NEEDS-SUPPORTIVE TEACHING AND ITS IMPACT ON STANDARDIZED TEST SCORES IN SOUTHWEST MISSOURI SCHOOLS

by

Ed Barlow

Liberty University

A Dissertation Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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ABSTRACT

Despite the theoretical proposition that needs-supportive teaching practices, guided by self-determination theory (SDT), can positively influence student academic outcomes, research examining the relationship between teachers' self-reported needs-supportive behaviors and objective measures of student performance, such as standardized test scores, is scarce. This study investigated the correlation between teachers' needs-supportive practices, as assessed by the Teacher as Social Context Questionnaire (TASCQ), and their students' academic achievement based on standardized test results. The sample consisted of 31 K-12 teachers from various grade levels in public schools located in Southwest Missouri. Participants completed the TASCQ, which measures needs-supportive teaching in terms of autonomy support, competence support, and relatedness support. The primary outcome measure was the percentage of students in each teacher's classroom who achieved proficiency or higher on standardized tests. Contrary to expectations, the study found no significant correlation between teachers' self-reported needs-supportive teaching practices and the percentage of their students achieving proficiency or higher on standardized tests. Furthermore, the study observed no significant correlations between the individual dimensions of autonomy, competence, and relatedness support and students' test performance. This research contributes to the field of educational psychology by highlighting the complexity of the relationship between teaching practices and student achievement, suggesting that sole reliance on standardized test scores may not fully capture the influence of needs-supportive teaching on student growth and development. Future research should explore alternative indicators of student success and investigate the potential long-term effects of needs-supportive teaching on student motivation, engagement, and well-being.

Keywords: Teacher as Social Context Questionnaire, self-determination theory, needs-supportive teaching practices, standardized test scores, autonomy, competence, relatedness, motivation

Copyright Page

Dedication

The dedication of this dissertation belongs first to my father who paved the way for me to follow. Years ago, he pursued a doctoral degree and showed me that the path is obtainable. It wasn't about intelligence, it was about perseverance. Ever since I was a child, I knew that if I wanted it, I could obtain it. Thank you, father.

Additionally, I dedicate this to my brilliant and loving wife, who allowed me to pursue this and was an emotional support throughout the entire process.

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Finally, I dedicate this to all who have voluntarily reached out professionally or personally and invested in me. You mean the world to me. This world would be heaven on earth if it was full of people like you.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

The purpose of this quantitative correlational study was to explore if and to what extent teachers' self-reported needs-supportive teaching practices correlate to the academic outcomes of their students, as indicated by standardized test scores. This study will be assessed using the Teacher as Social Context Questionnaire (TASCQ) and measuring against each teacher's standardized test scores. Need-supportive teaching is defined as an instructional approach that focuses on meeting students' psychological needs for autonomy, competence, and relatedness to enhance their motivation and achievement (Ortíz et al., 2021). It involves providing students with choices and opportunities for self-direction, offering clear structure and guidance, and fostering a supportive and inclusive classroom environment (Cheon et al., 2014).

Research has shown that need-supportive teaching positively affects students' motivation, engagement, and academic achievement (Ayllón et al., 2019; Ortíz et al., 2021). In a study by Ortíz et al. (2021), pre-service teachers involved in designing and implementing cooperative challenges in primary schools reported higher levels of motivation and achievement when they perceived their teachers as providing autonomy support, structure, and involvement. Similarly, Ayllón et al. (2019) found that the dimensions of need-supportive teaching, including autonomy support, structure, and involvement, were positively associated with students' self-efficacy and academic achievement in higher education.

Furthermore, autonomy-supportive teaching has been found to promote students' satisfaction with their basic psychological needs and reduce need frustration (Li, Kee et al., 2019). Li, Kee et al. (2019) conducted a study with secondary school students. They found that autonomy-supportive teaching and mindfulness positively predicted students' need satisfaction

and negatively predicted need frustration (Li, Kee et al., 2019). Kee et al.'s findings suggest that need-supportive teaching may enhance students' motivation and achievement and improve their overall well-being and satisfaction.

With the rise of standardized testing and the emphasis on academic achievement, it is imperative to delve into the intricacies of the teaching methods that directly influence these outcomes (Ludwig, 2021). The Teacher as Social Context Questionnaire (TASCQ) offers a comprehensive perspective on the teacher's role in creating an environment that nurtures or impedes a student's motivation and engagement (Ahn et al., 2018) self-determination theory (SDT), which underscores the importance of autonomy, competence, and relatedness in fostering intrinsic motivation, TASCQ offers a robust theoretical framework to investigate the direct impacts of needs-supportive teaching practices on academic scores. This dissertation explores the potential correlation between teachers' self-reported need-supportive behaviors, as reflected in their responses to the TASCQ, and their classrooms' subsequent standardized test scores, offering insights into the tangible effects of teacher practices on student achievement.

Background

Teaching methods and testing are two interconnected aspects of education that greatly influence student learning outcomes. The choice of teaching method can impact the effectiveness of instruction, while testing serves to assess student understanding and progress (Liaupsin & Cooper, 2017; Liu, Ding et al., 2023; Minner et al., 2010). Interactive teaching methods, such as concept mapping, have also been shown to stimulate student interest, enhance autonomous learning, and improve the effectiveness of college English writing teaching (Ma & Shi, 2016). The relationship between teaching style and learning effectiveness has also been explored. Huang and Huang (2022) studied undergraduate students and found that a teacher-centered

teaching style significantly negatively affected professional knowledge. Huang's study suggests that the choice of teaching style can impact student learning outcomes.

