’s informational comments. Still maintaining her direct approach, she did not mince words when a student would suggest an inappropriate topic. However, as she worked through several proposals, the students seemed to feel empowered and acted as if they were partners in a process, rather than the recipients of their teacher’s wisdom.

In contrast to the feeling of perceived choice experienced by the American students, the Germans experienced few options at the classroom level. Gisela

described her lack of control at in class, declaring “I had no choices.” Gudrun concurred, stating emphatically “There were actually none.” The German students expressed a respect for the authority of teachers and their knowledge of academic content. Gottfried characterized this respect, stating “I think we have good teachers who are knowledgeable about their subject. And they can, for the most part, present the information so that we can understand it.” In keeping with that respect, the German students assume that their teachers are qualified to make all decisions concerning classroom practice. The German students do not expect to make choices in class and consider the concept a bit odd. Since the German school system has been constructed upon a strong authority structure, the students never experienced choice, so they consider strict controls in the classroom to be completely normal.

During observations in Germany, all aspects of the class were directly controlled by the teacher. As students raised their hands to answer questions, the teacher recognized them. Unlike discussions in the American school, the German classroom had few student-to-student exchanges. This created the impression of a relatively tense classroom atmosphere; however, the German students have accepted that atmosphere as standard practice. They neither expect to make choices, nor do they expect to necessarily have fun in class. Günter expressed these sentiments, stating “I consider school a place for working.”

This approach is in direct contrast to the class discussion described by Andrew in the American school. He reported on how Amelia created a diagram of a mostly student-driven discussion in history class, describing how Dr. Aldridge's students were "going off on huge tangents over here, talking about World War II, going off to professional baseball for a little bit, the Masters, and coming right back in to the topic." Dr. Aldridge established an approach where she leveraged student interest and allowed them to influence the direction of conversations. This created a student role that is divergent from those within the German system. The American students felt that they could ask questions, shift the topic, and exercise direct control of the class time. Dr. Aldridge's overtly controlling feedback was always tempered by an array of student choices. This created a complicated classroom with a tenuous balance between teacher control and autonomy-support.

In contrast, all aspects the German class period were controlled by the teacher. Strangely enough, the German students seemed to control the physical classroom, since the teachers traditionally rotate from room to room. Conversely, the American teacher has his or her own classroom throughout the school day. So the room represents the teacher's territory and often contains posters, diplomas, and personal items selected by the teacher. Surprisingly, as students entered the American classroom, they seemed to establish a measure of control through their participation.

Pressure Related to Tests and Performance

Similar to their assertion that the perception of choice fosters intrinsic motivation, Deci and Ryan (1985) suggest that the feeling of anxiety undermines intrinsic motivation. Despite qualitative differences in the type of assessment (i.e. essay vs. multiple choice), the German and American students shared similar attitudes with respect to assessment. Both Amelia from the Ambrose Academy and Gudrun from the Goethe School expressed their experience of anxiety within the context of testing. Amelia explained that she only feels this pressure prior to testing, noting “I feel more stressed the day before a test. . . . Now I just need to bring my knowledge to the table.” Gudrun expressed similar sentiments, observing “Prior to a test, you clearly feel a bit excited, but now it is not quite so bad.”

Because the participating students have a demonstrated record of success on assessments, their stress seems to dissipate as the assessment itself begins. Since they all reported a pattern of consistent and thorough preparation for exams, the assessment becomes a positive experience where they can demonstrate their knowledge. Amanda and Gottfried described parallel feelings concerning the press of time during assessment. Amanda clarified “When it gets toward the end of the test and I look and I’m like, ‘I still have five problems left and five minutes’ (laughs), then I start to freak out a little bit.” In similar terms, Gottfried

noted “At the beginning of the test I am just not so certain if I will finish. But I always have gotten it done.”

Günter described a practice of creating anxiety for the purpose of improving his performance on assessments, noting “I put a little pressure on myself because I have the feeling that I can quickly jump into the test and I think faster if I am under pressure. And then I put a little pressure on myself, but I think I don’t have to absolutely have the pressure.” The students described a lack of self-doubt during and after assessment, as if they had grown accustomed to receiving outstanding grades in recognition of their preparation. Amelia described her thought process while testing, reporting “OK. I know I’m prepared for this. I’ve done all that I can by now.”

Despite her own record of successful completion of exams, Gudrun recognized the potentially adverse effects of exams on her less high-achieving classmates, noting “Sometimes the grades demotivate also, particularly if students are a little worse. Then they get those grades and find themselves under pressure so that nothing else really works.” The students in the study seem to enjoy the affirmation that they receive through successful completion of assessments. Gisela mentioned how her consistently high grades perpetuate themselves, observing “I think on the one hand that I am motivated because I see it as a confirmation for me.” The students seem to view assessments as a motivational tool that helps them maintain their work ethic.

Controlling vs. Autonomy-Supportive Feedback

Another aspect of assessment related to self-determination theory (Deci & Ryan, 1985) concerns the dichotomy of controlling vs. informational feedback. All feedback has a controlling element, since the person delivering the feedback assumes a position of authority. By accepting and responding to that feedback, students recognize that authority and adjust future behavior in response to the words. With respect to future behavior, that feedback can either foster or undermine intrinsic motivation. Because of the central importance of students' perception of feedback, the manner and tone of delivery may be as significant as the content.

Both the German and American students reported minimal feedback from teachers and parents, often in short and non-descriptive terms. They also reported similar types of feedback from teachers. For example, Amanda described her appreciation of Dr. Aldridge's directness in appraisal of students' comments in class, noting "She's not a very beat-around-the-bush kind of person." Alice responded positively to Dr. Aldridge's written comments on her essays, explaining "She gives really good feedback on all of our papers. And even when we just have questions from the book that we have to answer, she'll write like a lot on them." Dr. Aldridge's in-class comments were delivered in a highly controlling manner (i.e. her 30-minute rant on poorly-written history essays). She assumed a strong position of authority and mocked the students' efforts through a

series of insults that were meant to be both humorous and cutting. She accentuated this authority in her individual interview by reporting her unwillingness to change students' grades, declaring "I never will haggle a grade with them. They just have to take it." Each student in Dr. Aldridge's class likely had a different interpretation of the comments, ranging from highly controlling to autonomy-supportive. The participants in the study responded positively to her comments and were grateful for her straight-forward approach. From their perspective, the informational content of the feedback outweighed the controlling element.

From the perspective of self-determination theory, they experienced the feedback as autonomy-supportive and it fostered internal regulation of the extrinsic goals associated with the course. However, the students also expressed awareness that Dr. Aldridge's rigorous approach would prepare them well for their longer-term goal of passing the Advanced Placement exam. This creates confusion between intrinsic interest in course content and the extrinsic goal of passing the AP exam. Amanda clarified this distinction, stating that Dr. Aldridge's comments presented "just a better way to write, and also better ways to integrate information." The implication of Amanda's statement is that Dr. Aldridge provides her with the skills to write a better essay for the AP exam. Amanda admitted to being disappointed with her grade in Dr. Aldridge's course during the first semester, revealing "I've made straight A's my entire life. I had a

B last semester though. It made me sad (laughs).” With her improved performance during the second semester came increased interest and enjoyment in the course, suggesting a form of self-efficacy where success accentuates interest.

The German students reported fewer instances of either controlling or informational feedback from their teachers. Gottfried explained that in math class “Herr Gärtner responded with limited praise and non-informational confirmations, such as ‘Yes, that is good!’ or ‘Super!’” Gottfried offered his perspective on teacher comments, noting “Of course there is feedback in the form of grades when we take an exam. Or I also receive an oral grade. This is based upon how we volunteer and so forth. And it sometimes occurs, but rarely, that you get feedback from the teacher when you volunteer.” Günter stated that during class “you actually now receive little feedback.” He described a more formal venue for feedback “during the grade conference at the end of the year.” The feedback for German students is often delayed and appears in the form of written comments on assessments, report cards, and year-end conferences.

Deadlines and Procrastination

While the quality of feedback influences the regulation of extrinsic goals, individuals interpret imposed deadlines as controlling and hence, as an undermining influence on intrinsic motivation (Deci & Ryan, 1985). Since deadlines are ubiquitous in the educational settings in both the United States and Germany, there is no need to detail their presence in the two schools. However,

the students' reaction to those deadlines provides insight into their relative approaches to completing academic tasks.

Neither the American nor the German participants reported engaging in academic procrastination. In fact, they indicated a common practice of completing assignments on time or even early. Amanda described her approach to completing academic tasks, noting "I usually don't procrastinate. . . . I *schedule* when I'm gonna do it." Amelia admitted to being "kind of OCD about things" related to schoolwork. She explained her compulsion to start early, noting "If I get an assignment that's due in a week or two, I have to . . . at least start on it by the end of the week—get something going, just so it doesn't slip my mind." She finds the thought of receiving a zero on an assignment "terrifying." Dr. Aldridge described how Alice completes work well ahead of the due date, observing "She's very anxious. She'll do an assignment before I've assigned it. Or she'll do an assignment three days ahead of time."

Similarly, the German students all reported a lack of procrastination and the habit of studying and completing homework immediately after arriving at home. Gisela articulated a simple routine echoed by all of the German participants, noting "I do homework directly after school . . . always on the same day."

This lack of procrastination provides evidence that all nine students are progressing along the continuum of extrinsic motivation toward identified

regulation. They have identified with their chosen academic goals as fundamental aspects of their personality. Because the notion of academic success has become ego-involved, they invest more than their classmates in the process of obtaining good grades. Their success has perpetuated a cycle of organization and work ethic that moves them forward as they compete with their peers to achieve the highest possible class ranking. With respect to this type of competition, Andrew noted “It’s just kind of who I am.”

Perceived Competence

In their formulation of self-determination theory, Deci and Ryan (1985) put forth perceived competence as a basic human need. The human tendency to explore and affect changes in one’s environment (DeCharms, 1968) manifests itself in experiences of repeated success or competence. Since the nine students in the study have demonstrated consistent academic success for several years, it is not surprising that they expressed a relatively high appraisal of their own abilities.

Amanda characterized herself as “a pretty naturally-talented person.” She assessed her capacity to digest material, noting “I’m pretty good at absorbing information, so if I read through something, I can kind of just remember it.” Similarly, Ashley noted “I think the concepts come easily.” Amelia described how her spatial memory enhances her level of reading comprehension, noting “I can remember if I read a fact and it was on the left side of the page, and then I can remember what else was in the rest of the page.”

As a cultural note, Germans tend to have difficulty accepting compliments without downplaying or minimizing the content. They tend to respond with a self-deprecating retort that often questions the accuracy of the compliment. Similarly, Germans are not typically comfortable asserting and describing their virtues. However, Gottfried was direct in his self-appraisal, observing “I think I can understand things quickly. I am good at learning and recalling concepts.” Gisela expressed similar sentiments concerning her abilities, declaring “I have always had talent . . . for logical thinking.” In typical German fashion, Gisela went on to qualify her statement, stressing how work ethic is the key to her success, stating “On the one hand I have the ability to understand the instruction well, which is an advantage. However it is also because I prepare.”

This academic preparation was characteristic of both American and German students. All nine students tempered their descriptions of their innate talent with accounts of work ethic. Amelia noted that she spends “a lot of time reading and focusing.” Similarly, Amanda offered insight into her work ethic, reporting “A lot of people call me an overachiever because I always work hard and put in a lot of effort when I do things.” Alice described her comparable approach, admitting “I tend to over-study a lot, but that’s what I do.”

Amelia expressed how her classmates’ perceptions do not align with reality, stating “A lot of people think that just because I’m quote unquote like ‘smart’ . . . that everything just comes easy. And it doesn’t, ‘cause they don’t see

a lot of the outside work that I do.” Their rigorous study routines and long hours were characterized by Andrew, asserting “It’s not uncommon for me to be up ‘till 12, 12:30 every night.”

Günter reported a similar focus on study, explaining “I am alone. Totally alone in the room. No other things to do. Then, only math book, exercises, and formulas.” This aligns with Gudrun’s time-consuming approach to studying history, noting “When I have an assigned reading or notes, I read them through three to four times. Then I can already recite it by heart.” Gisela acknowledged that her study routine has grown more rigorous as she has progressed through the upper school, asserting “The assignments are more time-intensive and involve more reading and more writing and more reflecting.” Gisela identified three terms that characterize her academic success, including “Industriousness, ambition . . . and perhaps discipline.”

Competition

The accounts of the American and German students suggest a combination between innate talent and sustained patterns of organized effort, based upon substantial academic goals. Deci and Ryan (1985) suggest that that the academic goals may develop from an extrinsic toward an intrinsic orientation over time through internal regulation, which represents the educative process. Outward signs of behavior may partially reveal the relative point upon that continuum.

However, the students' comments demonstrate that the continuum is ever-changing over time and with respect to specific academic pursuits.

All nine students indicated throughout the interviews a desire to sustain their long-standing pattern of academic success. Although learning does not necessarily represent a competitive process, the systems of assessment and ranking present in both schools has created an environment where students may view fellow classmates as rivals. The students seemed to be aware that their major assessments (SAT in America and *Abitur* in Germany) were designed to create spread and sort students. Andrew was keenly aware that his initial score of 2040 on the SAT was less than satisfactory for his intended university. Likewise, Amelia planned to retake the exam to better position herself for college acceptance, remarking "I'm still kind of on edge about those. I need to start preparing more so I can raise my score from previous."

Similarly, Günter acknowledged the significance of the *Abitur* and its function of sorting students both for university study and future employment, explaining "I find it meaningful that we have it. Throughout Germany there is the same *Abitur*. So one can simply compare students and this can rank students for jobs."

Competitiveness can be viewed as an outward sign of extrinsic orientation that is common to both the American and German students. However, it does not represent a construct that is mutually exclusive with interest. In fact, the

participating students described themselves as highly competitive and highly interested in their academic endeavors. The challenge is to determine if that interest is based upon enjoyment in performing the academic tasks or if it is based upon the enjoyment of success. The students' comments on competition provide a window through which we can come to terms with this subtle yet important distinction.

All nine students admitted to being highly competitive in the areas of academics and athletics. However, the American students seemed more comfortable articulating the extent of their competitiveness. When asked about whether he was competitive, Andrew seemed proud, responding "Yes. Extremely!" Similarly, Amelia gleefully replied "Yes sir! Very!" Amelia admitted to an ongoing academic competition with her older siblings, asserting "I like to see what they do and I like to try and . . . *surpass* what they've done." Likewise, Ashley related her longstanding competitive drive, explaining "I guess it's just my personality. . . . Growing up I was always wanting to be the best."

Alice expressed a competitive goal with respect to her grades and class ranking, declaring "My GPA is a 96 right now and I'd like to maintain that. And then, I'd like to be in the top two kids, hopefully." Amanda shared a similar goal, offering "It would be nice if I could be valedictorian or salutatorian." These assertions by the American students imply much more than learning material to

enhance their knowledge of the subject matter. Their goals involve a comparison of measurable academic outcomes with fellow students.

In contrast, the German participants were less comfortable declaring their competitive approach to academics. Only two of the German students admitted possessing this attribute. Gottfried affirmed his competitiveness, stating “Yes, I want to achieve something.” Similarly, Gisela replied “By all means. . . . Well I am very ambitious.” However, Gisela clarified that grades represent a personal affirmation, noting “I think on the one hand that I am motivated because I see it as a confirmation for me.” She was more comfortable touting her work ethic, noting that she is “a very industrious as a student.”

None of the German students articulated specific academic goals that involved a comparison with their classmates. In fact, Günter took pains to minimize the importance of school, asserting “School is not everything in life.” Because the German students exhibited fewer outward signs of competitiveness, one might postulate a more intrinsic motivational orientation than that of the American students. However, the statements by Gottfried and Gisela referenced wanting “to achieve something” and being “very ambitious” with respect to a future moment. The two students acknowledged the instrumental value of their current education, where success represents an outcome that will allow them to pursue their chosen academic and career paths. Just like their American counterparts, interest in the subject matter is clouded by interest in success.

Relatedness

In their initial formulation of self-determination theory, Deci and Ryan (1985) posited autonomy and competence as the basic human needs necessary for an individual to attain psychological well-being. They later added the concept of *relatedness* to this construct, clarifying that the quality of social relationships can influence motivational orientation (Deci & Ryan, 2001). Most prominent among these relationships are those with parents, peers, teachers, and school administrators.

From a self-determination theory perspective, the essential distinction concerns the level of autonomy-support vs. the level of control in the relationships. For example, parents displaying control through contingent rewards and punishments may promote an extrinsic orientation in their children. Conversely, parents who offer autonomy-support through informational praise and choices may facilitate intrinsically oriented development in their children. In addition to parents, I considered the students' relationships with other significant adults including teachers and school administrators. I also examined the quality of the students peer relationships with particular focus on the dichotomy between competition and cooperation.