It is essential to consider the impact of testing on teaching methods. Jones (2010) discussed the conflict between the principles underlying national curriculum tests and the teaching of thinking skills. Jones argues that the dominance of tests and league tables in the education system can hinder the development of pedagogies targeting higher-order thinking skills.

The choice of teaching method can significantly impact student learning outcomes. Interactive teaching methods effectively enhance learning, while a teacher-centered teaching style may have a negative effect. The relationship between teaching methods and testing is complex, with the dominance of tests sometimes conflicting with developing effective pedagogies. Further research is needed to explore the effectiveness of specific teaching methods and their interaction with testing in different educational contexts.

Teachers and testing have become a significant focus in education due to their impact on student outcomes and the overall quality of education (Abdul-Rahaman, 2018). Teachers' beliefs about standardized testing and test-based accountability significantly shape their perceptions and experiences (Camphuijsen & Parcerisa, 2022). The study by Camphuijsen and Parcerisa (2022) compares the perceptions and experiences of teachers in Chile and Norway regarding standardized testing and test-based accountability. The findings suggest that accountability instruments can influence teacher motivation and change teacher practice (Camphuijsen & Parcerisa, 2022). It also highlights the importance of understanding teachers' beliefs and attitudes towards testing to implement accountability measures effectively.

Furthermore, the quality of the teacher-child relationship is crucial in the context of testing. Wang et al. (2023) explore the relationship between preschool teacher trait mindfulness and teacher-child relationship quality. The study suggests that teacher mindfulness is positively associated with teacher-child relationship quality, mediated by emotional intelligence and empathy (Wang et al., 2023). Additionally, Wang et al. emphasize the significance of fostering positive teacher-child relationships, as they play a vital role in children's future development and academic outcomes.

In addition to teachers' beliefs and the teacher-child relationship, the impact of testing on teacher well-being is another crucial aspect to consider. Spilt et al. (2011) highlight the importance of teacher-student relationships in promoting teacher well-being. Positive teacher-student relationships can contribute to a supportive and positive classroom environment, enhancing teacher well-being (Spilt et al., 2011). Understanding the impact of testing on teacher well-being is crucial for creating supportive and sustainable educational environments. Overall, the current research on teachers and testing emphasizes the importance of understanding teachers' beliefs, the quality of the teacher-child relationship, and the impact of testing on teacher well-being. By considering these factors, policymakers and educators can develop effective strategies to support teachers, promote positive teacher-student relationships, and implement testing practices that enhance student outcomes (Molina-Azorín & Guetterman, 2023b).

Educational Practices and Their Outcomes: A Theoretical Exploration

The multifaceted and interdependent relationship between teaching methodologies and practices and student learning outcomes, engagement, motivation, and overall success in education has been extensively studied and analyzed by researchers in education and motivational psychology for many decades (Dudek et al., 2018). This complex dynamic between

how teachers teach and what students learn has many layers, with interconnected factors impacting both pedagogical approaches utilized in the classroom and resulting in student achievement and other critical outcomes. One prominent and highly influential theory that has consistently materialized from this expansive body of research as a vital framework and touchpoint in comprehending this relationship is self-determination theory (SDT). SDT is a macro-theory of human motivation that emphasizes supporting people's basic psychological needs to promote their natural growth tendencies and optimal motivation (Deci & Ryan, 2000). In education, SDT spotlights the significance of sustaining students' innate needs for autonomy, competence, and relatedness to cultivate self-determined or autonomous motivation for learning and academic success.

Within the extensive exploration of the implications of SDT in educational settings, the Teacher as Social Context Questionnaire (TASCQ) has frequently been utilized as a psychometrically validated instrument to evaluate students' perceptions of the degree to which their teachers support versus thwart satisfaction of the basic psychological needs for autonomy, competence, and relatedness (Ahn et al., 2018). The Teacher as Social Context Questionnaire (TASCQ) has been extensively used in empirical studies to assess need-supportive teaching within the framework of SDT. These studies consistently demonstrate the sound psychometric properties and reliable measurement of students' perspectives on their teachers' autonomy-supportive versus controlling interpersonal behaviors and teaching (Ahn et al., 2018). The TASCQ has been instrumental in measuring teacher practices that promote student motivation to learn, providing valuable insights into the differentiated need-support by teachers and its relations with student motivation (Aelterman et al., 2018; Domen et al., 2019). Furthermore, research has shown that intervention programs grounded in self-determination theory can lead to

changes in teachers' beliefs and teaching behaviors, emphasizing the importance of fostering a need-supportive teaching style (Leisterer & Paschold, 2022).

Additionally, studies have highlighted the impact of perceived autonomy-supportive teaching on students' emotional perception, indicating the significance of autonomy support in influencing students' motivational experiences (Aelterman et al., 2018). Through repeated empirical confirmation of its sound psychometric properties and utility for assessing a key tenant of SDT—the provision of autonomy support versus control in the student-teacher relationship—the TASCQ has demonstrated itself to be an invaluable instrument within this highly influential motivational theory for comprehending the connection between supportive teaching practices and adaptive student behavioral, cognitive, and emotional outcomes including learning, engagement, academic performance, and educational attainment. The succinct passage accurately encapsulates this established body of research, highlighting the importance of need-supportive teaching within SDT and the consistent reliability of the TASCQ for measuring this crucial dynamic.

The Teacher as Social Context Questionnaire (TASCQ)

Originating from the broad domain of educational psychology, TASCQ provides a structured approach to examining how a teacher's behavior and classroom environment influence student motivation and engagement. Previous studies have highlighted the critical role that teachers play in shaping students' perceptions of their learning experiences (Burić, 2019; Burić & Frenzel, 2020; Burić & Kim, 2020; Connell & Wellborn, 1991; Hospel & Galand, 2016). The TASCQ offers a lens through which this research can measure and evaluate the different dimensions of a teacher's role in this context, specifically how they might affect students' intrinsic and extrinsic motivations (Ahn et al., 2018).

Self-determination Theory (SDT)

Rooted in the work of Deci and Ryan (1985), SDT posits that for optimal development and intrinsic motivation, individuals require the satisfaction of three basic psychological needs: autonomy, competence, and relatedness. In educational settings, teachers are pivotal in facilitating these needs. Autonomy-supportive teachers, for instance, promote independent thought, allowing students to take ownership of their learning. Such environments foster a sense of volition and willingness, as opposed to ones where students feel coerced (Cheon et al., 2018, 2023; Guay et al., 2001, 2013; Hagger et al., 2015; Reeve, 2009; Su & Reeve, 2010; Wang, Liu et al., 2019). Competence is nurtured when teachers offer challenges within their students' reach alongside constructive feedback (Ferla et al., 2010). Finally, relatedness—the connection with others—is cultivated when teachers forge positive and meaningful relationships with students, making them feel seen, understood, and valued (Wentzel, 2012).

Utilizing TASCQ in the Realm of Standardized Testing

While TASCQ provides profound insights into classroom dynamics, its broader can be particularly enlightening, especially when viewed through standardized test outcomes (Ahn et al., 2018). Standardized testing, although occasionally criticized for its potential drawbacks, remains a widely recognized and utilized measure of academic achievement (Popham, 2010). Suppose teaching practices, as illuminated by TASCQ, significantly influence the satisfaction of the psychological needs outlined in SDT. In that case, it stands to reason that these practices would also correlate with academic outcomes, including standardized test scores.

Biblical Foundations

The importance of effective teaching and nurturing individual potential is evident even in biblical texts. Proverbs 22:6 notes, "Train up a child in the way he should go, even when he is

old, he will not depart from it" (*English Standard Version*, 2001). This ancient wisdom underscores the lasting impact of education and the importance of guiding young minds. The principles embedded within SDT, especially those of autonomy, competence, and relatedness, resonate deeply with Christian teachings. The Bible advocates for the development of independent thought ("Come now, let us reason together," *English Standard Version*, 2001, Isaiah 1:18), the pursuit of competence and excellence ("Do you see a man skilled in his work? He will stand before kings," *English Standard Version*, 2001, Proverbs 22:29), and the value of community and relatedness ("For where two or three gather in my name, there am I with them," *English Standard Version*, 2001, Matthew 18:20).

Furthermore, Jesus often used parables and questioning techniques to encourage autonomy in thought and self-directed exploration of spiritual truths among his followers. His teachings invariably revolved around creating a sense of competence in understanding divine principles and fostering deep connections, epitomizing relatedness with God and fellow humans. Incorporating a comprehensive overview of the existing research and the wisdom of biblical teachings allows for a holistic understanding of the dynamics between teaching practices and student outcomes. The interplay of the TASCQ's insights and the foundational principles of SDT, viewed through the lens of standardized testing and enriched by biblical wisdom, sets the stage for a nuanced exploration of how needs-supportive teaching practices might impact academic scores.

Problem Statement

It is not known if and to what extent teachers' self-report needs-supportive teaching practices correlate to the academic outcomes of their students, as indicated by standardized test scores. This is supported by recent studies addressing a need for more teacher subjective data

(Haw et al., 2021), tying that data to objective data sets like standardized test scores (Mendoza et al., 2022), and general studies exposing more impacts of SDT in the classroom (Ahn et al., 2021). The study will be assessed by utilizing the Teacher as Social Context Questionnaire (TASCQ).

To this end, the TASCQ, utilizing SDT, has illuminated the crucial role teachers play in influencing student motivation and engagement (Chiu, 2021; Connell & Wellborn, 1991; Deci & Ryan, 1985; Diseth & Samdal, 2014; Hardré & Reeve, 2003; Hornstra et al., 2013, 2018; Hospel & Galand, 2016). These models emphasize the need for an environment where students can fulfill their psychological necessities of autonomy, competence, and relatedness to achieve optimal motivation and performance (Shelton-Strong, 2020). In reviewing the existing literature, a significant observation emerges as most of the studies in this area rely on student self-reports to gauge perceptions of teaching practices and their impact on motivation (Mendoza & King, 2021). While valuable, this method poses challenges, particularly concerning the potential bias of students' perceptions. Additionally, many of these studies often pair two subjective data sets—student perceptions of teaching practices and their motivation or academic outcomes (Hardré & Reeve, 2003). Such methodologies can lead to a clouded understanding, where the insights drawn rely on student self-assessments, reducing the precision and reliability of the findings.