With respect to the motivational context of the students' parental relationships, there were essentially no differences between the American and German participants. Both groups described a pattern of early parental

involvement through late elementary school. This was followed by a distancing process where the parents gradually allowed the student more autonomy. All nine students reported little parental involvement in their current academic endeavors. Andrew described this evolving process of parental involvement, reporting “In lower and middle school, they used to be more hovering over my shoulder about grades. Now they kind of just expect me to do my thing and come home with good grades.” Gottfried described a remarkably similar transformation with his German parents:

I think my mother, above all, strongly supported me from the fifth through the seventh grade. She always studied with me for exams, testing me on the day before the exam. And I think that brought me in the right direction so that I can now do it independently. Now I can independently prepare myself, even if I sometimes do not really want to.

Both groups of students described supportive parents with high aspirations for their children’s academic success. However, the parents currently exhibit a hands-off approach where they allow the students to autonomously fulfill their academic aspirations. Alice explained how she has gained the trust of her parents, noting “I think in contrast to a lot of other kids, my parents maybe remind me to do well, but they’ve never made it a point, ‘cause they don’t really worry about me.”

Ashley described a similar parental approach, reporting “My family’s definitely more supportive than anything. They’re not really pushy or anything. This is strictly what I set myself up for.” Amelia reported that her parents display a comparable attitude, noting “They’re not overly dramatic about grades, because I guess they just assume that my brother, my sister and I are gonna work our best, work our hardest.” This begs the question concerning whether the students’ high grades instilled parental confidence or whether the parental confidence positively influenced the students’ academic performance.

The German students reported a similar pattern of parental support. Günter described a balanced approach where his parents do not overreact to unsatisfactory performance, noting “They motivate me by all means. And now when something is not so good, there is also no drama. And they just support me if there is any kind of problem or if I need help.” He also explained that his parental support occasionally extends to academic content, reporting “I also receive help, for example when I don’t understand something, then I can ask my family. I get support from them.”

Gudrun admitted that her parents closely follow her academic progress, noting “My parents naturally have a certain expectation. But that is not currently my main motivation.” She reported that her parents do not overreact to outstanding or unsatisfactory academic performance, explaining “They are just

happy and find it good that I have good grades. But also if I were to receive bad grades . . . that would also not be so bad.”

Both the American and German students reported non-effusive praise from their parents for their academic success. According to Deci and Ryan (1985), contingent praise can undermine intrinsic motivation to perform interesting tasks. However, the undermining effect can be moderated based upon how the child perceives the quality of that praise. If the student interprets the praise as informational, then subsequent intrinsic motivation will be supported. Conversely, if the student interprets the praise as controlling, then subsequent intrinsic motivation will be undermined.

Ashley reported non-descriptive praise, such as “Good job!” or “I’m proud of you!” Gisela explained that she takes pride in the positive comments of her family members, noting “I think it is nice when I am praised by my parents and they are proud of me. For example, my grandma also tells people how good I am in school (laughs). And that makes me proud.” From their own evaluation of the praise, it appears that both Ashley and Gisela interpret their familial praise as informational and non-controlling.

Deci and Ryan (1985) also suggest that contingent rewards would have a detrimental effect upon subsequent intrinsic motivation. None of the American students reported receiving tangible rewards for grades. However, three of the German students described this practice. Gisela downplayed the meaning of the

payment, explaining “My grandma gives me money for the report card. But that is all.” Gottfried described his experience of pay for grades, which happened when he was younger, noting “It used to be that if we brought home a good report card with good grades, we would perhaps receive €5 from grandma. But that is no longer is the case.” Gudrun described a similar practice which was not connected to a particular academic outcome, explaining “For the report card we always received perhaps something little, but the same regardless of if you had bad grades or better ones. My sisters and I would get the same thing.”

According to self-determination theory (Deci & Ryan, 1985), the removal of a contingent reward has an undermining effect on subsequent intrinsic motivation for the activity. However, in the case of Gottfried the rewards may have been irregular or unexpected (“We would perhaps receive €5”). Deci and Ryan predicted that unexpected rewards would have no detrimental effect upon intrinsic motivation. In Gudrun’s case the reward was non-specific (“perhaps something little”), and it was not performance-contingent, since she and her sisters would receive the same reward, regardless of their academic performance. Again, according to Deci and Ryan, that type of reward would have no undermining effect.

Although it can be argued that parents represent the primary influence on the students’ motivational orientation, the sheer number of hours that they spend at school points to its significance in shaping their development. Structural

differences in the school day in Germany and the United States inform the students' diverse attitudes toward school. The American students expressed a stronger connection to the school than did their German counterparts. The five American students reported remaining on campus from 8:00 a.m. until 3:30 p.m. for classes, often followed by two hours of school athletics, and an additional two hours of musical rehearsal. In contrast, the German students typically leave school at 1:00 p.m. with the exception of Thursdays, where they have a double-blocked math course which lasts until 3:30 p.m. German schools provide neither after-school athletics nor organized musical activities outside of the school day.

Another explanation for the relatively stronger connection to the school for the American students is the fact that most of them attended the Ambrose Academy since kindergarten. In contrast, the German students joined the Goethe School in the fifth grade. Amanda expressed the sentiments of all five American students concerning her connection to the school, stating "I honestly couldn't imagine being somewhere else. Of course, I'm sure everyone always says that, but this really is kind of like a second home here." Conversely, the German students reported a lukewarm connection to the school. Gisela expressed a positive, though not glowing, appraisal of the Goethe School, noting "I like to be here in this school. I think that it is a good school." Gottfried articulated a mixed view of the school, stating "It is not as though we love the school (laughs). There are a bit too many time constraints, and sometimes it is too tense."

Perhaps the most crucial relationship outside the home influencing the students' motivational orientation is that with their teachers. Both the American and German participants reported close relationships with their teachers. However, based upon the classroom observations, the American students displayed more casual and friendly interactions with their teachers. The American students had conversations with their teachers before and after class. Since the American teachers typically have their own classroom, students enter the room a few at a time during a five-minute passing period. During this process, I observed teachers visiting informally with students, bringing up topics that have little to do with the course content. During the classroom observations there was a seamless transition from these conversations to the start of class. After class, the conversations between teachers and students resumed.

Andrew reported a glowing appraisal of his teachers, declaring "The teachers are incredible! And I think with the small class sizes that we have, you can really have like kind of a personal relationship with the teachers. . . . I have not had a teacher in high school that I haven't liked." Amanda spoke in similar terms about the positive qualities of her teachers, asserting "They're just passionate and that's what I think makes a really good teacher, someone who is really passionate about what they teach. And we have a lot of those teachers here, so that's nice too."

In contrast, the German teachers walked into the room, set up their materials, and then officially commenced the instruction. Even during the break of a double-blocked period, the German teacher did not converse with students. He merely set up the next part of his lesson and most of the students went into the hallway. I imagine this relationship has something to do with the more formal approach in German elementary schools. The teacher traditionally enters the room just after the bell rings. Students stand and greet the teacher in unison, and then are asked by the teacher to be seated. Although older students in the *Gymnasium* do not stand to commence class, they do maintain a similar level of formality with their teachers.

Gottfried expressed positive feelings toward his teachers, noting “I actually have a good relationship with the teachers. I get along with them very well.” Günter expressed a mixed appraisal towards his teachers, explaining “My general impression is good. But there are exceptions—particular teachers with whom I do not get along.” Gudrun shared Günter’s mixed assessments, stating “I get along with most of the teachers quite well. I don’t know if I would call it a relationship. There is actually not a close relationship.”

With respect to motivational approaches, the American teachers seem to provide a more autonomy-supportive atmosphere than their German counterparts. The American teachers encouraged the top students to take a leadership role within the classroom and assert their personalities on the lesson. The history,

math, and English teachers allowed the students substantial freedom to frame the direction of the instruction through their questions and suggestions. The American teachers encouraged digressions within the scope of the course content; though they were quick to redirect students when the discussion went too far astray.

In contrast, the teachers in Germany controlled most aspects of class, directed the discussion, rarely digressed from the prescribed topic, and exhibited a formal relationship with students. Although the German students reported comfortable relationships with some teacher, they also referenced difficulties with teachers. For this reason, the German students' experience of relatedness in the school setting likely varies according to the teacher. Those German students who indicated comfortable relationships with teachers also reported high levels of interest and enjoyment in that course. Two German students referenced strong relationships with teachers from previous years. In those instances, they declared that their interest in the course was significantly stronger than with their current teacher. The American students reported strong and comfortable relationships with all of their teachers. Because of this, their reported differences in interest for different subjects had less to do with the teacher and more to do with the academic content or the specific theme within the course.

Just as the American students reported positive relationships with their teachers, they also described comfortable relationships with school administrators.

Amanda reported that school administrators are “really approachable.” Andrew referred to them as “very personable” and “not extremely high up on a pedestal.”

For the students in Germany, this represents a point of differentiation. They reported a lack of contact with administrators at best and an outright conflict at worst. Gisela expressed minimal contact, noting “Up until now I have had little contact with the school administration. You see them at special events, and they may say ‘Hello!’ or something. But otherwise, little contact.” Gottfried bluntly observed “There is really no actual relationship there (laughs).” Günter described an unpleasant interaction with an administrator, reporting “The Director came to our class to give support to a teacher because of a quiz . . . that went badly because no one had prepared. The Director said we should all go to the *Realschule*.” Günter’s description of this incident calls attention to a form of motivation through threat of punishments. For a student attending a Gymnasium, threat of transfer to a *Realschule* represents removal from the university track and carries profound implications for career options and future earning potential.

Just as the American students reported closer relationships with their teachers and administrators than their German counterparts, they also described more cordial interactions with their classmates. This could be explained in part by the fact that many have attended the same school since kindergarten. While the German students described club sport activities, the Americans took part in school-related athletics, creating a sense of cohesion. Andrew expressed the view

of the other four American students, stating “The people I’ve met here are some of my best friends. . . . It’s been cool to see all of us kind of grow up together.”

Conversely, the German students described comfortable, though not always friendly interactions with fellow students. Gisela represented the view of the German students, noting “To some extent the relationship to teachers and fellow students is distanced. . . . However, I would not describe it as harmony.” The American students reported frequent group study sessions and a sense of collaboration and friendly competition, particularly within the context of their challenging Advanced Placement courses. The culture of achievement and inclusion at the Ambrose Academy would foster a sense of comfort and likely facilitate academic motivation. However, the undercurrent of competition may moderate the positive effects of this school culture on intrinsic motivation.

In contrast, the German students described a weaker connection to the school and to their classmates. At the same time, they reported enjoyment in group projects, which may provide a respite from the regiment of assignments, graded class participation, and testing that typifies their school experience.

Flow Theory

While self-determination theory (Deci & Ryan, 1985) explains how individuals satisfy their basic psychological needs through autonomy, competence, and relatedness, flow theory (Csikszentmihalyi, 1975, 1990, 1997) characterizes the experience of heightened intrinsic motivation. According to

Csikszentmihalyi (1975, 1990, 1997), individuals in a flow state reported experiencing clear goals, specific rules, appropriate responses, lack of inner questioning, immediate feedback, optimal challenge, lack of self-consciousness, and the feeling that time passes quickly. The combination of attributes produces an autotelic (intrinsically motivated) experience, which has been shown to be common across cultural boundaries (Csikszentmihalyi, 1975, 1990, 1997). Although flow experiences have been most often studied within the context of leisure-time activities, Csikszentmihalyi has also considered flow states within the work and academic contexts.

In the current study, students responded to a series of questions relating to the various aspect of flow theory (Csikszentmihalyi, 1975, 1990, 1997). I followed up with probes, requesting specific examples of flow experience from the students' academic, athletic, and artistic endeavors. However, the German students only reported experiences relating to discrete elements of the theory. For example, they reported an alignment of their skill level with the challenges of the academic program at the Goethe School. To a lesser extent the German students reported instances where time seemed to move quickly, particularly when they had a high level of interest for the topic.

Günter reported his experience of this phenomenon, stating "Because of my interest the time actually passed quite quickly." Gottfried related his perception of the passing of time to his enjoyment in the class, noting "It depends

upon how much fun—if I am now—motivated—*very* motivated in the topic of class, then it appears faster.” Gisela expressed a similar relationship between time and interest, reporting “If we have some kind of interesting assignment, like for example problems to solve individually, and then time actually just flies by.” She also explained that her active participation in class influences her perception of time, clarifying “Simply when I take part in the class, then the time passes quicker.”

Despite their descriptions of elements of flow, the German students failed to relate complete instances where all of the elements combined to form a truly autotelic experience. Conspicuously lacking were experiences where the students could make choices and exert personal control to solve problems. Even when Gudrun went to the board to work a problem in math class, she remained self-conscious and uncomfortable, wishing for the experience to end so she could take her seat. Although seated in one of the rows, Herr Gärtner still exerted control of the classroom, making his own comments, posing questions, and recognizing student volunteers.

The German students’ lack of choice in the classroom setting diminished their opportunities for flow experiences and instilled a feeling of tension in the students. Another aspect of this tension and control is the practice of evaluating the quality and quantity of the students’ oral participation. I had the feeling that the students raised their hand and volunteered as much for the oral grade as to

express genuine interest in the lesson. Because most of the instruction in the German school was teacher-centered, there were few opportunities for students to project their individual personalities into the lesson. The lack of flow experiences could reflect systemic differences, particularly with respect to the relative levels of autonomy and choice available to the German students in the classroom setting.

While the German students demonstrated a paucity of flow experiences, the American students revealed frequent examples. When Amanda and Amelia worked side by side on the math puzzle problem, they demonstrated flow through a synchronistic effort to come to a solution. Their public self-talk illustrated that they were completely engaged, lacking self-consciousness, despite being surrounded by fellow students, their teacher, and myself. While tentatively suggesting approaches to solving the problem, Amanda and Amelia received immediate feedback through Mr. Anderson's often cryptic and coy questions.

Amanda later explained her internal process of solving the problem, noting "I was just trying to think ahead . . . but you have to think a couple steps ahead, and you have to go for it. And then you mess up and you just have to start over again." She went on to explain how she experienced time while attempting the problem, noting "And then you just finally speed up the process and you get there." Amanda added that the process reinforced a recurring lesson from Mr. Anderson, noting "It teaches you that you have to analyze it a little bit first rather than just going straight into it."

Amelia articulated her perspective while working the problem, explaining “I knew in that puzzle . . . we had to find a way to make the two boxes that would be extra fit together. I visually saw myself cutting the board in half.” She added that her approach was unnecessarily analytic, asserting “I *made* it into a math problem.”

Andrew reported more of a trial and error approach to solving the same problem during another class period, noting “I looked at that problem and I just blindly jumped into it. I didn’t really think logically, ‘cause I like doing stuff like that. I like puzzles and I wanted to find a solution.” Andrew also reflected on his time working a problem on the board later in the class period, noting “In that class, I made a mistake with the work that I did and was just—I just laughed about it. I was like, ‘I’m so sorry everybody.’ I mean it wasn’t a big deal at all for me.” He experienced classic signs of flow experience, including immediate feedback from classmates and teacher, optimal challenge, and a lack of self-consciousness while publically solving the problem.

Andrew reported another flow-type experience while presenting a report with a partner during physics class, explaining “We taught it like we were the teachers teaching the class. And just kind of got into it and started drawing stuff and like explaining stuff and had some questions from the people in the crowd.” He described his perceptions of time, stating “And I look up at the clock—it had been 20 minutes. It felt like two.” His characterization of the suspension of time

along with the opportunity to think on his feet while taking questions from fellow students is typical of flow experiences.

His reference to his fellow classmates as “the crowd” parallels another flow experience that Andrew experienced while on the stage. While representing a synchronized swimmer as part of an improvisational theater performance, Andrew described multiple aspects of his flow experience, including the need for an appropriate response and optimal challenge. He explained “You think on your feet and you have to have those relationships with the other people in the improv troupe so that you know what they’re gonna say.” He described immediate feedback in the form of the audience’s response, noting “I’m fine with being a goofball in front of ‘em, ‘cause—ya know what, if they laugh, then I’m happy.” Andrew’s description of the heightened experience on stage parallels that of athletes who are tested to the limit. He described the feeling of anxiety and anticipation upon entering the stage, stating “I love the adrenaline rush of coming out on stage for the first scene that you’re in . . . you’re anxious to get that first big laugh.” He added that after the initial stress, time on stage passes quickly, noting that after the audience responds positively, he experiences relief “and the rest of the show just rolls.”

Although the German and American students displayed varying levels of flow experience, it is possible to view the aggregate academic endeavors of both groups of students with respect that same theoretical context. The German

students described a recurring process of class attendance, mandatory participation, detailed note-taking, transcription of notes, implementation of memorization techniques, completion of homework, intensive study, periodic written exams, occasional group projects, and long-term study for the impending *Abitur*.