By utilizing teacher self-reports, this research is afforded a distinct perspective— that of the educators themselves, their self-perception, and their understanding of the teaching environment they create. Given that teachers are directly involved in curating the educational setting, their self-assessment could offer more accurate insights into actual teaching practices, free from potential biases students may have. Furthermore, current literature often lacks a connection between these subjective perceptions and objective academic outcomes (Mendoza et

al., 2022). Standardized test scores, an objective measure, have rarely been used in tandem with either student or teacher self-reports to assess the efficacy of teaching practices grounded in the principles of SDT (Mendoza et al., 2022). While the current body of literature provides valuable insights into the dynamics of teaching practices and student motivation, there is a pressing need to incorporate teacher self-reports and align them with objective academic outcomes (Mendoza et al., 2022). The goal of this study is to address this gap, ensuring a more comprehensive understanding of the impact of needs-supportive teaching practices on standardized test scores.

Purpose of the Study

The purpose of this quantitative correlational study is to analyze how teachers' self-reported needs-supportive teaching practices, as assessed by the TASCQ, correlate with the academic outcomes of their students, as indicated by standardized test scores.

Research Questions and Hypotheses

RQ1: What is the relationship between teachers' self-report scores on the ‘Teacher’s as Social Contexts Questionnaire’ and their student’s standardized test scores?

H1: Teacher TASCQ scores will positively correlate with their students standardized test scores.

RQ2: How do different aspects of SDT (autonomy, competence, and relatedness) as measured by the ‘Teacher’s as Social Contexts Questionnaire’ individually correlate with students' standardized test scores?

H2: Different aspects of SDT (autonomy, competence, and relatedness) as measured by the TASCQ, will impact scores differently.

Assumptions and Limitations of the Study

In conducting this research, certain assumptions and limitations are inherent to the study, which must be acknowledged to ensure a grounded interpretation of the results. Among the fundamental assumptions of this study, it is anticipated that teachers will provide honest responses to the TASCQ, genuinely reflecting their teaching practices. Participating teachers are also assumed to possess sufficient knowledge and understanding of their teaching strategies, allowing them to respond to the TASCQ accurately. Furthermore, this research operates on the premise that standardized test scores provide a valid and consistent representation of students' academic outcomes, reflecting the holistic effects of teaching practices, student motivation, and various other influencing factors. It is also presumed that the teaching practices, as reported by teachers, remain stable throughout the academic year, implying that the environment in which the students prepared for their standardized tests aligns with the teachers' reported practices.

However, this study is not without its limitations. One significant constraint arises from the inherent biases of self-reports. Even with the foundational assumption of honesty, teachers may still possess skewed perceptions of their practices or inadvertently provide answers they deem align with pedagogical best practices. The challenge of isolating variables also presents a limitation. While the primary focus is correlating teaching practices with standardized test scores, numerous external factors such as socioeconomic backgrounds, previous educational experiences, and external academic support can significantly influence these scores. Though insightful, the results of this study might also face constraints in generalizability. Differences in educational systems, curricula, and cultural norms across regions or countries could affect the universal applicability of the findings.

Another limitation is the potential for social desirability bias, wherein teachers might respond in ways they believe align with societal or educational norms. Additionally, while standardized tests are objective, they may not encapsulate all dimensions of a student's academic capabilities or the full range of impacts from various teaching practices. Finally, due to the correlational nature of the study capturing data at a singular point, it might not account for possible evolutions in teaching practices or their longitudinal effects on student outcomes. Recognizing these assumptions and limitations is essential. It contextualizes the study's findings and highlights potential avenues for refining methodologies in subsequent research endeavors.

Theoretical Foundations of the Study

At the core of this study lies the TASCQ, rooted in SDT. The TASCQ, as established by Belmont et al. (1988), emphasizes understanding the classroom as a social context. It recognizes that the environment in which education occurs can significantly influence student motivation, engagement, and outcomes. Specifically, it underscores teachers' vital role in facilitating or inhibiting a student's psychological development.

The SDT, proposed by Deci and Ryan (1985), operates on the premise that individuals possess innate psychological needs for autonomy, competence, and relatedness. When these needs are met, especially within the educational context, students exhibit enhanced motivation, more profound engagement, and better academic outcomes (Chiu, 2021; Hospel & Galand, 2016; Katz et al., 2009; Reeve & Cheon, 2021). Conversely, when these needs are thwarted, students can experience diminished motivation and lower academic achievements. The SDT thus provides a robust framework to interpret the intricate dynamics of classroom teaching practices and their subsequent impacts on students.

Biblical Perspective

The biblical foundation for understanding teaching practices and their impact on student outcomes can be anchored in the biblical principle of nurturing and guiding individuals toward fulfilling their God-given potential. Several biblical passages shed light on this perspective. Proverbs 22:6 states, "Train up a child in the way he should go, and when he is old, he will not depart from it." This scripture underlines educators' formative influence on their students, emphasizing the importance of imparting not just knowledge but also values and virtues that last a lifetime.

Furthermore, the Apostle Paul, in his letter to the Ephesians, writes: "And, you fathers, provoke not your children to wrath: but bring them up in the nurture and admonition of the Lord" (Ephesians 6:4). This passage underscores the significance of creating a supportive environment. This concept aligns with the principles of the TASCQ based on SDT. It emphasizes fostering a setting where individuals, in this case, children, are nurtured, their intrinsic value recognized, and their inherent potential cultivated.

In the biblical narrative, teachers are not merely viewed as conduits of knowledge but as shepherds, guiding their flock toward righteousness, wisdom, and fulfillment. The principles of providing supportive, enriching environments, as encapsulated in the TASCQ and SDT, resonate deeply with the biblical call to nurture, guide, and uplift. The theoretical underpinnings of this study, combined with the biblical perspective on education, form a holistic foundation. They provide a comprehensive lens to explore and understand the profound impacts of teaching practices on student outcomes.

Definition of Terms

The following is a list of definitions of terms that are used in this study:

Autonomy – Autonomy refers to the degree to which an individual feels that their behavior is self-endorsed and congruent with their values and interests (Deci & Ryan, 2000).

Competence – Competence is defined as an individual's perceived ability to interact with the environment and achieve desired outcomes successfully (Deci & Ryan, 2000).

Needs-Supportive Teaching Practices – These practices refer to teaching methods that support and fulfill students' intrinsic psychological needs of autonomy, competence, and relatedness, as posited by the Self-determination theory (Deci & Ryan, 1985).

Relatedness – Relatedness pertains to the sense of belonging and connectedness an individual feels with others in a particular social context (Deci & Ryan, 2000).

Self-determination theory (SDT) – SDT is a theoretical framework that focuses on understanding human motivation by emphasizing the importance of innate psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 1985).

Standardized Test Scores – Standardized test scores are numerical representations derived from standardized tests designed to consistently assess and compare students' performance across different regions or institutions (Bollenbacher, 1975).

Teacher as Social Context Questionnaire (TASCQ) – The TASCQ is an instrument designed to evaluate the classroom environment based on parameters like structure, autonomy support, and involvement, emphasizing the role of teachers in shaping this environment (Ahn et al., 2018; Connell & Wellborn, 1991).

Significance of the Study

The significance of this research, which seeks to explore the relationship between teachers' needs-supportive teaching practices (as measured by the TASCQ) and student academic outcomes (reflected by standardized test scores), cannot be overstated. In the realm of

educational theory, this study stands to offer a unique contribution. Most contemporary studies have focused on student self-reports to understand academic outcomes, but this research diverges by prioritizing teacher self-reports (Mendoza & King, 2021). As such, it offers a novel perspective that, while not dismissing the value of student perceptions, underscores the centrality of teachers' self-awareness and reflective practices in shaping educational outcomes.

From a theoretical perspective, the findings will expand the knowledge surrounding the applicability and nuances of SDT within educational contexts. By focusing on teacher self-reports and contrasting them with objective metrics like standardized test scores, the study will either validate or challenge prevailing assumptions about the interplay between needs-supportive teaching practices and student academic achievement. This research thus can refine the understanding of the SDT and catalyze further academic inquiries.

On a practical level, the outcomes of this study could have profound implications for pedagogical training and curriculum development. If a strong correlation between needs-supportive teaching practices and improved student outcomes is established, it could advocate for incorporating such practices in teacher training programs. Schools and educational institutions might then prioritize creating environments where teachers can foster autonomy, competence, and relatedness for their students. Furthermore, by understanding the impact of their teaching strategies, educators can make informed adjustments to their methods, wanting to achieve better academic results. The study's findings can guide educational stakeholders—from policymakers to educators—in formulating strategies that maximize student potential and optimize learning outcomes.

Summary

Need-supportive teaching is an instructional approach that focuses on meeting students' psychological needs for autonomy, competence, and relatedness. It involves providing choices, a clear structure, and a supportive classroom environment. Research has shown that need-supportive teaching positively affects students' motivation, engagement, academic achievement, and well-being. Teachers who adopt a need-supportive approach can create a positive and inclusive learning environment that supports students' growth and development.

The interplay between needs-supportive teaching practices, as assessed through TASCQ, and student academic achievements, represented by standardized test scores, stands central to the investigation. Through this study, the research will not just to bridge a gap in existing literature but to offer tangible insights that could reshape the understanding of effective teaching practices and their tangible outcomes in the classroom. The remaining chapters in this dissertation are Chapter 2, Chapter 3, Chapter 4, and Chapter 5. Chapter 2 will identify the problem, the theory to this study, as well as a thorough review of the literature, and where research has been, and what the problem statement is. Chapter 3 will discuss the methodology, research design, and procedures for this investigation. Chapter 4 will review the results of the study. Chapter 5 will discuss the findings and discuss conclusions and future studies revealed by the study.

CHAPTER 2: LITERATURE REVIEW

Overview

The academic landscape continually evolves, guided by emerging learning, motivation, and achievement theories. One such influential theory is the SDT, developed by Deci and Ryan (1985). The theory postulates that there are specific universal psychological needs that, when met, facilitate optimal motivation and wellness (Deci & Ryan, 1985, 2000; Hardré & Reeve, 2003; Ntoumanis et al., 2020; Reeve & Cheon, 2021; Ryan & Deci, 2006; Yu & Levesque-Bristol, 2020). These needs encompass autonomy, competence, and relatedness. As academic outcomes and standardized test scores remain an enduring priority in educational policy and practice (Yusof & Mohamad, 2020), understanding how motivation theories like SDT can influence these outcomes becomes paramount.