Likewise, the American students described long school days, class discussions that often wander off topic, mandatory afterschool athletics, voluntary participation in school musicals, intensive homework and study routines, direct preparation for SAT and ACT, early college applications, and looming AP exams. Over a period of days, weeks, and months, both groups of students have a common experience of school that aligns with the elements of flow theory (Csikszentmihalyi, 1975, 1990, 1997).

The students identified clear goals with respect to grade point average, class ranking, and college acceptance. They defined specific rules with respect to the demanding expectations of their teachers in the form of deadlines, required presentations, essays, and examinations. They described appropriate responses through their clearly articulated homework and study routines. They described a lack of inner questioning through their resistance to outside forces, such as technology and the pressure from friends to socialize. They referenced immediate feedback from their teachers in the form of verbal and written comments for essays, exams, and class participation. All of the students admitted that their

chosen academic programs, along with the impending high stakes assessments, were optimally challenging.

From classroom observations I was able to witness the students' high frequency of participation and lack of self-consciousness (particularly with respect to the Americans) when speaking in front of classmates and their teachers. All students described how time seemed to suspend and pass quickly; this was particularly true when they were actively engaged in class and the topic was of personal interest. With this in mind, flow theory (Csikszentmihalyi, 1975, 1990, 1997) can function as an interpretive device that explains the students' experience of schooling in general over time. While individual flow experiences may be rare for the German students, and more common for the American students, the overall academic endeavor for both groups fits into the theoretical construct of flow.

How Self-Determination and Flow Theories Inform the Data

The previous sections showed how the data from student interviews and classroom observations informed self-determination (Deci & Ryan, 1985) and flow (Csikszentmihalyi, 1975, 1990, 1997) theories. I sought to elucidate how the students' statements supported many of the predictions of the theoretical frameworks. In this section, I reverse the process and speculate how the two theories inform the data. Since my questions for the students came directly from the discrete elements of both theories, it is not surprising that the theories substantially explain the students' responses.

In general terms, self-determination theory (Deci & Ryan, 1985) explained the students' process of regulation of extrinsically motivated actions toward a more self-endorsed approach. The learning process itself can be viewed as this regulation process, both in the home and in school. Because self-determination theory (Deci & Ryan, 1985) identifies autonomy, competence, and relatedness as basic human needs, it is not surprising that these constructs function across cultural boundaries. At the same time, systemic differences, such as the teacher/student relationship and the presence/absence of choice accentuate motivational differences between the two groups of students. Particularly meaningful was how self-determination theory (Deci & Ryan, 1985) explained the role of parental control for all nine students. Without exception, the students had early direct parental involvement, followed by a gradual distancing and awarding of autonomy near the seventh grade.

With respect to flow theory (Csikszentmihalyi, 1975, 1990, 1997), only three of the five American students described autotelic experiences with respect to their academic learning. Perhaps more meaningful is that none of the German students described what can be termed flow experiences. However, as mentioned previously, the aggregate picture of academic learning for all nine students supports all elements of flow theory (Csikszentmihalyi, 1975, 1990, 1997). This implies a high level of intrinsic motivation to successfully complete academic tasks for both American and German students.

However, there is a significant difference between *successfully completing* academic requirements and having intrinsic interest in the subject matter. Flow theory does not differentiate between interest in success and interest in an academic topic. Just as video games can provide the opportunity for optimal flow experiences, the educational process described by the American and German students can offer increasingly complex tasks, clearly defined appropriate responses, and optimal challenge characteristic of flow experiences. However, for flow states to take place, the content of that experience may be irrelevant. As long as the challenge level is optimal, students predisposed to competition will take measures to find a way to win. Coupled with the high level of innate talent possessed by the nine participants, this competitive drive enables the students to sustain their effort throughout their academic careers. While flow theory explains the students' level of effort, it does not inform or illuminate how they develop and sustain interest in academic content.

What is not Explained by the Two Theories?

This divergence in attitude toward academic content and the process of attending school leverages cross-cultural findings to clarify the complex issue of academic motivation. The manner in which the students responded to the interview questions provided insight into opposing approaches to learning. The German students offered shorter, more direct answers to the interview questions with few digressions or narrative accounts. In contrast, the American students

provided expansive answers, often diverting from the topic, but adding anecdotes and unsolicited insights into the complete educational process. Although I did not report quantitative results, I sensed two contrary views toward school that manifested itself in the tone of the interviews. To confirm my suspicion, I completed word searches on all of the transcripts to determine how often the students laughed during the interviews.

For the American students, I searched *laughs*, which I placed parenthetically after the specific moment when they laughed. Similarly, I searched the German word *lacht* within the German transcripts. I found that the American students laughed an average of 32 times during the interviews, while the German students laughed only 10.25 times. More specifically, in ascending order, Alice, Andrew, Amelia, and Ashley laughed nine, 17, 22, and 32 times respectively. Amanda broke out into laughter a whopping 83 times to lead all American students. Of the German students, Günter, Gottfried, and Gisela laughed one, seven, and 12 times respectively. Gudrun demonstrated the highest level of the German students, laughing 21 times. Although not a sophisticated statistical analysis, this points to the notion that the Americans consider school fun and entertaining while the German students consider it to be serious work. Perhaps equally significant is the fact that the American students mentioned the word *love* an average of 6.4 times per interview whereas the Germans never referenced the word [*Liebe*] at all.

Although the descriptive statistics may provide insight, it may be instructive to consider *why* the American students laughed during the interviews. It was never my intention to illicit laughter through my questions or interactions with the participants. In fact, on most occasions, the American students became amused at their own comments. Although I found this fascinating, I certainly did not interrupt them and ask: *Why are you laughing right now?* However, my interpretation is that they laughed at times when they described how their rigorous work ethic and attention to detail defined who they are. The implication was that they expressed the sentiment: *That's just me being me.* My impression was that the Germans' relative paucity of laughter was due to their feeling that academic effort is to be expected from all students, and their particular approach was common to all students.

Chapter V Summary

In the current chapter, I provided analysis of the data through the lenses of self-determination theory (Ryan & Deci, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997). After providing a philosophical overview to set the context for my analysis, I examined the students' perception of high school as a gateway to college and their view of grades and assessment. Central to the Analysis was a discussion of the students' independent interest in academic content, along with their outside intellectual interests. I considered the students' responses to questions relating to specific aspects of the two theoretical

frameworks, including choice, pressure, feedback, deadlines, procrastination, perceived competence, and competition. I also analyzed the students' levels of relatedness in the home with family members and in the school setting with teachers, administrators, and peers. I evaluated the students' descriptions of flow-type experiences, both at school and during outside activities. In addition to exploring how the two theories informed the data, I considered the explanatory value of other realities of academic motivation, based upon the words of the participants.

The subsequent chapter represents a summary of the study, with special emphasis upon the most significant conclusions. I put forth an argument concerning the problematic nature of gifted academic motivation in light of the Presentation of Data and Analysis. In the conclusions, I stress the cross-cultural differences between Germany and the United States and compare my own findings to existing literature. Following the conclusions, I present implications for research, theory and practice and recommend future research, based upon the current study. Finally, I clarify the study's limitations and offer lessons learned from the process of research and analysis.

CHAPTER SIX
SUMMARY OF THE STUDY, CONCLUSIONS,
IMPLICATIONS, AND DISCUSSION

To set the context for the concluding section, I cite an extended metaphor from the field of biology:

When a honeybee dies it releases a death pheromone, a characteristic odor that signals the survivors to remove it from the hive. This might seem a supreme final act of social responsibility. The corpse is promptly pushed and tugged out of the hive. The death pheromone is oleic acid, a fairly complex molecule, $\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOH}$, where = stands for a double chemical bond. What happens if a live bee is dabbed with a drop of oleic acid? Then, no matter how strapping and vigorous it might be, it is carried “kicking and screaming” out of the hive. Even the Queen bee, if she’s painted with invisible amounts of oleic acid, will be subjected to this indignity. Do the bees understand the danger of corpses decomposing in the hive? Are they aware of the connection between death and oleic acid? Do they have any idea what death is? Do they think to check the oleic acid signal against other information, such as healthy spontaneous movement? The answer to all these questions is, almost certainly, No. In the life of the hive there’s no way that a bee can give off detectable whiff of oleic acid other than by dying. Elaborate contemplative machinery is

unnecessary. Their perceptions are adequate for their needs. (Druyan & Sagan, 1992, p. 163)

Within the context of school and the home, children have long experienced token rewards, praise, and the threat of punishment as devices to motivate their behavior. Particularly with respect to unpleasant activities, children are subjected to an array of extrinsic motivators to ensure their compliance, based upon the goals and wishes of the adults in their lives. If the child must clean his or her room, a parent may offer money or privileges, perhaps reserving a spanking as a looming possibility. Similarly, if a student is assigned a math worksheet, the teacher may offer extra recess time, a gold star, or the looming possibility of a call home for non-completion. Extensive research has shown that token rewards and punishments work (O'Learn & Drabman, 1971). From the perspective of parents and teachers, the common system of rewards and punishments appears perfectly adequate for their needs (Kohn, 1993).

Fundamental to the argument that drives this study is a subtle and counterintuitive point: although the system of rewards and punishments that permeates contemporary parenting and schooling seems to effectively motivate children, it also generates unintended consequences. Foremost among these unintended consequences is the undermining effect of extrinsic incentives upon intrinsic motivation. A parent or teacher may argue that the primary function of a reward is to maximize the possibility that the child engages in the desired

behavior. From this perspective, the story ends once the child complies by completing the task. However, within the mind of the child remains a lingering effect of that reward, which will come into play at the next opportunity for a similar activity. Although a single instance of a token reward may seem innocent enough, it is the cumulative effect of rewards throughout the process of child-rearing and schooling that has a profound effect upon the child's motivational orientation. My interest is not in whether the 12-year-old completes the assigned book report. Rather, my interest is in whether the 30-year-old enjoys reading for pleasure.

Yet my concern for the unintended consequences of extrinsic motivators runs deeper than how they influence the pleasurable activities of a 30-year old. This is where the counterintuitive point becomes difficult to tease out. Something happens to the psychological makeup of an individual who is subjected to a continuing sequence of experiences that he or she does not personally endorse at the highest level. Recall DeCharms' (1968) characterization of extrinsically motivated individuals feeling as pawns rather than as origins for their behavior. At some point under these extrinsically imposed conditions, the individual's sense of autonomy must become damaged. Within the context of flow theory, Csikszentmihalyi (1990) identified the construct of *psychic entropy*, explaining "Whenever information disrupts consciousness by threatening its goals we have a condition of inner disorder" (p. 37). He went on to suggest that *psychic entropy*

represents a “disorganization of the self that impairs its effectiveness. Prolonged experiences of this kind can weaken the self to the point that it is no longer able to invest attention and pursue its goals” (p. 37).

My contention is that this condition becomes manifest in the high school classroom, where extrinsic factors, such as grades, competition, high-stakes testing, and college applications demonstrate the full force of extrinsic motivation. We see this in high school students who frame every academic task with the question: *What is this going to get me?* Perhaps I reveal my own bias when I assert that adolescence is a crucial period with respect to personal development. Having worked closely with high school students for the past 24 years, I have seen how the classroom serves as a laboratory where students try on social roles, explore interests, and construct the essential attributes of who they are. My own approach to teaching has been to tread lightly among students engaged in such a transformative, even sacred endeavor.

However, the present study shows how the extrinsic demands on high school students, particularly with respect to academic performance, become ratcheted up to create a race to the finish line of graduation. Just when students need time to reflect, experiment, and ruminate, parents and educators impose ever-increasing demands of performance, together with high-stakes measurements and rewards that affect every aspect of the students’ futures.

The present study explored the phenomenon of gifted academic motivation through the words and experiences of nine high-performing students, four in Germany and five in the United States. It sought to fill a gap in the literature in the areas of qualitative and cross-cultural studies on intrinsic motivation. By focusing on high-achieving students, the study revealed a systemic problem that has been traditionally viewed as a success in both the German and American educational systems. Specifically, the performance of the top-ranked students in a graduating class has rarely been viewed as problematic.

Yet my analysis revealed potential unintended consequences of extrinsic educational goals for students. The cross-cultural elements, along with the theoretical frames of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997), provided a triangulated view of the data. By presenting the voices of the German and American students simultaneously, I sought to both accentuate common motivational experiences and emphasize systemic differences. This represents a critical perspective appropriate for the phenomenon under investigation, which is neither an exclusively *German* nor an exclusively *American* problem.

Organization of the Chapter

Based upon the Presentation of Data and the Analysis, several conclusions emerged that inform the phenomenon of gifted academic motivation. In this final chapter, I summarize these conclusions and, where appropriate, articulate how

they correspond to existing literature. Three groups of conclusions emerged. After the presentation and discussion of conclusions, I offer the study's implications for research, theory, and practice, and suggest directions for future research. The chapter concludes with a presentation of the study's limitations and a more personal discussion of how the study has altered my own perception of the phenomenon of academic motivation.

Motivational Differences

In this first group of conclusions, I present instances where the German and American students demonstrated notably different motivational orientations along the regulation continuum suggested by Vallerand et al. (1993), highlighting systemic educational factors that may explain the differences. To provide clarity in these comparisons, I conclude each paragraph with an italicized statement of the difference.

Differing Levels of Independent Academic Interest

Deci and Ryan (1985) often used interest interchangeably with intrinsic motivation. Individuals following their interests act with the expectation of personal causation and can be said to be intrinsically motivated (DeCharms, 1968). During the student interviews, I rarely asked students to describe details of academic content. However, the German students all mentioned many explicit aspects of their school curriculum without prompting. In contrast, only one of the five American students, Amelia, independently referenced academic content equal

to that offered by the four German participants. The others were reluctant to reference specific elements of their curriculum, choosing to focus their comments upon approaches to preparation and aspects of achievement. From this, I conclude that *the German students exhibited greater intrinsic interest in their academic activities than the American counterparts.*

Differing Levels of Choice in the Academic Program

Reeve (2006) suggested that offering students an array of choices enhances intrinsic motivation, while strict control undermines intrinsic motivation. The German students were able to make more significant choices than their American counterparts concerning their academic programs. The introductory phase [*Einführungsphase*] allowed for the German students to select two major subjects and try them out for a full academic year. By selecting their academic majors prior to college, German students were able to focus their studies in areas of personal interest. In contrast, the American students were allowed to select the level of difficulty (regular, honors, or AP) of their courses without declaring areas of specialization. Therefore, *the German students experienced relatively more choice with respect to their academic program than the American students.*

Differing Levels of Choice at the Classroom Level

Within the classroom, German students rarely had the opportunity to make significant choices. They could choose to volunteer to answer questions in class

or participate passively. Beyond that, they were essentially under the control of the teacher, who directed all aspects of classroom activity. In contrast, the American students exerted considerable control in the classroom through a range of choices. The students often shaped class discussions, selected project groups, and had wide-ranging choices for research papers and presentations. Relatively speaking, *the American students experienced considerably more choice at the classroom level than the Germans.*

Differing Future Orientations Toward College

Deci and Ryan (1985) reported that future orientation predicts an extrinsic locus of causality while attention on the present is a sign of intrinsic motivation, which is often characterized by flow-type activities (Csikszentmihalyi, 1975, 1990, 1997). Although the German students stressed the importance of a strong result in the *Abitur* for their future endeavors, they did not report direct preparation. Rather, they expressed confidence that strong performance in their current coursework will lead to satisfactory results on the *Abitur*. Conversely, the American students described substantial anxiety and overt preparation for college entrance exams, such as the SAT and ACT. They also reported early attention to the college entrance process, including participating in campus tours, completing application essays, and obtaining recommendations from teachers. This illustrates that *the American students possessed a more focused future orientation toward college than the German students.*

Differing Levels of Autonomy-Supportive Teaching

Research has shown that autonomy-supportive teaching enhances intrinsic motivation while controlling approaches to teaching diminishes intrinsic motivation (Deci et al., 1982; Deci & Ryan, 1985; Reeve, 2006; Ryan & Niemiec, (2009). German students reported having only minimal autonomy within the classroom, accepting the expertise and qualifications of the teacher to direct all instructional activity. They characterized their participation in class as a means to gain a positive impression of their teacher and enhance their oral grade. In contrast, the American students described an autonomy-supportive classroom environment where the teachers often acted as facilitators and guides. The American students experienced considerable control in both the content and pace of their lessons, often reporting their teachers' willingness to allow digressions within the class discussions. With this in mind, *the American students experienced relatively more autonomy-supportive teaching than the Germans.*

Differing Levels of Autonomy-Supportive Feedback

According to Deci, Koestner, and Ryan (1999), feedback interpreted by students as autonomy-supportive fosters intrinsic motivation while feedback interpreted as controlling undermines intrinsic motivation. In a related finding, Csikszentmihaly et al. (2005) determined that immediate feedback supports flow experiences. In the present study, the German students reported a lack of feedback from teachers beyond simple statements indicating a job well done.

They recounted few examples of formative informational feedback; rather, they reported feedback in the form of summative assessments, report cards and year-end conferences.

In the case of the American students, they reported substantial feedback from their teachers, both within the context of the classroom lesson and in written comments on essays and exams. Although some of the feedback appeared to be overtly controlling (Dr. Aldridge's rather harsh appraisal of her student's writing), the students characterized the feedback as primarily informational. The American students also described flow-type experiences in class where the teacher (particularly Mr. Anderson) provided immediate informational feedback. Based upon the students' accounts, *the American students experienced their feedback from their teachers as informational while the German students experienced their feedback as controlling.*

Differing Levels of Perceived Competence

According to Deci and Ryan (1985), competence is a basic human need, along with autonomy and relatedness. Although individuals may share equal levels of competence, it is the perception of that competence that determines its effect on motivation. According to self-determination theory (Deci & Ryan, 1985), perceived competence correlates positively with intrinsic motivation. Both groups of students characterized their competence as a combination of innate talent and strong work ethic. While the German students were reluctant to

evaluate their levels of competence or minimized compliments, the American students were happy to relate positive appraisals of their academic abilities.

Therefore, *the American students expressed higher levels of perceived competence than the German students.*

Differing Levels of Competition

Researchers have found that competition functions as a particular type of reward, which possesses both controlling and informational aspects (Deci, 1975; Deci et al., 1981). Deci et al. (1981) found that the controlling aspect of competition was more prominent, producing an aggregate detrimental effect on subsequent intrinsic motivation. The American students were all comfortable expressing that they were extremely competitive, both in the areas of athletics and academics. They articulated specific goals with respect to class rank, grade point average, and target scores on high-stakes tests. In contrast, the German students spoke in terms of achievement and accomplishment but were reluctant to reference any specific goals that involved a comparison with other students.

Because of this, *the American students were more overtly competitive than the Germans, particularly with respect to academic outcomes.*

Differing Levels of Relatedness at School

In their construct of self-determination theory, Deci and Ryan (2001) considered relatedness to represent the level of control or autonomy- support shown by significant others. Within the context of school, relationships with

administrators, teachers, and fellow students represent the most significant (Deci & Ryan). Ryan and Niemiec (2009) found that autonomy-supportive relationships in the school setting foster intrinsic motivation, while controlling relationships have an undermining effect. The American students expressed a strong connection to their school and uniformly positive relationships with administrators, teachers, and peers. In contrast, the German students described varying levels of connection to the school, considering it more a place for work than for socializing. The Germans also described a combination of positive and negative relationships with teachers and peers. Most dramatic was their characterization of at best cordial and at worst a strained relationship with school administrators. Consequently, *the American students described a stronger sense of belonging and relatedness in the school setting than the Germans.*

Differing Frequency of Flow-Type Experiences

Csikszentmihaly (1975) described flow experiences as those where the individual has clear goals, specific rules, and is aware of appropriate responses. While performing these activities, the individual lacks inner questioning, receives immediate feedback, and experiences a balance between skills and challenge. Individuals in the flow state lack self-consciousness and they feel that time passes quickly (Csikszentmihaly). Csikszentmihaly characterized the flow state as an autotelic experience where individuals perform the activity for its sheer joy. The German students did not describe specific examples of flow experiences. They

reported frequent participation in class, which might be characterized as a flow-inducing state; however they reported being motivated by gaining the teacher's approval and often felt self-conscious, particularly when working problems on the board.

Conversely, the American students described frequent flow experiences, some of which I observed during classroom visits. The American students reported instances that aligned with all elements of flow states in the classroom while working problems on the board, while taking part in school athletics, and while on the stage during improvisational theater performances. *The lack of flow on the part of the Germans along with the frequent flow experiences described by the Americans represents a significant difference between the two groups of students. However, if academic endeavor can be viewed in the aggregate, both groups of students experienced a general and sustained flow state as they completed school-related tasks.*

Motivational Similarities

The second collection of conclusions contains similarities between the German and American students with respect to academic motivation. These conclusions speak to the universal applicability of self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihalyi, 1975, 1990, 1997).

Similar Academic Preparation Routines

Both the German and American students shared similar routines of preparation for school. They established predictable times and places of study, avoiding digital distractions, and often worked late into the night.

Similar Motivation to Obtain Good Grades

Lepper et al. (1973) reported that focus on contingent rewards, such as grades, predicts an extrinsic motivational orientation. The students' comments indicated that they were significantly motivated to obtain good grades, though Americans expressed more outward concern for class rank.

Similar Parental Approach of Autonomy-Support

Parents of both groups of students had similar approaches that included early involvement, followed by autonomous support in the seventh grade, aligning with Baumrind's (1968) *authoritative* parenting. However, three of the German students reported receiving rewards (though not performance-contingent) for report cards from family members. Unresolved was the issue of whether the students' good grades influenced the autonomy-supportive parenting style or the parenting style positively affected the students' academic performance.

Similar Levels of Anxiety in School

Csikszentmihaly (1990) reported that a balance between boredom and anxiety was necessary to foster flow experiences. Neither the German nor the American students reported substantial anxiety to complete assignments. They

reported minimal stress prior to the assessments, followed by confidence during testing, and a lack of residual worry afterwards.

Similar Experience of Imposed Deadlines

Research has shown that imposed deadlines have a detrimental effect upon intrinsic motivation (Amabile et al., 1976; Burgess et al., 2004). Both the German and American students reported a lack of pressure from academic deadlines.

Although the German students reported that much of their assigned schoolwork was not directly graded, they still completed it because it was a required element of the course which may be referenced during class discussion.

Similar Experience of Academic Procrastination

Senecal et al. (1995) found a negative correlation between academic procrastination and intrinsic motivation. With respect to the students in the study, neither the Germans nor the Americans expressed instances of academic procrastination. In fact, most initiated long-term tasks sooner than their fellow students and often completed academic tasks early.

Other Realities About Academic Motivation

The third and final set of conclusions suggests other realities about academic motivation that are revealed through the study. Here, I move beyond the two theoretical frames, suggesting additional constructs that may better explain the data.

While self-determination (Deci & Ryan, 1985) and flow theories (Csikszentmihaly (1975, 1990, 1997) explain a substantial portion of the data, the students' comments also revealed other realities about academic motivation. While the two theories call attention to qualitative differences in motivational orientation, they do not explain why these students are successful, while their classmates succeed to a lesser extent. Whether the source of motivation is intrinsic or extrinsic, the nine students in the study successfully completed academic tasks in a timely fashion, performed exceptionally well during class, and recorded exemplary results on assessments. Their common ground provides insight into additional explanations beyond the frames of self-determination (Deci & Ryan, 1985) and flow (Csikszentmihaly, 1975, 1990, 1997) theories.

The nine students were unified in expressing that their parents allowed them freedom to complete academic tasks with little oversight. They accomplished these tasks with similar patterns of preparation, including rigorous routines that they sustained with consistency. They also perceived themselves as possessing high levels of innate academic ability—a point that was corroborated by their teachers. According to the students, this ability allowed them to have early academic success.

Self-Worth Theory and Motivation

Self-worth theory (Covington, 1992) posits that students associate their perception of self-worth with their level of academic achievement. Since this

perception is typically based upon competitive achievement, students compete for rewards and recognitions, which Kohn (1993) characterized as scarce resources. The nine students often characterized themselves in terms of measurable outcomes (“Always been a straight A student”) and expressed an unbroken pattern of success. Covington suggested that poor students often put forth minimal effort to maintain self-image, deflecting the association of failure with a lack of talent.

Both the German and American students in the study spoke in terms of the expectation of success and a fear of failure as well. With respect to a history assignment, Amelia admitted that “the thought of getting a zero . . . is terrifying.” The German students prepared for class with equal diligence so they could offer meaningful participation in class. Gottfried revealed his approach, noting “I want to make a good impression on the teacher.” Although self-determination (Deci & Ryan, 1985) and flow (Csikszentmihaly, 1975, 1990, 1997) theories provide an explanation for positive approaches to learning, they do not address the potential motivational power of fear, as described in Covington’s construct.

Academic Grit and Achievement

In addition to the motivational force of fear, the nine students shared an attribute, which has been labeled *grit* (Duckworth, Matthews, Kelly, & Peterson, 2007). Duckworth et al. defined grit as “perseverance and passion for long-term goals” (p. 1087). They found that students scoring high on academic grit

outperformed their peers in measures of grade point average (Duckworth et al.). However, Duckworth et al. found that students with higher IQs scored higher on the SAT.

With respect to the students in the present study, all described rigorous preparation routines, which they faithfully held for a period of years. The students resisted social pressures and digital distractions to maintain their study regimens throughout their secondary education. Clearly the combination of talent and determination, along with autonomy-supportive parenting created fertile ground for academic success.

Cross-Cultural Interpretation of Data

Although much of the data aligned with the theoretical constructs, the cross-cultural comparison suggested conclusions that conflict with crucial predictions of the theories. Specifically, the experience of the American students in the school setting included an abundance of choice in the classroom, autonomy-supportive teaching, informational feedback from teachers, and a sense of belonging that extended to relationships with administrators, teachers and peers. The American students also reported relatively higher levels of perceived competences and significantly frequent flow-type experiences within the school context. All of these elements have been postulated to predict intrinsic motivation (Csikszentmihaly, 1975, 1990, 1997; Deci & Ryan, 1985).

In contrast, the German students reported a lack of choice in the classroom, controlling teaching, minimal feedback from teachers, disconnect from the school culture, strained relationships with school administrators, and mixed levels of relatedness with teachers and fellow students. According to the two theoretical constructs, these elements would foster an extrinsic orientation in students (Csikszentmihaly, 1975, 1990, 1997; Deci & Ryan, 1985). However, the German students expressed significantly more unsolicited academic detail and demonstrated a stronger interest in academic content than the American students. Deci and Ryan characterized interest as the most direct measure of intrinsic motivation, which suggests that the German students possessed higher levels than their American counterparts.

While the cross-cultural elements of the study revealed this misalignment with the predictions of the two theoretical constructs, these elements also provide the context for an explanation, based upon systemic educational differences in the two countries. This necessitates a more precise definition of *academic motivation*, which represents the measure of intrinsic motivation in the present study.

Based upon the students' experiences, there are two types of academic motivation that apply to the German and American students respectively: The German students reported relatively higher levels of interest in the details of academic content, including references to specific disciplines, specific theoretical

concepts, specific terminology, and specific intellectual traditions. In contrast, the American students reported relatively higher levels of interest in the task of attending school, including frequent references to interpersonal relationships with teachers and peers, competition for class rank, college entrance procedures, and extra-curricular activities within the confines of the school. I term these contrasting constructs as *academic motivation for content* and *academic motivation for attending school*.

Günter's statement that he considered school "a place for working" epitomizes the German attitude toward education. Although the German students value cordial relationship with teachers and peers, their primary concern is to complete the academic requirements as determined by their teachers. The German students expressed the desire to complete assigned tasks because they represent the academic content of the course. Since they are typically graded on written exams and the quality of their participation in class rather than on homework assignments, the outside preparation becomes a private intellectual activity where any extrinsic reward is delayed. The necessity to internalize academic content explains the German students' arduous and systematic approaches to memorizing written texts. Because assessment in Germany tends to involve extensive written analysis rather than discrete points of knowledge (multiple choice), the students must demonstrate a theoretical understanding of the concepts.

From my observations, the intention of the German teachers was not to make learning fun; nor was it to generate student interest. In fact, the teachers offered few attempts to motivate their students in any way. Rather, the teachers sought means to impart knowledge and allow for students to demonstrate their understanding, often through discussion and typically in a voluntary fashion [*sich anmelden*]. Since nearly all of the communication in the German classroom was directed by the teacher, student-to-student comments were rare. This left the impression that each student was in class as an independent learner, focused upon personal goals.

The German teachers did not express the desire for their students to love being in class; rather, they sought to engender a love of knowing [*Wissenslust*]. The German students also expressed a desire to develop intellectual skills that will serve them at the university and beyond. For example, Gisela hoped to “develop logical thinking” and the capacity to solve difficult problems, now and in the future. My overall impression was that the German students considered school to be serious business, worthy of their effort, though not necessarily an expression of joy.

In contrast, the five American students were unified in their expression of love for attending school. This love extended to the completion of homework, preparation for exams, and participation in class discussions. They described

extra-curricular school activities such as lacrosse, soccer, music, and theatrical performances in terms of joy.

Perhaps most striking was their characterization of close relationships with classmates, teachers, and administrators. Andrew stated that his classmates were his best friends, while Amelia remarked that her classmates were “hilarious,” adding “Love ‘em.” I was left with the impression that the American students had very busy schedules, typically following a full school day with athletics, musical rehearsal, and homework. However, they described these activities in positive terms, stressing the joy of being with classmates and contributing to a school culture in which they were fully invested.

While the American students expressed outward enjoyment in attending school, they were less inclined to reference specific academic material than their German counterparts. The lone exception was Amelia, who put forth a litany of academic references, often connecting the disciplines to broader contexts. The American students focused their attention on academic outcomes, particularly with respect to those that may augment their college applications. Although they shared Ashley’s appreciation of the *concepts* (“some concepts I enjoy”), they were reticent to explicate them in any detail or explain why they found them enjoyable.

While most of the American participants avoided bringing up specific content from their courses, they were eager to describe the process through which

they have become successful. Without exception they characterized themselves as highly competitive, both in the areas of academics and athletics. The American teachers leveraged this competitive orientation by stressing the importance of achievement, particularly with respect to the Advanced Placement exams. The early college application process, including entrance exams, essays, and campus visits accentuates the students' competitiveness, creating an awareness of class rank that underlies the outwardly cooperative and supportive learning environment.

Andrew articulated how the competition between students does not negatively affect the sense of belonging that embodies the school culture ("It's kind of friendly"). While the German teachers attempted to instill a love of knowing in the students, the American teachers endeavored to create an environment of inclusion where students feel a sense of school spirit and joy throughout the educational process.

This divergence in attitude toward academic content (Germans) and the process of attending school (Americans) accentuates systemic differences between the respective educational environments. This was reflected in the students' approach to the interviews and how they treated issues relating to academic pursuits. As noted at the end of the Analysis section, the American students engaged in significantly more laughter during the interviews than the Germans. I suspect that the Americans viewed themselves as uniquely motivated

to implement their rigorous study and homework routines. With this in mind, I found that most of the laughter occurred when they referenced particular techniques that accentuated their work ethic.

In contrast, the German students laughed approximately three times less on average than the American students during the interviews. This aligns with the perspective that German students view school as serious work for which all students should devote energy and attention. Although they are the top-performing students in the school, their words indicated that their approach to learning was in no way exceptional.

Implications for Research

This phenomenological study presented data to explicate a unique problem, which has gone largely unnoticed by researchers. Although there has been significant focus on improving educational outcomes of low-performing students through motivational techniques (praise, rewards, competition), little research has been devoted to viewing how those practices affect the best students. Since the research problem represents a rarified concept, which may be viewed as counterintuitive, the cross-cultural element allowed for scrutiny in areas that may not receive attention in a single-case study.

For example, the German practice of maintaining a self-contained classroom informed the American practice of discipline-based groupings. Likewise, the American practice of differentiated course levels (regular, honors,

AP) informed the German practice of selecting majors in the orientation phase [*Orientierungsstufe*]. The phenomenological approach to data collection and analysis, including campus tours, classroom observations, and interviews, provides a framework for future research. By allowing the voices of the participants, particularly the nine students, to be heard, I revealed aspects of the phenomenon of gifted academic motivation that may not have been accessible through quantitative analysis.

Implications for Theory

Although substantial research has employed self-determination theory (Deci & Ryan, 1985) and flow theory (Csikszentmihaly, 1975, 1990, 1997), the two constructs have rarely been used simultaneously. Most studies based upon the framework of self-determination theory (Deci & Ryan) employ quantitative methodology, typically examining free-choice behavior or self-report measures to evaluate intrinsic motivation. By employing a phenomenological approach, the present study considered the complexity of human motivation and allowed for a more fluid assessment of the continuum that connects intrinsic and extrinsic orientations. Because the two student groups differed with respect to perceived choice, autonomy-supportive teaching, and relatedness at school, I sought an explanation through analysis of systemic educational differences in Germany and the United States. The cross-cultural data pointed to both the importance of self-

determination and to the motivational effect of social and educational factors, such as parenting and teaching.

Because flow experiences can be characterized as a form of heightened intrinsic motivation, flow theory (Csikszentmihaly, 1975, 1990, 1997) would appear to be complementary to self-determination theory (Deci & Ryan, 1985). However, I uncovered instances where the two constructs work in opposition. For example, competition is often present in flow experiences, particularly in the contexts of athletics and gaming (Csikszentmihaly). Yet self-determination theory predicts that focus on competition undermines intrinsic motivation (Deci, 1975; Deci et al., 1981).