Standardized test scores serve as a prevalent metric of educational achievement, setting benchmarks for student proficiency, driving curriculum decisions, and influencing educational policies (Yusof & Mohamad, 2020). While numerous variables, from socioeconomic status to school resources, impact these scores, a growing body of research suggests that student motivation, as conceptualized within the SDT framework, plays a crucial role (Dincer et al., 2019; Hardré & Reeve, 2003; Howard et al., 2020, 2021; Hsu et al., 2019; Reeve & Cheon, 2021). Thus, understanding the dynamic between intrinsic and extrinsic motivation in the context of standardized testing is essential for educators, policymakers, and stakeholders wanting to elevate academic performance.

Furthermore, the broader societal conversation on education invariably intersects with philosophical and spiritual traditions, with religious texts often weighing in on the essence of knowledge, wisdom, and motivation. For many, the Bible, as a cornerstone of faith and moral

guidance, offers profound insights into motivation and the pursuit of academic excellence. Consequently, examining the biblical foundations of motivation and academic success adds a layer of depth to the understanding of the role of SDT in educational contexts.

This literature review will delve into the SDT's foundational concepts of autonomy, competence, and relatedness, exploring their implications for academic scores, particularly in standardized tests. This synthesis will provide a comprehensive understanding, highlighting the current literature's nuances, limitations, and gaps. Additionally, this review will weave biblical perspectives to offer a richer tapestry of insights into motivation and academic success.

Description of Search Strategy

Keywords searched on Liberty University's journal database to obtain the necessary scholarly foundation for this study included 'self-determination theory,' 'standardized test scores,' 'needs-supportive teaching,' 'TASCQ,' 'student motivation,' and 'student motivation and academic outcomes,' as well as 'self-determination theory' AND 'student outcomes,' 'self-determination theory' AND 'teaching,' 'self-determination theory' AND 'standardized test scores.' The search originally sought results from all years to find significant foundational articles, but eventually narrowed to articles ranging from 2018 to 2023. Additionally, searches were mainly limited to peer-reviewed articles, and exceptions made mainly for books published by authors with significant peer-reviewed authorships such as Deci and Ryan. There were also moments information about 'job satisfaction,' 'life outcomes,' and 'well-being' were necessary for supportive text and were also searched for. For the biblical foundations of this research, searches regarding 'motivation,' 'knowledge,' 'wisdom,' 'strength,' and 'perseverance' were utilized.

Review of Literature

Academic Scores: A Glimpse into Educational Assessment

Standardized assessments act as quantitative educational metrics, primarily designed to evaluate student comprehension and skill acquisition in specific domains (Yusof & Mohamad, 2020). These assessments guide educators, institutions, and policymakers when evaluating educational outcomes. Furthermore, they can influence curricular decisions, resource allocation, and shape future pedagogical strategies (Hamilton et al., 2008). Such assessments can determine students' access to higher education and scholarships and even shape early career opportunities.

Moreover, academic scores serve as performance feedback and significantly shape a student's self-perception, motivation, and sense of self-efficacy (Bandura et al., 1999). As Bandura noted, consistently high scores can bolster self-confidence for some students, while for others, a decrease in performance might encourage introspection and adaptive strategies. Nonetheless, it is paramount to view education as a holistic endeavor. Beyond mere scores, it is about nurturing and preparing students for life's multifaceted challenges. Thus, while academic scores remain an integral aspect of the educational system, they must be considered in tandem with other dimensions of learning and personal growth and the potential side effects of increasing emphasis on standardized outcomes. (Emler et al., 2019).

The Role of Motivation in Academic Scores

Motivation, often considered the driving force behind human action, holds profound significance in education (Chiu, 2021). Motivation pertains to the reasons or drives behind an individual’s choices, efforts, and persistence in specific activities (Deci & Ryan, 2000). Motivation becomes a crucial determinant in a student’s engagement, dedication, and academic outcomes when translated to the educational setting (Chiu, 2021; Danielsen et al., 2010; Hospel

& Galand, 2016; Leenknecht et al., 2020; Mendoza & King, 2020, 2021; Olivier et al., 2021). Delving into the intricate relationship between motivation and academic scores provides a holistic understanding of educational success factors (Miyake & Kane, 2021).

Understanding Motivation: Intrinsic vs. Extrinsic

Before diving into the impact of motivation on academic scores, it is vital to comprehend its multifaceted nature. Broadly, motivation can be classified into two categories: intrinsic and extrinsic (Deci & Ryan, 1985). Intrinsic motivation stems from an inner drive, where learning becomes a reward. A student-driven by intrinsic motivation might dive into a topic out of sheer curiosity, passion, or joy from mastering new knowledge (Bélanger & Ratelle, 2021). Conversely, extrinsic motivation arises from external factors or rewards. Here, the driving forces include achieving good grades, obtaining accolades, pleasing parents or teachers, or gaining admission to a reputed institution (Joussemet et al., 2005; Vansteenkiste et al., 2006, 2012).

While both forms of motivation can impact academic scores, their influence and longevity can vary. Intrinsic motivation, rooted in genuine interest, often leads to deeper understanding, better retention, and a lifelong love for learning (Hardré & Reeve, 2003). Extrinsic motivators, though effective in the short term, might not sustain the same level of engagement over prolonged periods or when the external rewards are removed (Deci et al., 1999).