I also pointed out that a range of activities can produce flow states, regardless of their qualitative content. The construct supports both superficial activities such as video games along with complex and meaningful activities, such as education. In keeping with the phenomenological approach, research on flow theory (Csikszentmihaly, 1975, 1990, 1997) focuses on the inner processes of individuals who are engaged in intrinsically motivated activities. By reporting the words of the participants, I was able to substantiate many elements of the construct, often through the students' anecdotes. I also had the opportunity to observe students as they engaged in flow-type experiences in the classroom. These accounts provide insightful articulation of the elements of the theory.

Implications for Practice

In the Review of Literature, I suggested that the German and American educational systems have a history of reciprocal influence. The recent trend in Germany toward the comprehensive high school [*Gesamtschule*] has its roots in the single-track concept of the American high school. Similarly, educators in the United States have instituted the tracking practice common in the German system through advanced placement and honors programs at the high school level.

With this in mind, the present study provided insight into both educational systems, particularly with respect to student motivation. It addressed the unintended consequences of standards-based instruction, uniform teaching methods, and high-stakes testing that has become the norm in both countries. Perhaps most importantly, it identified gifted academic motivation as a potential problem, rather than as an outward sign of a school's success. I proposed a longer view of education, beyond the relative success of students on achievement measures.

I suggested that the long-term love of learning can be undermined by the methods of attaining short-term academic success. The phenomenon is a truly K-16 educational issue, since extrinsic motivators are introduced in the first years of school, accelerate through the secondary years, and continue through university study. The secondary students in the study represent the desired end-product of both the German and American educational systems. By examining the

motivational orientation of these individuals critically, I crystalized a problem that is endemic and worthy of future research.

Suggestions for Future Research

Although Germany and the United States provided a reasonable starting point for uncovering the problematical elements of motivation for academically gifted students, future research might involve countries with more disparity in educational traditions. For example, the educational system in Finland stresses autonomy-supportive instruction and limits standardized testing. A contrast would be Korea or Japan where competition and testing are of central importance to educational practice.

Since longitudinal data is scarce with respect to intrinsic motivation, it would be fruitful to continue the present study to include the students' completion of high school and their first year in college. This would provide insight into the process of regulation where extrinsic goals become internalized into the students' sense of self. While I chose elite private schools to gain understanding of the most high-achieving students, future research could involve students attending public school. Research could also include lower-performing students or students at a variety of grade levels. It would also be instructive to study the motivational orientation of graduate students who have selected an area of specialization that aligns with professional goals. This would add the element of potential

professional promotion and monetary reward to the competition for grades that drives undergraduate education.

Limitations and Lessons Learned

Limitations of the present cross-cultural study relate to the lack of sample size and the length of time on site. In my case, I interviewed nine students, four teachers, and three administrators on two sites. I observed each student at least two times in the classroom setting and remained at each site for one week. I certainly could have benefited from additional student interviews, teacher interviews, and classroom visits. However, particularly in the German school, the issue of saturation of data became apparent. Since the classes were relatively short and highly predictable in structure, subsequent visitations may have provided diminishing returns.

Although the design did not call for interviews with parents, the students' frequent references to parenting practices demonstrated a potential need for corroboration. The parents could have revealed insight into how the students' academic achievement and motivational orientation developed over time. A key finding related to how the parents of both groups of students demonstrated academic involvement during the elementary years, followed by an autonomy-supportive approach during middle and high school. It would have been instructive to learn the parents' rationale for this approach and the extent to which it was a reaction to the students' success.

As I attempted to elucidate the problem of gifted academic motivation, I suspected that my account might fall on deaf ears. The culture of assessment and achievement in both Germany and the United States has become so pronounced that a study on the intrinsic love of learning may appear out of step and even a distraction from more pressing needs. While I pored over the transcripts of interviews, I vacillated between two conflicting appraisals of the students' academic efforts.

My first impression was that their steely resolve to maintain the highest possible academic outcomes was admirable and worthy of emulation. I considered how pleasant it might be to teach them and wondered why my own students could not maintain such standards. When I examined the quality of their motivation, I was awed by their ability to sustain effort, even when the task was uninspiring. Their accounts of packed schedules, late night study sessions, and testing regimens brought to mind Sisyphus as he perpetually pushed his rock up the hill.

At the same time, I was troubled by their willingness to devote such a substantial portion of their psychic energy to achieving proscribed academic goals. While they revealed interest in the academic content of their courses, few described independent scholarly pursuits. The consensus expressed by the students was that their rigorous academic requirements did not allow for such outside intellectual activities. As I analyzed the data, I considered each student

independently and wondered how she or he would progress along the continuum of extrinsic to intrinsic motivation for academic tasks. I imagined the nine students in college and speculated whether the selection of an academic major would instigate a process of exploration or would effectuate a narrow approach to the contents of the syllabus.

From the research process, I gained a greater appreciation of the complexity of human motivation. After examining the students' words for a period of months, I learned that there are many levels of motivation, often resisting the binary distinction between intrinsic and extrinsic orientations. A student may be simultaneously motivated to please parents, to receive an exemplary grade, to gain an understanding of concepts, *and* to engage in an inherently enjoyable activity. Although the students in the study were motivated by a range of intrinsic and extrinsic factors, perhaps most pervasive was the motivation to be successful. This could indicate relative success through competition or an absolute success by meeting a proscribed standard. Since the adults in the room set the standard for success, the students revealed how they negotiate this self-perpetuating system of feedback, rewards, and extrinsic goals.

In keeping with Heidegger's (1996) claim that "every seeking takes its direction beforehand from what is sought" (p. 3), I attempted to elucidate a problem that I formulated through the lens of my own prejudices as an educator. Following Postman (1979), I support the conserving function of education: "Its

aim at all times is to make visible the prevailing biases of a culture and then, by employing whatever philosophies of education are available, to oppose them” (p.20).

With respect to the extrinsic motivators that are ubiquitous in the home and in society at large, I hold that the purpose of education is to offer resistance by offering autonomy-supportive learning opportunities. The present study offered a glimpse into the phenomenon of heightened extrinsic motivation to complete academic tasks. The student participants also offered insight into the regulation process through which those extrinsic goals can gradually become self-endorsed at the highest level.

APPENDIX A
STUDENT ORIENTATION PROTOCOL (ENGLISH)

STUDENT ORIENTATION PROTOCOL (ENGLISH)

Demographic Information

Gender: Male _____ Female _____

Procedures for Student Interviews Participant Orientation:

The student participant orientation will take place at the beginning of the school day and last approximately 30 minutes. All four participants will take part in the orientation together. It will be audiotaped, transcribed, coded, and analyzed in order to construct the essence of the phenomenon of gifted motivation, with respect to the four participants from each school.

Questions for Orientation

1. Please provide a two-minute history of your life.
2. How do you spend your free time when you are not engaged in school-related activities?

Instructions concerning your participation in the study:

I will observe two of your classes during the next few days. You will also take part in a 45-60 minute audiotaped interview. Finally, you will be asked to briefly respond to five to seven written questions on five consecutive nights through a link to Survey Monkey.

3. Do you have any questions concerning the study?

Thanks in advance for your participation.

Steven Bourgeois
Lead Investigator

APPENDIX B
SCHOOL DIRECTOR PROTOCOL (ENGLISH)

SCHOOL DIRECTOR PROTOCOL (ENGLISH)

Demographic Information

Gender: Male _____ Female _____

Position: _____

Years as Administrator: _____

Procedures for Director Interviews:

Director interviews will take place before or after the instructional day and last approximately 60 minutes. They will be audiotaped, transcribed, coded, and analyzed in order to corroborate student and teacher responses, and provide context for the study. Numbered questions will focus the interview; lettered questions are additional probing questions used as needed.

Open-Ended Interview Questions

1. Describe the academic program at your school.
 - a. What is the curricular focus?
 - b. What programs distinguish your school? Please describe these.
2. How does your school select students?
 - a. From where do the majority of your students come?
 - b. How many come from public, private, or homeschool settings?
3. What are the college goals for your students and how does the school support them?
 - a. How many will attend four-year colleges or universities?
 - b. How many will attend community colleges?
 - c. How does your school rank with comparable secondary schools for college acceptance?
4. Which state and national tests do your students take?
 - a. How do their scores compare with students attending schools in the area?
 - b. How much emphasis does your school place upon preparation for these assessments?
5. What is the role of teachers in selecting curriculum?
6. How would you describe the culture and climate at your school?
 - a. How would you characterize the academic focus at your school?

- b. Do students feel a sense of belonging at your school? Please explain.
- 7. Describe the level of oversight and involvement of parents with their children's academic endeavors. Please provide specific examples.
- 8. How do you define *success* with respect to students at your school?
 - a. What role does academic motivation play in student success?
 - b. How does the school support this?
- 9. Describe your leadership style.
- 10. What are your thoughts on academic motivation?
 - a. Specifically, to what extent do you feel the use of praise, rewards, and incentives increases student motivation?
 - b. How do you feel about incentives for teacher performance?
 - c. What are the characteristics of a student who is driven to learn? How does the school support this?
- 11. Is there anything you would like to add that may be relevant?

APPENDIX C
TEACHER PROTOCOL (ENGLISH)

TEACHER PROTOCOL (ENGLISH)

Demographic Information

Gender: Male _____ Female _____

Years of Experience as Teacher: _____

Name of Class:

Procedures for Teacher Interviews:

Teacher interviews will take place before or after the instructional day and last approximately 60 minutes. They will be audiotaped, transcribed, coded, and analyzed in order to corroborate student responses and provide context for the study.

Numbered questions will focus the interview; lettered questions are additional probing questions used as needed.

Open-Ended Interview Questions

1. Describe the academic content of the course.
 - a. Describe choices your students make within class.
 - b. Do you employ differentiated instruction that takes into account diverse levels of learner preparation? Please explain.
 - c. What value do your current students attribute to your class?

2. Describe a successful student? How do they become successful?
 - a. How do you know when your students are competent in the subject?
 - b. How much spread in student grades is present in your course?
 - c. Describe your students' level of focus during class.
 - d. Describe the impact of multi-tasking upon your students' academic output.

3. Which aspects of your class do you think students find the most enjoyable? Why?
 - a. Is it your role to generate interest for your students? Please explain.
 - b. Describe your relationship with students in your class.
 - c. Describe the relationship between students in your class.
 - d. Do students experience a sense of belonging in your class? Please explain.
 - e. Based upon experience, how quickly does time pass in your class for students?

4. Which aspects of your class do you think students find the least enjoyable?
Why?
 - a. Describe the level of pressure and stress within your classroom.
 - b. What distracts your students from completing academic tasks in your class?
 - c. Describe your students' resistance to learning activities in your class.
5. How do you feel about grades? To what extent do grades represent a motivating factor for your students?
 - a. Describe the feedback that you provide students.
 - b. How do you adjust instruction based upon formative data?
6. How do you feel about state and national tests, such as the TAKS, SAT, or ACT? Do you think these tests motivate your students to be academically successful? Please explain.
 - a. Do your students experience test anxiety? Please explain!
7. What role do families play in the academic success of your students? Do families have a rewards systems in place to motivate students achieve good grades? Describe your conversations with parents concerning academic achievement.
8. How essential is homework for student success in your class?
 - a. Do your students exhibit academic procrastination? Please explain.
9. Describe incentive systems that you use in class.
10. How do you define *student success* with respect to your class?
 - a. Describe the effort your students devote to the subject.
 - b. What skills do your students need to possess to be academically successful in your class?
11. What motivational techniques do you implement with your students?
 - a. What techniques do you employ to increase student effort in your class?
 - b. What are the characteristics of a student who is driven to learn? How do you as a teacher support this?
12. Closing Question: Is there anything you would like to add that may be relevant?

APPENDIX D
STUDENT PARTICIPANT PROTOCOL (ENGLISH)

STUDENT PARTICIPANT PROTOCOL (ENGLISH)

Procedures for Student Interviews:

Student interviews will take place at the end of the school day and last approximately 60 minutes. They will be audiotaped, transcribed, coded, and analyzed in order to construct the essence of the phenomenon of gifted motivation, with respect to the four participants from each school.

Demographic Information

Gender: Male _____ Female _____

Year in School: _____

Name of Current Math Class:

Name of Current History Class:

Areas of Academic Focus:

Top Choice for Future College:

Likely College Major:

Career Goal:

Open-Ended Interview Questions: Numbered questions will focus the interview; small lettered questions are additional probing questions used as needed.

1. You have been selected to participate in this study because of your consistently high academic performance. How would you describe yourself as a student? How do you define *success* with respect to school?
 - a. Do you consider yourself competent as a student? Please explain.
 - b. To what do you attribute your academic success?
 - c. Consider your participation in school for the past five years. Have you always been successful or has that success developed over time?
 - d. Are you competitive academically? Please explain.
 - e. Do you have a specific goal concerning class rank or GPA?
2. What motivates you to be successful in school?
 - a. What skills do you possess that allow you to be academically successful?
 - b. What aspects of your education do you consider the most challenging?
3. Which aspects of school do you find the most enjoyable? Why?
 - a. What parts of school you find the most interesting?
 - b. How did you develop this interest?
 - c. How have your academic interests changed over time?
4. Which aspects of school do you find the least enjoyable? Why?
5. How do you feel about grades? Do grades motivate you? Has this attitude developed over time? Please explain.
 - a. Do you ever fail to turn in work on time? If so, how do you feel?
 - b. Do you ever fail to study for an exam? If so, how do you feel?
6. How do you feel about state and national tests, such as the TAKS, SAT, or ACT? To what extent do these tests motivate you to be academically successful? How do you prepare for this type of testing?
7. What role does your family play in your academic success? Has your family ever had a rewards system in place to motivate you to achieve good grades? If so, describe this system. Do you talk to your family about your schoolwork? If so, describe these conversations.
 - a. Describe academic rules that your family sets for you?
 - b. Which academic rules do you set for yourself?
 - c. Describe the feedback that you receive from your family relating to school.
8. What are your feelings about the school you attend? Would you attend another if you could or do you like being at your present school? Please explain.
 - a. Describe your relationship with teachers at school.

- b. Describe your relationship with fellow students at school.
 - c. Describe your relationship with school administration.
 - d. Describe choices you have made with respect to your academic program.
9. What aspects of math class do find most enjoyable? Why?
- a. How quickly does time pass when you are in math class?
 - b. How quickly does time pass when you are studying for math class?
10. Which aspects of math class do you least enjoyable? Why?
11. How do you feel when you are in a math class?
- a. Describe the level of pressure and stress you feel in math class?
 - b. Describe choices that you make in math class.
 - c. Describe the feedback that you receive from your math teacher.
 - d. Do you feel test anxiety in math class? Please explain.
12. How do you feel when completing homework for math class?
- a. Do you feel tension to meet deadlines in math class?
 - b. Do you procrastinate in math class? Please explain.
 - c. Describe how you study for math class.
 - d. Are you alone when you study for math class?
 - e. Do you play music when you study for math class?
 - f. How long do you remain studying for math class?
 - g. Do you multi-task when studying for math class? Please explain.
13. Which strategies do you use to be successful in math class?
- a. Describe the effort you devote to math class.
 - b. Has this effort in math class increased or decreased during the past five years?
 - c. What distracts you from completing tasks for math class?
14. What motivates you to be successful in math class?
- a. Which parts of math class will have lasting value for you?
 - b. State your goals for math class.
15. What aspects of history class do find most enjoyable? Why?
- a. How quickly does time pass when you are in history class?
 - b. How quickly does time pass when you are studying for history class?
16. Which aspects of history class do you least enjoyable? Why?
17. How do you feel when you are in a history class?
- a. Describe the level of pressure and stress you feel in history class?

- b. Describe choices that you make in history class.
 - c. Describe the feedback that you receive from your history teacher.
 - d. Do you feel test anxiety in history class? Please explain.
18. How do you feel when completing homework for history class?
- a. Do you feel tension to meet deadlines for history class?
 - b. Do you procrastinate in history class? Please explain.
 - c. Describe how you study for history class.
 - d. Are you alone when you study for history class?
 - e. Do you play music when you study for history class?
 - f. How long do you remain studying for history class?
 - g. Do you multi-task when studying for history class? Please explain.
19. Which strategies do you use to be successful in history class?
- a. Describe the effort you devote to history class.
 - b. Has this effort in history class increased or decreased during the past five years?
 - c. What distracts you from completing tasks for history class?
 - d. Do you multi-task when studying or doing homework for history class?
20. What motivates you to be successful in history class?
- a. Which parts of history class will have lasting value for you?
 - b. State your goals for history class.
21. Closing Question: Is there anything you would like to add that may be relevant?

APPENDIX E

SURVEY MONKEY STUDENT PROTOCOL (ENGLISH)

SURVEY MONKEY STUDENT PROTOCOL (ENGLISH)

Demographic: What is your first name?

Day 1 Journal Prompt:

1. Describe the academic tasks that you were required to complete today.
2. Did you successfully complete them?
3. Why did you attempt to complete the academic tasks?
4. How did you feel as you completed the academic tasks?
5. Did you find the tasks interesting or uninteresting? Please explain.
6. Is there anything you would like to add that may be relevant?

Day 2 Journal Prompt:

1. Describe a specific academic task that you completed today that you found particularly interesting.
2. Describe how you completed this task and your level of success.
3. Why did you attempt to complete this academic task?
4. How did you feel as you completed the academic task?
5. Is there anything you would like to add that may be relevant?

Day 3 Journal Prompt:

1. Describe a specific academic task that you completed today that you found particularly uninteresting.
2. Describe how you completed this uninteresting task and your level of success.
3. Why did you attempt to complete this uninteresting academic task?
4. How did you feel as you completed the uninteresting academic task?
5. Is there anything you would like to add that may be relevant?

Day 4 Journal Prompt:

1. Describe a time in the past day that you were particularly immersed in an academic activity.
2. What skills did you use to complete the activity?
3. Describe the feedback that you received as you completed the task.
4. How did you feel as you completed the task?
5. Describe your perception of the passing of time while completing the task.
6. Is there anything you would like to add that may be relevant?

Day 5 Journal Prompt:

1. Describe your level of stress at school today.
2. Did you feel competent to complete the challenges of the school day? Please explain.
3. Describe choices that you were able to make during school today.
4. Describe your level of comfort with teachers and fellow students at school today.
5. Is there anything you would like to add that may be relevant?

APPENDIX F

STUDENT PARTICIPANT ORIENTATION PROTOCOL (GERMAN)

STUDENT PARTICIPANT ORIENTATION PROTOCOL (GERMAN)

Einweisung der teilnehmende Schülerinnen und Schüler

Demographische Informationen

Geschlecht männlich____ weiblich____

Vorgehensweise für Schülerinterviews bei der Teilnehmereinweisung:

Die Einweisung der Schülerteilnehmer findet am Anfang des Schultages statt und dauert ungefähr dreißig Minuten. Alle vier Teilnehmer nehmen gemeinsam an der Einweisung teil. Diese wird auf Tonband aufgenommen, transkribiert, kodiert und analysiert, um das Phänomen der Motivationsbegabung zu untersuchen, in Bezug auf die vier Teilnehmer von jeder Schule.

Fragen zur Einweisung

1. Bitte geben Sie Ihr Leben in zwei Minuten wieder.
2. Wie verbringen Sie Ihre Freizeitstunden, wenn Sie nicht mit Arbeit für die Schule beschäftigt sind?

Hinweise bezüglich Ihrer Teilnahme an der Studie:

Ich werde zwei von Ihren Unterrichtsstunden in den nächsten Schultagen beobachten. Sie werden an einem 45 bis 60-Minuten Bandinterview teilnehmen. Schließlich werden Sie gebeten kurz fünf bis sieben schriftliche Fragen an fünf aufeinander folgenden Nächten zu beantworten. Die Fragen werden über einen Link von Survey Monkey verteilt werden.

3. Haben Sie irgendwelche Fragen zur Studie?

Danke im Voraus für Ihre Teilnahme!

Steven Bourgeois
Hauptforscher

APPENDIX G
SCHOOL DIRECTOR PROTOCOL (GERMAN)

SCHOOL DIRECTOR PROTOCOL (GERMAN)

Interviewprotokoll für den Schuldirektor

Demographische Informationen (Statistische Angaben)

Geschlecht: männlich____ weiblich____

Dienstjahre als Schulleiter: _____

Ablauf des Schulleiterinterviews:

Das Interview des Schulleiters findet vor oder nach dem Schultag statt und dauert ungefähr sechzig Minuten. Es wird auf Tonband aufgenommen, transkribiert, kodiert und analysiert, um die Antworten der Lehrer und Schüler zu bestätigen, und um einen Kontext für die Studie zu liefern. Nummerierte Fragen werden das Interview strukturieren. Zusätzliche Fragen (mit Großbuchstaben) werden nach Bedarf verwendet.

Offene Interviewfragen

1. Beschreiben Sie das akademische Programm an Ihrer Schule!
 - a. Beschreiben Sie den vorgeschriebenen Lehrplan vom Kultusministerium in Hessen!
 - b. Welche Programme unterscheiden Ihre Schule von anderen Schulen? Bitte beschreiben Sie diese!
2. Wie wählen Sie ihre Schülerinnen und Schüler aus?
 - a. Woher kommen die meisten Ihrer Schülerinnen und Schüler?
 - b. Wie viele kommen aus öffentlichen oder privaten Grundschulen?
3. Was sind die Studienziele Ihrer Schülerinnen und Schüler und wie unterstützt die Schule diese Ziele?
 - a. Wie viel Prozent werden an Universitäten studieren?
 - b. Wie viel Prozent werden an Fachhochschulen studieren?
 - c. Wie kann Ihre Schule in Bezug auf die Studierendennote Ihrer Abiturienten im Vergleich mit anderen Schulen eingeordnet werden?
 - d. Was ist die durchschnittliche Abiturnote an Ihrer Schule?
 - e. Welche nationalen und landesweiten Tests (exclusive Abitur) schreiben Ihre Schülerinnen und Schüler in der Oberstufe?
 - f. Wie schneiden Ihre Schülerinnen und Schüler im Vergleich mit anderen Schulen in der Region ab?
 - g. Wie viel Gewicht legt Ihre Schule auf die Vorbereitung dieser Tests?
4. Welche Rolle spielen die Lehrer bei der Auswahl der Lehrinhalte?
5. Wie würden Sie die Kultur und das Klima an Ihrer Schule beschreiben?

- a. Wie würden Sie den akademischen Fokus an Ihrer Schule charakterisieren?
- b. Erleben die Schülerinnen und Schüler ein Gefühl der Zugehörigkeit an Ihrer Schule? Bitte erklären Sie!
6. Beschreiben Sie das Niveau der Kontrolle und Mitwirkung der Eltern bei den akademischen Bemühungen Ihrer Schülerinnen und Schüler! Bitte geben Sie spezifische Beispiele!
7. Wie definieren Sie *Erfolg* in Bezug auf die Schülerinnen und Schüler an Ihrer Schule?
 - a. Welche Rolle spielt die akademische Motivation beim Erfolg der Studierenden? Wie unterstützt die Schule diese Ziele?
8. Beschreiben Sie Ihren Führungsstil.
9. Was sind Ihre Gedanken zu akademischer Motivation?
 - a. Genauer gesagt, in welchem Maße glauben Sie, dass der Einsatz von Lob Belohnungen und Anreizen die Motivation der Schülerinnen und Schüler erhöht?
10. Was halten Sie von einer leistungsgerechten Bezahlung der Lehrer?
11. Was sind die Merkmale von leistungsbereiten und lernbegeisterten Schülerinnen oder Schülern? Wie können Sie diese als Schulleiter unterstützen?
12. Gibt es sonst noch etwas, das Sie gerne hinzufügen wollen oder das relevant zur Studie sein könnte?

APPENDIX H
TEACHER PROTOCOL (GERMAN)

TEACHER PROTOCOL (GERMAN)

Interviewprotokoll für Lehrer

Demographische Informationen (Statistische Angaben)

Geschlecht: männlich____ weiblich____

Dienstjahre als Lehrer: _____

Name des Kurses:

Ablauf der Lehrerinterviews:

Die Lehrerinterviews finden vor oder nach dem Schultag statt und dauern ungefähr sechzig Minuten. Sie werden auf Tonband aufgenommen, transkribiert, kodiert und analysiert, um die Schülerantworten zu bestätigen, und um einen Kontext für die Studie zu liefern. Nummerierte Fragen werden das Interview strukturieren. Zusätzliche Fragen mit Großbuchstaben werden nach Bedarf verwendet.

Offene Interviewfragen

1. Beschreiben Sie die akademischen Inhalt des Kurses!
 - a. Beschreiben Sie die Wahlmöglichkeiten Ihrer Schülerinnen und Schüler hinsichtlich des Kurses!
 - b. Differenzieren Sie Ihre Unterrichtsinhalte bezüglich des unterschiedlichen Lernvermögens der Schülerinnen und Schüler? Bitte erklären Sie!
 - c. Welchen Werte hat der Kurs für Ihre Schülerinnen und Schüler.
2. Beschreiben Sie einen erfolgreicher Schüler oder eine erfolgreiche Schülerin! Wie wurden sie erfolgreich?
 - a. Woher wissen Sie, wann Ihre Schülerinnen und Schüler kompetent in Ihrem Fach sind?
 - b. Wie weit gefächert ist das Spektrum der Schülernoten in Ihrem Kurs?
 - c. Beschreiben Sie den Grad der Fokussierung Ihrer Schülerrinnen und Schüler während des Unterrichts!
3. Beschreiben Sie die Effekte von Multi-Tasking auf die Leistungen Ihrer Schülerinnen und Schüler!
4. Welche Aspekte Ihres Unterrichts finden Ihre Schülerin und Schüler am angenehmsten? Warum?
 - a. Ist es Ihre Aufgabe, das Interesse für Ihre Schülerinnen und Schüler zu generieren? Bitte erklären Sie!
 - b. Beschreiben Sie Ihr Verhältnis zu den Schülerinnen und Schülern in Ihrer Klasse!
 - c. Beschreiben Sie die Beziehungen zwischen Schülern in Ihrer Klasse!

- d. Erleben Ihre Schülerinnen und Schüler ein Gefühl der Zugehörigkeit in Ihrer Klasse? Bitte erklären Sie!
 - e. Nach Ihrer Erfahrungen, wie schnell vergeht die Zeit in Ihrer Klasse aus der Perspektive der Schülerinnen und Schüler?
5. Welche Aspekte Ihres Unterrichts finden Ihre Schülerinnen und Schüler am unangenehmsten? Warum?
- a. Beschreiben Sie die Höhe von Druck und Stress in Ihrem Klassenzimmer!
 - b. Was lenkt Ihre Schüler von dem Abschließen der schulischen Aufgaben in Ihrer Klasse ab?
 - c. Beschreiben Sie den Widerstand Ihrer Schülerinnen und Schüler gegen Lernaktivitäten in Ihrer Klasse!
6. Wie denken Sie über Noten? Inwieweit stellen Noten einen motivierender Faktor für Ihre Schüler dar?
- a. Beschreiben Sie das Feedback, das Sie Schülern geben!
 - b. Wie passen Sie Ihren Unterricht den bewerteten Schülerleistungen (z.B. Klassenarbeiten und Hausarbeiten) an?
7. Was halten Sie von Staatsexamen wie dem Abitur? Glauben Sie diese Tests motivieren Ihre Schüler akademisch erfolgreich zu sein? Bitte erklären Sie!
- a. Erleben Ihre Schülerinnen und Schüler Prüfungsangst? Bitte erklären Sie!
8. Welche Rolle spielt die Familie beim schulischen Erfolg Ihrer Schülerinnen und Schüler? Haben die Familien ein Belohnungssystem, um Schülerinnen und Schüler zu motivieren gute Noten zu erreichen? Beschreiben Sie Ihre Gespräche mit den Eltern über die schulischen Leistungen!
9. Wie wichtig sind Hausaufgaben für den Erfolg Ihrer Schülerinnen und Schüler?
- a. Versuchen Ihre Schüler Ihren Unterricht zu verschleppen? Erklären Sie!
 - b. Schieben Ihr Schüler Dinge im Geschichtsunterricht auf die lange Bank? Erklären Sie!
10. Beschreiben Sie Anreizsysteme, die Sie im Unterricht einsetzen!
11. Wie definieren Sie *Erfolg* in Bezug auf Ihre Klasse?
- a. Beschreiben Sie die Anstrengungen, die Ihre Schülerinnen und Schüler dem Kurs widmen!
 - b. Welche Fähigkeiten müssen Ihre Schülerinnen und Schüler besitzen, um in Ihrer Klasse schulisch erfolgreich zu sein?

12. Welche Motivationstechniken wenden Sie bei Ihren Schülerinnen und Schülern an?
- a. Welche Techniken benutzen Sie, um die Anstrengungen der Schülerinnen und Schüler in Ihrer Klasse zu erhöhen?
 - b. Was sind die Merkmale der Schülerinnen und Schüler, die motiviert sind zu lernen? Wie können Sie das als Lehrer unterstützen?
13. Gibt es sonst noch etwas, das Sie gerne hinzufügen wollen oder das relevant sein könnte?

APPENDIX I
STUDENT PARTICIPANT PROTOCOL (GERMAN)

STUDENT PARTICIPANT PROTOCOL (GERMAN)

Interviewprotokoll für Schülerinnen und Schüler

Ablauf der Schülerinterviews:

Die Interviews der Schülerinnen und Schüler finden am Ende des Schultages statt und dauern ungefähr sechzig Minuten. Sie werden auf Tonband aufgenommen, transkribiert, kodiert und analysiert, um das Phänomen der Motivationsbegabung zu untersuchen, in Bezug auf die vier Teilnehmer von jeder Schule.

Demographische Informationen

Geschlecht: männlich____ weiblich____

Klasse: _____

Inhalt des Matheunterrichts momentan:

Inhalt des Geschichtsunterrichts momentan:

Hauptfächer:

Name Ihrer Wunschhochschule oder -universität:

Wahrscheinliches Hauptstudienfach an der Hochschule oder an der Universität:

Berufsziel:

Offene Interviewfragen:

Nummerierte Fragen werden das Interview strukturieren. Zusätzliche Fragen mit Großbuchstaben werden nach Bedarf verwendet.

1. Sie wurden durch ihre gleichbleibend hohen Leistungen ausgewählt, an dieser Studie teilzunehmen. Wie würden Sie sich als Student beschreiben? Wie definieren Sie Erfolg in Bezug auf die Schule?

- a. Halten Sie sich als Schülerin oder Schüler für kompetent? Bitte erklären Sie.
 - b. Warum haben Sie schulischen Erfolg?
 - c. Betrachten Sie Ihre Teilnahme an der Schule in den letzten fünf Jahren. Sind Sie schon immer erfolgreich oder hat sich der Erfolg im Laufe der Zeit entwickelt?
 - d. Sind Sie strebsam in Bezug auf die Schule? Bitte erklären Sie!
 - e. Haben Sie ein bestimmtes Ziel bezüglich ihrer Position in der Klasse oder bezüglich ihres Notendurchschnitts in Zeugnisse?
2. Was motiviert Sie in der Schule erfolgreich zu sein? Welche Fähigkeiten besitzen Sie, die es Ihnen erlauben akademisch erfolgreich zu sein?
 3. Welche Aspekte Ihrer Ausbildung stellen für Sie die größten Herausforderungen dar?
 4. Welche Aspekte der Schule empfinden Sie als besonders angenehm? Warum?
 - a. Welche Aspekte der Schule sind für Sie am interessantesten?
 - b. Wie hat sich dieses Interesse entwickelt?
 - c. Wie haben sich Ihre akademischen Interessen im Laufe der Zeit verändert?
 5. Welche Aspekte der Schule sind für Sie am unangenehmsten? Warum?
 6. Was halten Sie von Noten? Sind Sie durch Noten motiviert? Hat sich diese Haltung im Laufe der Zeit entwickelt? Bitte erklären Sie!
 - a. Haben Sie jemals eine Hausarbeit bzw. Hausaufgabe nicht zur richtigen Zeit abgegeben? Wenn ja, wie haben Sie sich gefühlt?
 - b. Haben sie jemals nicht für eine Prüfung gelernt? Wenn ja, wie haben Sie sich gefühlt?
 7. Was halten Sie von Prüfungen wie dem Abitur? Inwiefern motivieren diese Tests Sie akademisch erfolgreich zu sein? Wie bereiten Sie sich auf diese Art von Tests vor?
 8. Welche Rolle spielt Ihre Familie bei Ihrem akademischen Erfolg? Hat Ihre Familie ein Belohnungssystem, um Sie zu motivieren gute Noten zu erreichen? Reden Sie mit Ihrer Familie über Schulaufgaben? Wenn ja, beschreiben Sie diese Gespräche!
 - a. Beschreiben Sie schulischen Regeln, die Ihre Familie für Sie aufstellt?
 - b. Welche Regeln für die Schule stellen Sie für sich selbst auf?