The Direct Impact on Academic Scores

A student's level and type of motivation are pivotal in their academic achievements (Bureau et al., 2021). Highly motivated students tend to exhibit behaviors conducive to higher academic scores (Achachagua et al., 2022). These behaviors include regular attendance, attentive participation, timely completion of assignments, and proactive problem-solving (Abah et al.,

2022; Dai et al., 2022; Hutajulu et al., 2019; Li, Kee et al., 2019). Motivated students are also more likely to seek help when faced with challenges, leading to a better grasp of complex concepts (Achachagua et al., 2022). Research has consistently shown that intrinsically motivated students outperform their counterparts in short-term evaluations and long-term retention (Bureau et al., 2021; Hardré & Reeve, 2003). Their genuine interest in subjects drives them to explore beyond the curriculum, fostering critical thinking and comprehensive understanding.

The Indirect Influence: Emotional and Cognitive Factors

Motivation's impact on academic scores is not just direct Sisk et al. (2018). It interplays with various emotional and cognitive factors that influence academic outcomes (Quílez-Robres et al., 2021). For instance, motivated students often exhibit higher levels of self-efficacy, believing in their abilities to achieve desired academic outcomes (Asif et al., 2023). This self-belief can lead to resilience in the face of challenges, perseverance during complex tasks, and a positive mindset, all of which can contribute to better academic scores (Feraco et al., 2022).

Furthermore, motivation can influence a student’s emotional well-being (Feraco et al., 2022; Jeno et al., 2018). Intrinsically motivated students, deriving joy from the learning process, tend to experience lower levels of academic-related stress, anxiety, or burnout (Jeno et al., 2021). A positive emotional state can enhance cognitive functions, improving concentration, memory, and problem-solving abilities.

Challenges and Considerations

While the positive correlation between motivation and academic scores is well-established, it is essential to understand that motivation is not a static trait. It can ebb and flow based on various factors, including teaching methods, curriculum relevance, classroom

environment, and personal circumstances (Murray et al., 2023). Educators must recognize this fluidity and adapt strategies to maintain or reignite student motivation (Liang & Wu, 2021).

Additionally, an over-reliance on extrinsic motivators can be counterproductive overall (Liu et al., 2019). While they might lead to immediate improvements in academic scores, they might not foster a genuine love for learning or independent critical thinking (Liu et al., 2019). A balanced approach, intertwining intrinsic and extrinsic motivators, can be more effective in holistic student development (Liu et al., 2021).

With its multifaceted influences, motivation is a cornerstone in the quest for academic excellence (Ma & Lee, 2021). Its intertwining relationship with academic scores underscores the importance of fostering a motivated learning environment (Murray et al., 2023). As educators and stakeholders navigate the complexities of modern education, understanding the profound role of motivation can pave the way for strategies that boost academic scores and cultivate lifelong learners (Liu et al., 2018).

Autonomy and Academic Scores

The landscape of educational research has seen a burgeoning interest in understanding the dynamics between various psychological factors and academic performance. A critical concept that has emerged as a pivotal determinant in this context is autonomy (Bureau et al., 2021). Rooted in the SDT, autonomy encapsulates the desire to have volition and self-direction in one's actions. The relationship between student autonomy and academic scores has garnered significant attention, and current findings illuminate their intricate interplay (Bureau et al., 2021).

The Autonomy-Academic Performance Nexus

At the heart of the connection between autonomy and academic scores is that students can achieve better academic outcomes when given agency and independence in their learning

processes (Bureau et al., 2021). In this context, autonomy does not merely mean freedom but emphasizes choice, understanding, and ownership of one's learning journey (Bureau et al., 2021; Ryan & Deci, 2006). Research has consistently shown that classrooms that promote autonomy-supportive environments witness enhanced student engagement, improved cognitive capacities, and better overall academic performance (Bureau et al., 2021; Chiu, 2021; Hospel & Galand, 2016; Leenknecht et al., 2017). When students feel that they have a say in their learning, are understood by their teachers, and are encouraged to explore topics on their terms, their intrinsic motivation is ignited (Skinner & Belmont, 1993). This motivation often manifests in heightened attention, more profound comprehension of complex subjects, and a more robust drive to excel academically.

Evidence from Diverse Educational Settings

Studies conducted across varied educational settings, from primary schools to higher educational institutions, have underscored the positive correlation between autonomy and academic scores (Chirkov & Ryan, 2001; Reeve & Cheon, 2021). In primary and middle school environments, where foundational concepts are laid down, autonomy-supportive teaching methods have been shown to foster curiosity and creativity (Reeve & Cheon, 2021). Students in such settings exhibit enhanced problem-solving skills, better retention rates, and higher test scores than their counterparts in more controlled environments (Hardré & Reeve, 2003; Reeve & Cheon, 2021).

High school and university studies have revealed similar patterns. Autonomy in these settings often takes the form of self-directed projects, choice in coursework, and collaborative learning experiences (Reeve & Cheon, 2021). Research has shown that students in such

environments secure better grades and exhibit skills like critical thinking and independent research beyond mere rote learning (Reeve & Cheon, 2021).