- c. Beschreiben Sie das Feedback, das Sie von Ihrer Familie bezüglich der Schule erhalten!
9. Was sind Ihre Gefühle über Ihre gegenwärtige Schule? Würden Sie eine andere Schule besuchen, wenn es möglich wäre oder würden Sie lieber an Ihrer gegenwärtigen Schule bleiben? Bitte erklären Sie!
- a. Beschreiben Sie Ihre Beziehung zu den Lehrern an der Schule!
 - b. Beschreiben Sie Ihre Beziehung zu den Mitschülern an der Schule!
 - c. Beschreiben Sie Ihre Beziehung zu der Schulleitung!
 - d. Beschreiben Sie die Wahlmöglichkeiten, die Sie in Bezug auf ihre schulische Laufbahn gehabt haben!
10. Welche Aspekte des Matheunterrichts finden Sie am angenehmsten? Warum?
- a. Wie schnell vergeht die Zeit, wenn Sie in einer Mathestunde sind?
 - b. Wie schnell vergeht die Zeit, wenn Sie sich zu Hause für den Matheunterricht vorbereiten?
11. Welche Aspekte des Matheunterrichts finden Sie am unangenehmsten? Warum?
12. Wie fühlen Sie sich während einer Mathestunde?
- a. Beschreiben Sie die Höhe von Druck und Stress im Matheunterricht!
 - b. Beschreiben Sie die Wahlmöglichkeiten, die Sie im Matheunterricht haben!
 - c. Beschreiben Sie das Feedback, das Sie von Ihrem Mathematiklehrer erhalten!
 - d. Erleben Sie Prüfungsangst in der Mathestunde? Bitte erklären Sie!
13. Wie fühlen Sie sich bei der Erledigung der Hausaufgaben für den Matheunterricht?
- a. Empfinden Sie Druck Abgabetermine im Matheunterricht einzuhalten?
 - b. Schieben Sie Dinge im Matheunterricht auf die lange Bank? Bitte erklären Sie!
 - c. Beschreiben Sie, wie Sie für den Matheunterricht lernen!
 - d. Sind Sie allein, wenn Sie für Matheunterricht lernen?
 - e. Hören Sie Musik, wenn Sie für den Matheunterricht lernen?
 - f. Wie lange dauert eine typische Lerneinheit für den Matheunterricht?
 - g. Machen Sie Multitasking beim Mathelernen? Bitte erklären Sie?
14. Welche Strategien benutzen Sie, um im Matheunterricht erfolgreich zu sein?

- a. Beschreiben Sie die Anstrengungen, die Sie dem Matheunterricht widmen!
 - b. Haben sich Ihre Anstrengungen im Matheunterricht in den letzten fünf Jahren erhöht oder vermindert?
 - c. Was lenkt Sie von dem Abschließen der Aufgaben im Matheunterricht ab?
15. Was motiviert Sie im Matheunterricht erfolgreich zu sein?
- a. Welche Teile des Matheunterrichts haben bleibenden Wert für Sie?
 - b. Nennen Sie Ihre Ziele für den Matheunterricht!
16. Welche Aspekte des Geschichtsunterrichts finden Sie am angenehmsten? Warum?
- a. Wie schnell vergeht die Zeit, wenn Sie in einer Geschichtsstunde sind?
 - b. Wie schnell vergeht die Zeit, wenn Sie für den Geschichtsunterricht lernen?
17. Welche Aspekte des Geschichtsunterrichts finden Sie am unangenehmsten? Warum?
18. Wie fühlen Sie sich während einer Geschichtsstunde?
- a. Beschreiben Sie die Höhe von Druck und Stress im Geschichtsunterricht!
 - b. Beschreiben Sie die Wahlmöglichkeiten, die Sie im Geschichtsunterricht haben!
 - c. Beschreiben Sie das Feedback, das Sie von Ihrem Geschichtslehrer erhalten!
 - d. Erleben Sie Prüfungsangst im Geschichtsunterricht? Bitte erklären Sie!
19. Wie fühlen Sie sich bei der Erledigung der Hausaufgaben für den Geschichtsunterricht?
- a. Empfinden Sie Druck Abgabetermine im Geschichtsunterricht einzuhalten?
 - b. Schieben Sie Dinge im Geschichtsunterricht auf die lange Bank? Bitte erklären Sie!
 - c. Beschreiben Sie, wie Sie für den Geschichtsunterricht lernen !
 - d. Sind Sie allein, wenn Sie für den Geschichtsunterricht lernen ?
 - e. Hören Sie Musik, wenn Sie für den Geschichtsunterricht lernen ?
 - f. Wie lange dauert eine typische Lerneinheit für den Geschichtsunterricht?
 - g. Machen Sie Multitasking beim Lernen für den Geschichtsunterricht? Bitte erklären Sie!

20. Welche Strategien benutzen Sie, um im Geschichtsunterricht erfolgreich zu sein?
- a. Beschreiben Sie die Anstrengungen, die Sie dem Geschichtsunterricht widmen!
 - b. Haben sich Ihre Anstrengungen im Geschichtsunterricht in den letzten fünf Jahren erhöht oder vermindert?
 - c. Was lenkt Sie von dem Abschließen der Aufgaben im Geschichtsunterricht ab?
21. Was motiviert Sie, im Geschichtsunterricht erfolgreich zu sein?
- a. Welche Teile des Geschichtsunterrichts haben bleibenden Wert für Sie?
 - b. Nennen Sie Ihre Ziele für Geschichtsunterricht!
22. Gibt es sonst noch etwas, das Sie gerne hinzufügen wollen oder das relevant sein könnte?

APPENDIX J

SURVEY MONKEY STUDENT PROTOCOL (GERMAN)

SURVEY MONKEY STUDENT PROTOCOL (GERMAN)

Survey Monkey Fragen für Schülerjournale

Demographische Information: Wie ist ihr Vorname?

Tag 1 Schülerjournale:

1. Beschreiben Sie die schulischen Aufgaben, die Sie heute erledigen mussten!
2. Haben Sie diese Aufgaben erfolgreich erledigt?
3. Warum haben Sie versucht diese schulischen Aufgaben zu erledigen?
4. Wie haben Sie sich gefühlt, als Sie diese schulischen Aufgaben erledigt haben?
5. Haben Sie die Aufgaben interessant oder uninteressant gefunden? Bitte erklären Sie!
6. Gibt es sonst noch etwas, das Sie gerne hinzufügen wollen oder das relevant sein könnte?

Tag 2 Schülerjournale:

1. Beschreiben Sie eine interessante akademische Aufgabe, die Sie heute erledigt haben!
2. Beschreiben Sie, wie Sie diese Aufgabe erledigt haben und Ihr Niveau des Erfolgs!
3. Warum haben Sie es versucht diese akademische Aufgabe zu erledigen?
4. Wie haben Sie sich gefühlt als Sie diese schulische Aufgabe erledigt haben?
5. Gibt es sonst noch etwas, das Sie gerne hinzufügen wollen oder das relevant sein könnte?

Tag 3 Schülerjournale:

1. Beschreiben Sie eine uninteressante schulische Aufgabe, die Sie heute erledigt haben!
2. Beschreiben Sie, wie Sie diese uninteressante Aufgabe erledigt haben und Ihr Niveau des Erfolgs!
3. Warum haben Sie es versucht diese uninteressante schulische Aufgabe zu erledigen?
4. Wie haben Sie sich gefühlt, als Sie diese uninteressante schulische Aufgabe erledigt haben?
5. Gibt es sonst noch etwas, das Sie gerne hinzufügen wollen oder das relevant sein könnte?

Tag 4 Schülerjournale:

1. Beschreiben Sie eine schulische Tätigkeit in den letzten Tagen, in die Sie besonders versunken waren!
2. Welche Fähigkeiten haben Sie benutzt, um die Aktivität zu erledigen?

3. Beschreiben Sie das Feedback, das Sie erhalten haben, als Sie die Aufgabe erledigt hatten!
4. Wie haben Sie sich gefühlt, als Sie die Aufgabe erledigt haben? Beschreiben Sie Ihre Wahrnehmung!
5. Ist die Zeit schnell oder langsam vergangen, während Sie die Aufgabe erledigt haben!
6. Gibt es sonst noch etwas, das Sie gerne hinzufügen wollen oder das relevant sein könnte?

Tag 5 Schülerjournale:

1. Beschreiben Sie Ihren Grad an Stress heute in der Schule!
2. Haben Sie sich kompetent gefühlt, die Herausforderungen des Schultages zu erledigen? Bitte erklären Sie!
3. Beschreiben Sie die Wahlmöglichkeiten, die Sie heute während des Schultages hatten!
4. Beschreiben Sie Ihr Niveau an Harmonie mit Lehrern und Mitschülern heute in der Schule!
5. Gibt es sonst noch etwas, das Sie gerne hinzufügen wollen oder das relevant sein könnte?

APPENDIX K
CLASSROOM OBSERVATION PROTOCOL

CLASSROOM OBSERVATION PROTOCOL

Location

Classroom:
Name of teacher:
Subject:
Grade
Number of students:
Names of study participants:
Date:
Time:

Characteristic

Physical description of the room:	Placement of desks	Additional attributes
Relatedness:	Student to teacher	Student to students
Student choice:	Presence of choice	Lack of choice
Optimal challenge:	High challenge	Low challenge

Student engagement:	High engagement	Low engagement
Student interest and enjoyment:	High interest	Low interest
Intrinsic vs. extrinsic goals:	Focus on content	Focus on assessment
Classroom atmosphere:	Relaxed atmosphere	Pressure/tension
Rules and routines:	Presence	Lack
Contingent rewards:	Presence	Lack
Teacher praise and feedback:	Informational	Controlling

REFERENCES

- Amabile, T., DeJong, W., & Lepper, M. (1976). Effects of externally imposed deadlines on subsequent intrinsic motivation. *Journal of Personality and Social Psychology, 34*(1), 92-98.
- America Competes Act. H.R. 2272 of 2007, 110th Congress, 2007.
- Ashwill, M. (1999). *The educational system in German: Case study findings*. Washington: National Institute on Student Achievement, Curriculum, and Assessment.
- Bandura, A. (1999). Self-efficacy: Toward a unifying theory of behavioral change. In R. F. Baumeister (Ed.), *The self in social psychology. Key readings in social psychology* (pp. 285-298). Philadelphia: Psychology Press/Taylor & Francis.
- Baumert, J., Trautwein, U., & Arteilt, C. (2003). Schulumwelten. In Deutsches PISA Consortium (Hrsg). *PISA 2000. Ein differenzierter Blick auf die Länder der Bundesrepublik Deutschland*. Oplanden: Leske & Budrich.
- Baumrind, D. (1968). Effects of authoritative parental control on child behavior. *Child Development, 37*, 887-907.
- Benware, C., & Deci, E. (1984). Quality of learning with an active versus passive motivational set. *American Educational Research Journal, 21*, 755-766.

- Boggiano, A., Flink, C., Shields, A., Seelbach, A., & Barrett, M. (1993). Use of techniques promoting students' self-determination: Effects on students' analytic problem-solving skills. *Motivation and Emotion, 17*(4), 319-336.
- Burgess, M., Enzle, M., & Schmaltz, R. (2004). Defeating the potentially deleterious effects of externally imposed deadlines: Practitioners' rules-of-thumb. *Personality and Social Psychology Bulletin, 30*, 868-877.
- Burka, J., & Yuen, L. (1982). Mind games procrastinators play. *Psychology Today, 32-34*.
- Caillois, R. (1961). *Man play and games* (M. Barash, Trans.). Urbana, Illinois: University of Illinois Press. From (1958) *Les jeux et les homes*, pp. 14-33. Paris: Librairie Gallimard.
- Cameron, J. (2001). Negative effects of reward on intrinsic motivation—A limited phenomenon: Comment on Deci, Koestner, and Ryan (2001). *Review of Educational Ressearch, 71*(1), 29-42.
- Cameron, J., Pierce, W. (1994). Reinforcement, reward, and intrinsic motivation: A Meta-analysis. *Review of Educational Research, 64*(3), 363-423.
- Campbell, D. (1976). Assessing the impact of planned social change. *Occasional Paper Series, Paper #8*. The Public Affairs Center, Dartmouth College.
- Chirkov, V. (2009). A cross-cultural analysis of autonomy in education: A self-determination theory perspective. *Theory and Research in Education, 7*(2), 253-262.

- Chirkov, V., & Ryan, R. (2001). Parent and teacher autonomy-support in Russian and U.S. adolescents: Common effects on well-being and academic motivation. *Journal of Cross-cultural Psychology*, 32(5), 618-35.
- Cohen, A., & Kisker, C. (2010). *The shaping of American higher education: Emergence and growth of the contemporary system*. San Francisco: Jossey-Bass.
- Covington, M. (1992). *Making the grade: A self-worth perspective on motivation and school reform*. Cambridge: Press Syndicate of the University of Cambridge.
- Covington, M. (2009). Self-worth theory: Retrospection and prospects. In K. Wentzel & A. Wigfield (Eds.), *Handbook of Motivation at School* (pp. 141-170). New York: Routledge.
- Creswell, J. (1994). *Research design: Qualitative & quantitative approaches*. Thousand Oaks, CA: Sage Publications.
- Creswell, J. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage Publications.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Thousand Oaks, CA: Sage Publications.
- Csikszentmihaly, M. (1975). *Beyond boredom and anxiety: The experience of play in work and games*. San Francisco: Jossey-Bass.

- Csikszentmihaly, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper & Row.
- Csikszentmihaly, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. New York: HarperCollins.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York: HarperCollins Publishers, Inc.
- Csikszentmihaly, M., Abuhamdeh, S., & Nakamura, N. (2005). Flow. In A. Elliot & C. Dweck (Eds.), *Handbook of competence and motivation* (pp. 598-608). New York: The Guilford Press.
- Csikszentmihaly, M., & LeFevre, J. (1989). Optimal experience in work and leisure. *Journal of Personality Personality and Social Psychology*, 56(5), 815-822.
- Csikszentmihaly, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots of success and failure*. Cambridge: Press Syndicate of the University of Cambridge.
- Darwin, C. (1872). *The origins of species*. London: John Murray.
- DeCharms, R. (1968). *Personal causation: The internal affective determinants of behavior*. New York: Academic Press.
- DeCharms, R. (1976). *Enhancing motivation: Change in the classroom*. New York: Irvington.

- Deci, E. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*, 105-115.
- Deci, E. (1975). *Intrinsic motivation*. New York: Plenum Press.
- Deci, E., Betley, G., Kahle, J., Abrams, L., & Porac, J. (1981). When trying to win: Competition and intrinsic motivation. *Personality and Social Psychology Bulletin, 7*, 79-83.
- Deci, E., Koestner, R., & Ryan, R. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*(6), 627-668.
- Deci, E., & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E., & Ryan, R. (2000). When rewards compete with nature: The undermining of intrinsic motivation and self-regulation. In C. Sansone & J. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 14-48). San Diego: Academic Press.
- Deci, E., Spiegel, N., Ryan, R., Koestner, R., & Kauffman, M. (1982). Effects of performance standards on teaching styles: Behavior of controlling teachers. *Journal of Educational Psychology, 74*, 852-859.

- Deci, E., Vallerand, R., Pelletier, L., & Ryan, R. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, 26, 325-246.
- Denzin, N., & Lincoln, Y. (2003). *The landscape of qualitative research: Theories and issues*. Thousand Oaks, CA: Sage Publications.
- Dewey, J. (1900). *The school and society*. Chicago: University of Chicago Press.
- Dewey, J. (1913). *Interest and effort in education*. Cambridge: Houghton Mifflin Company.
- Dilthey, W. (1996). Hermeneutics and the study of history. In R. Makkreel & F. Rodi (Eds.), *Selected works, volume IV* (pp. 235-253). Princeton, NJ: Princeton University Press. (Original work published in 1900)
- Dornbusch, S., Ritter, P., Leiderman, H., Roberts, D., & Fraleigh, M. (1987). The relation of parenting style to adolescent school performance. *Child Development*, 58, 1244-1257.
- Druryan, A., & Sagan, C. (1992). *Shadows of forgotten ancestors: A search for who we are*. New York: Ballantine Books.
- Duckworth, A., Peterson, C., Matthews, M., & Kelly, D. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology* 92 (6), 1087-1101.
- Eichhoff, J. (1988). Kindergarten and its progeny in American English. *Monatshefte*, 80 (1), 82-83.

- Fine, R. (1956). Chess and chess masters. *Psychoanalysis*, 3, 7-77.
- Flink, C., Boggiano, A., & Barret, M. (1990). Controlling teaching strategies: Undermining children's self-determination and performance. *Journal of Personality and Social Psychology*, 59, 916-24.
- Freud, S. (1961a). *Beyond the pleasure principle* (J. Strachey Trans.). New York: Liveright Publishing Corporation. (Original work published 1920)
- Freud, S. (1961b). *Civilization and its discontents* (J. Strachey Trans.). New York: Norton. (Original work published 1930)
- Gadamer, H. (1975). *Truth and method* (J. Weinsheimer, Trans.). New York: Continuum.
- Garn, C., Matthews, M., & Jolly, J. (2010). Parental influences on the academic motivation of gifted students: A self-determination theory perspective. *Gifted Child Quarterly*, 54, 263-272.
- Geertz, C. (1973). *The interpretation of cultures: Selected essays* (pp. 3-30). New York: Basic.
- Gentile, D., Lynch, P., Linder, J., & Walsh, D. (2004). The effects of violent video game habits on adolescent aggressive attitudes and behaviors. *Journal of Adolescence*, 27, 5-22.
- Gentile, D., & Walsh, D. (2002). A normative study of family media habits. *Journal of Applied Developmental Psychology*, 23, 157-178.

- Glaesser, J. (2008). Just how flexible is the German selective secondary school system? A configurational analysis. *International Journal of Research & Method in Education*, 31(2), 193-209.
- Goldschmidt, D. (1992). Historical interaction between higher education in Germany and in the United States. In U. Teichler & H. Wasser (Eds), *German and American universities: Mutual influences past and present* (pp. 11-333). Kassel, Germany: Center for Research on Higher Education and Work, Comprehensive University of Kassel.
- Gottfried, A. E. (1985). Academic intrinsic motivation in elementary and junior high school students. *Journal of Educational Psychology*, 77, 631-635.
- Gottfried, A.E., & Gottfried, A.W. (1996). A longitudinal study of academic intrinsic motivation in intellectually gifted children: Childhood through early adolescence. *Gifted Child Quarterly*, 40, 179-183.
- Gottfried, A.W., & Gottfried, A.E. (2006). The Fullerton longitudinal study: A long-term investigation of intellectual and motivational giftedness. *Journal for the Education of the Gifted*, 29(4), 430-450.
- Greitemeyer, T., & Osswald, S. (2010). Effects of prosocial video games on prosocial behavior. *Journal of Personality and Social Psychology*, 98(2), 211-221.
- Grolnick, W. (2009). The role of parents in facilitating autonomous self-regulation for education. *Theory and Research in Education*, 7, 164-173.

- Grolnick, W., Deci, E., & Ryan, R. (1997). Between intrinsic and extrinsic motivation: Examination of reasons for academic study based on the theory of internalization. *Japanese Psychological Research, 39*, 98-108.
- Grolnick, W., & Ryan, R. (1987). Autonomy in children's learning: An experimental and individual difference investigation. *Journal of Personality and Social Psychology, 52*, 890-898.
- Grolnick, W., Ryan, R., & Deci, E. (1991). The inner resources for school performance: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology, 53*, 508-517.
- Halachmi, A., & Holtzer, M. (1987). Merit pay, performance targeting, and productivity. *Review of Public Personnel Administration, 7*, 80-91.
- Hantrais, L. (2007). Contextualization in cross-national comparative research. In L. Hantrais & S. Mangen (Eds.), *Cross-National Research Methodology & Practice* (pp. 3-18). London: Routledge.
- Harlow, H., Harlow, M., & Meyer, D. (1950). Learning motivated by a manipulation drive. *Journal of Experimental Psychology, 40*, 228-234.
- Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology, 17*, 300-312.
- Harter, S. (1982). The perceived competence scale for children. *Child Development, 53*(1), 87-97.

- Hartman, A. (2008). *Education and the cold war: The battle for the American school*. New York: Palgrave MacMillan.
- Hartmann, H. (1958). *Ego psychology and the problem of adaptation*. New York: International Universities Press.
- Hedges, L., & Olkin, I. (1985). *Statistical methods for meta-analysis*. New York: Academic Press.
- Heidegger, M. (1996). *Being and time* (J. Stambaugh, Trans.). Albany: State University of New York Press. (Original work published 1927)
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Hektner, J., Schmidt, J., & Csikszentmihaly, M. (2007). *Experience sampling method: Measuring the quality of everyday life*. Thousand Oaks, CA: Sage Publications.
- Hennessey, B. (2000). Rewards and creativity. In C. Sansone & J. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 57-78). San Francisco: Academic Press.
- Holt, J. (1964). *How children fail*. New York: Pitman Publishing Corp.
- Huberman, A., & Miles, M. (2002). *The qualitative researcher's companion*. Thousand Oaks, CA: Sage Publications.
- Hull, C. L. (1943). *Principles of behavior*. New York: Appleton-Century-Crofts.

- Husserl, E. (1931). *Ideas: General introduction to pure phenomenology* (W. Boyce Gibson, Trans.). London: George Allen & Unwin. (Original work published 1913)
- Husserl, E. (2001). *The shorter logical investigations* (J. Findlay, Trans.). London: Routledge. (Original work published 1900)
- Jackson, S. A. (1995). Factors influencing the occurrence of flow states in elite athletes. *Journal of Applied Sport Psychology, 7*, 138-166.
- Jackson, S, Ford, S., Kimiecik, J., & Marsh, H. (1998). Psychological correlates of flow in sport. *Journal of Sport and Exercise Psychology, 4*, 358-378.
- Jackson, S., & Marsh, H. (1996). Development and validation of a scale to measure optimal experience: The flow state scale. *Journal of Sport and Exercise Psychology, 18*(1), 17-35.
- Jürges, H., Schneider, K., & Büchel, F. (2005). The effect of central exit examinations on student achievement: Quasi-experimental evidence from TIMSS Germany. *Journal of the European Economic Association, 3*(5), 1134-1155.
- Kant, I. (2005). *Groundwork of the Metaphysic of Morals* (T. Abbott, Trans.). Ontario: Broadview Press. (Original work published 1785)
- Kiili, K. (2004). Digital game-based learning: Towards an experiential gaming model. *Internet and Higher Education, 8*, 13-24.

- Kilpatrick, W. (1951). *Philosophy of education*. New York: Macmillan.
- Kim, Y., Deci, E., & Zuckerman, M. (2002). The development of the self-regulation of withholding negative emotions questionnaire. *Educational and Psychological Measurement, 62*(2), 316-336.
- Kohn, A. (1993). *Punished by rewards*. New York: Houghton Mifflin Company.
- Kohn, A. (2000). Burnt at the High Stakes. *Journal of Teacher Education, 51*, 315-327.
- Kohn, M. (1987). Cross-national research as an analytic strategy. *American Sociological Review, 52*, 713-731.
- Larson, R., & Csikszentmihalyi, M. (1983). The experience sampling method. *New Directions for Methodology of Social and Behavioral Science, 15*, 41-56.
- Lepper, M., & Greene, D. (1975). Turning play into work: Effects of adult surveillance and extrinsic rewards on children's intrinsic motivation. *Journal of Personality and Social Psychology, 31*, 479-486.
- Lepper, M., Green, D., & Nisbett, R. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the "overjustification" hypothesis. *Journal of Personality and Social Psychology, 28*(1), 129-137.
- Lepper, M., Iyengar, S., & Corpus, J. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology, 97*(2), 184-196.

- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage Publications.
- Madaus, G., Russell, M., & Higgins, J. (2009). *The paradoxes of high stakes testing: How they affect students, their parents, teachers, principals, schools, and society*. Charlotte, NC: Information Age Publishing.
- Marshall, C., & Rossman, G. (1999). *Designing qualitative research*. Thousand Oaks, CA: Sage Publications.
- Marx, K. (1961). *Capital* (S. Moore & E. Aveling, Trans.). London: Lawrence and Wishart. (Original work published 1867)
- Maslow, A. (1943). A theory of human motivation. *Psychological Review*, 50, 370-396.
- McAdams, R. (1993). *Lessons from abroad: How other countries educate their children*. Lancaster, PA: Technomic.
- McAuley, E., Duncan, T., & Tammen, V. (1987). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: A confirmatory factor analysis. *Research Quarterly for Exercise and Sport*, 60, 48-58.
- McClelland, D. (1951). *Personality*. New York: W. Sloane Associates.
- McGraw, K. (1978). *The detrimental effects of reward on performance: A literature review and a prediction model the hidden costs of reward*. Hillsdale, NJ: Lawrence Erlbaum Associates.

- McNeil, L. (1986). *Contradictions of control: School structure and school knowledge*. London: Routledge/Kegan Paul.
- Mill, J. (1867). *Utilitarianism*. London: Longmans, Green, Reader and Dyer.
- Milyavskaya, M., Gingras, I., Mageau, G., Koestner, R., Gagnon, H., Fang, J., & Boiche, J. (2009). Balance across contexts: Importance of balanced need satisfaction across various life domains. *Personality and Social Psychology Bulletin*, 200(35),1031-1045.
- Montessori, M. (1912). *The Montessori method*. Cambridge: Robert Bentley, Inc.
- Moustakes, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage Publications.
- National Commission on Excellence in Education (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: U.S. Government Printing Office.
- Newby, T., & Alter, P. (1989). Task motivation: Learner selection of intrinsic versus extrinsic orientations. *Educational Technology Research and Development*, 37, 77-89.
- Nietzsche, F. (1885). *Also sprach Zarathustra*. In *Friedrich Nietzsche das Hauptwerk III*. München: Nymphenburger Verlag.
- Nietzsche, F. (1961). *Thus spoke Zarathustra* (R. Hollingdale. Trans.). Middlesex: Penguin. (Original work published 1885)

- Nietzsche, F. (1974). *The gay science*. (W. Kaufmann, Trans.). New York: Random House. (Original work published 1886)
- Nietzsche, F. (1979). *Ecce homo: How one becomes what one is* (R. Hollingdale, Trans.). New York: Penguin Books. (Original work completed in 1888 and published posthumously)
- OECD. (2001). *Knowledge and skills for life: First results from PISA 2000*. Paris: Author.
- OECD. (2007). *PISA 2006. Science competencies for tomorrow's world* (Vol. 1). Paris: Author.
- OECD. (2010). *Education at a glance: Education indicators*. Paris: Author.
- O'Leary, K., & Drabman, R. (1971). Token reinforcement programs in the classroom: A review. *Psychological Bulletin* 75(6), 379-398.
- Pajares, F. (2008). Motivational role of self-efficacy beliefs in self-regulated learning. In D. Schunk & B. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (pp. 111-139). New York: Lawrence Erlbaum Associates.
- Patton, M. (2002). *Qualitative research & evaluation methods*. Thousand Oaks, CA: Sage Publications.
- Pelletier, L., & Sharp, E. (2009). Administrative pressures and teachers' interpersonal behavior in the classroom. *Theory and Research in Education*, 7, 174-183.

- Polkinghorne, D. (1989). Phenomenological research methods. In R. Valle & S. Halling (Eds.), *Existential-phenomenological perspectives in psychology* (pp. 41-60). New York: Plenum Press.
- Popham, W. (2001). *The truth about testing: An educator's call to action*. Alexandria: Association for Supervision and Curriculum Development.
- Postman, N. (1979). *Teaching as a conserving activity*. New York: Delacorte Press.
- Przybylski, A., Weinstein, N., Murayama, K., Lynch, M., & Ryan, R. (2012). The ideal self at play: The appeal of video games that let you be all you can be. *Psychological Science, 23*, 69-76.
- Reeve, J. (1998). Autonomy support as an interpersonal motivation style: Is it teachable? *Contemporary Educational Psychology, 23*, 312-330.
- Reeve, J. (2006). Teachers as facilitators: What autonomy-supportive teachers do and why their students benefit. *The Elementary School Journal, 106*(3), 225-236.
- Reeve, j., Halusic, M. (2009). How k-12 teachers can put self-determination theory principles into practice. *Theory and Research in Education, 7*, 145-154.
- Reeve, J., Jang, H., Carrell, D., Barch, J., & Jeon, S. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion, 28*, 147-169.

- Rigby, C. & Przybylski, A. (2009). Virtual worlds and the learner hero: How today's video games can inform tomorrow's digital learning environments. *Theory and Research in Education*, 7, 214-223.
- Rummel, A., & Reinberg, R. (1976). Cognitive evaluation theory: A meta-analytic review of the literature. *Social Behavior and Personality*, 16, 147-164.
- Ryan, R. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology*, 43(3), 450-461.
- Ryan, R., Connell, J., & Deci, E. (1985). A motivational analysis of self-determination and self-regulation in education. In C. Ames & R. Ames (Eds.), *Research on motivation in education: The classroom milieu* (pp. 13-51). New York: Academic Press.
- Ryan, R., & Niemiec, C. (2009). Self-determination theory in schools of education: Can an empirically supported framework also be critical and liberating? *Theory and Research in Education*, 7, 263-272.
- Ryan, R., Patrick, H., Deci, E., & Williams, G. (2008). Facilitating health behaviour change and its maintenance: Interventions based on self-determination theory. *The European Health Psychologist*, 10, 2-5.

- Ryan, R., & Weinstein, N. (2009). Undermining quality teaching and learning: A self-determination theory perspective on high-stakes testing. *Theory and Research in Education, 7*, 224-233.
- Sartre, J. (1956). *Being and nothingness: A phenomenological essay on ontology* (H. Barnes, Trans.). New York: Washington Square Press. (Original work published 1943)
- Schnabel, K., Alfeld, C., Eccles, J., Köller, O., & Baumert, J. (2002). Parental influence on students' educational choices in the United States and Germany: Different ramifications—same effect? *Journal of Vocational Behavior, 60*(2), 178–198.
- Schopenhauer, A. (2008). *The world as will and representation* (R. Aquila, Trans.). New York: Longman. (Original work published 1818)
- Senecal, C., Koestner, R., & Vallerand, R. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology, 135*(5), 607-619.
- Shakespeare, W. (1974). *The tempest*. In G. Evans et al. (Eds.), *The Riverside Shakespeare* (p. 1621). Boston: Houghton Mifflin.
- Shernoff, D., Csikszentmihaly, M., Schneider, B., & Schernoff, E. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158-176.
- Silberman, C. (1970). *Crisis in the classroom*. New York: Random House.

- Skinner, B.F. (1953). *Science and human behavior*. New York: The MacMillan Company.
- Skinner, B.F. (1974). *About behaviorism*. New York: Vintage.
- Smith, A. (1937). *An inquiry into the nature and causes of the wealth of nations*. New York: Modern Library. (Original work published 1776)
- Soenens, B., & Vansteenkiste, M. (2005). Antecedents and outcomes of self-determination in three life domains: The role of parents' and teachers' autonomy support. *Journal of Youth and Adolescence, 34*, 589-604.
- Solomon, L., & Rothblum, E. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology, 31*, 503-509.
- Stein, G., Kimiecik, J., Daniels, J., & Jackson, S. (1995). Psychological antecedents of flow in recreational sport. *Personality and Social Psychology Bulletin, 21*(2), 125-135.
- Steinberg, L., Lamborn, S., Darling, N., Mounts, N., & Dornbusch, S. (1994). Over-time changes in adjustment and competence among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development, 65*, 754-770.
- Tang, S., & Hall, V. (1995). The overjustification effect: A meta-analysis. *Applied Cognitive Psychology, 9*, 365-404.

- Vallerand, R., Blais, M., Briere, N., & Pelletier, L. (1989). Construction et validation de l'échelle de motivation en education. *Canadian Journal of Behavioral Sciences*, 21, 323-349.
- Vallerand, R., Gauvin, L., & Halliwell, W. (1986). Negative effects of competition on children's intrinsic motivation. *Journal of Social Psychology*, 126, 649-657.
- Vallerand, R., Pelletier, L., Blais, M., Brière, N., Senécal, C., & Vallières, E. (1993). On the assessment of intrinsic, extrinsic and amotivation in education: Evidence on the concurrent and construct validity of the academic motivation scale. *Educational and Psychological Measurement*, 53, 159-172.
- Van Ackeren, I., Block, R., Klein, E., & Kühn, S. (2012). The impact of statewide exit exams: A descriptive case study of three German states with differing low stakes exam regimes. *Education Policy Analysis Archives*, 20(8), 1-19.
- Van Manen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. New York: State University of New York Press.
- Wheatley, M. (2006). *Leadership and the new science: Discovering order in a chaotic world*. San Francisco: Berrett-Koehler Publishers, Inc.

- White, R. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297-333.
- Whitehead, A. (1929). *The aims of education and other essays*. New York: Macmillan.
- Wiersma, U. (1992). The effects of extrinsic rewards in intrinsic motivation: A meta-analysis. *Journal of Occupational and Organizational Psychology*, 65, 101-114.
- Woodward, E., & Gridina, N. (2000). *Media in the home in 2000: The fifth annual survey of parents and children*. Philadelphia: Annenberg Public Policy Center, University of Pennsylvania.

BIOGRAPHICAL INFORMATION

Prior to completing a Doctor of Philosophy in Educational Leadership and Policy Studies at the University of Texas at Arlington, Steven Bourgeois completed an Master of Arts in German, a BA in German, and a BA in Music—all from the University of Oregon. His research interests include student motivation, international education, educational history, and educational philosophy. He has worked toward educational reform during his 24 years as a secondary teacher, and most recently in his capacity as Instructional Coordinator and German/Music teacher at a STEM (Science, Technology, Engineering, and Math) academy in North Texas. He plans to embark on a career in higher education as a professor of Educational Leadership.