Nuanced Understandings: It is Not One-Size-Fits-All

While there is a general consensus in research that suggests a positive relationship between student autonomy and academic scores, it is important to consider the nuances involved. The concept of autonomy can vary among individual students, with some perceiving it as the freedom to choose research topics and others seeing it as flexibility in learning methods (Mammadov & Tozoglu, 2023). Moreover, the impact of autonomy on academic scores is influenced by cultural, societal, and personal factors. In different cultural contexts, autonomy may have varying effects on academic performance due to the differing emphasis on individualism versus collectivism (Lansford et al., 2018).

The Role of Educators in Nurturing Autonomy

One of the key takeaways from current research is the role of educators in nurturing and fostering autonomy (Jang et al., 2010; Reeve & Cheon, 2021). Teachers are crucial in creating an autonomy-supportive environment (Caesens et al., 2019). Autonomy-supportive teaching involves various methods, such as offering meaningful choices, providing constructive feedback, acknowledging students' feelings and perspectives, and encouraging self-directed learning (Brandišauskienė et al., 2022; Cheon et al., 2023; Jang et al., 2023). These practices have been extensively studied and shown to enhance students' sense of autonomy (Brandišauskienė et al., 2022; Cheon et al., 2020, 2023; Jang et al., 2023; Patall et al., 2018; Yang, Chen et al., 2022). Educators trained in understanding and promoting autonomy tend to have classrooms where students are more engaged and participative and perform better academically (Reeve & Cheon,

2021). The teacher-student dynamic in such environments is more collaborative, with educators serving as learning facilitators rather than information transmitters (Abós et al., 2018).

Competence and Academic Scores

In the field of educational psychology, competence is a crucial factor that significantly influences students' academic experiences and outcomes (Liu et al., 2022). Competence is an essential component of the Self-determination theory (SDT), which emphasizes the inherent human need to interact with the environment and demonstrate ability effectively (Eckley et al., 2022). Numerous studies have highlighted the significant relationship between students' perceptions of competence and their academic performance, providing compelling evidence on the dynamics of successful learning (Eckley et al., 2022; Liu et al., 2023).

The Link Between Competence and Academic Outcomes

The connection between competence and academic performance is grounded in the belief that students who feel adept and confident in their abilities are more likely to engage deeply with academic tasks (Muhidin et al., 2021). When learners perceive themselves as competent, they approach challenges with increased enthusiasm, resilience, and determination. Empirical studies indicate that students who feel competent in their academic abilities tend to display heightened intrinsic motivation, better problem-solving skills, and a more profound understanding of complex topics (Lozano et al., 2021). Such students, propelled by their self-belief, are often more receptive to feedback, using it as a tool to enhance their skills rather than as a critique of their capabilities (Lozano et al., 2019).

Complexities in the Competence-Academic Relationship

While the positive correlation between competence and academic scores is well-documented, it is essential to understand the complexities inherent in this relationship.

Competence is multifaceted, encompassing academic prowess and social, emotional, and practical skills (Korpershoek et al., 2019). Moreover, competence does not exist in a vacuum. External factors, such as teaching methodologies, classroom environment, peer interactions, and familial influences, can shape students' sense of competence. For instance, consistent positive reinforcement from teachers and parents can bolster a student's competence beliefs, leading to improved academic performance (Korpershoek et al., 2019).

The Educator's Role in Cultivating Competence

A pivotal aspect emerging from current research is the indispensable role of educators in fostering competence (ELsaeed & Mahmoud, 2022). Teachers can uniquely nurture or diminish a student's sense of competence (ELsaeed & Mahmoud, 2022). Teaching strategies emphasizing mastery over performance, prioritizing understanding over rote memorization, and offering constructive, actionable feedback can enhance students' competence (Molloy et al., 2019). Additionally, providing opportunities for students to experience success, even in small tasks, can build their confidence and perceived competence (Morris, 2019).

Relatedness and Academic Scores

In the vast tapestry of educational psychology, relatedness stands out as a potent driver shaping students' experiences, interactions, and, consequently, their academic outcomes (Keaulana et al., 2021). As one of the core tenets of the self-determination theory (SDT), relatedness embodies the innate human desire to connect, belong, and experience camaraderie with others (Keaulana et al., 2021). Delving into the current body of research unveils compelling insights into the symbiotic relationship between relatedness and academic scores (Keaulana et al., 2021).

The Intertwining of Relatedness and Academic Achievement

The nexus between relatedness and academic performance rests on the foundational idea that human beings, by nature, thrive in environments where they feel connected and understood when students perceive a sense of belonging within educational settings, whether with peers, educators, or the broader institution, they display heightened engagement, persistence, and commitment to their academic pursuits (Chiu, 2021; Froiland et al., 2016; Furrer & Skinner, 2003; Hospel & Galand, 2016; Otundo & Garn, 2019; Tang et al., 2023). Research suggests that a strong sense of relatedness can act as a buffer against academic adversities, bolstering resilience and fostering a conducive mindset for learning. Students who experience meaningful relationships within academic environments approach challenges collaboratively, seeking support, sharing insights, and collectively striving for academic success (Gehlbach et al., 2011).

Diverse Educational Settings and Relatedness

Insights from studies spanning various educational contexts provide a comprehensive understanding of how relatedness impacts academic outcomes. In primary and secondary educational arenas, the influence of peer relationships is particularly pronounced. Friendships, collaborative learning groups, and peer mentorship programs can significantly influence students' academic attitudes, engagement levels, and grades (Chiu, 2021; Hospel & Galand, 2016). A supportive peer network can provide shared knowledge, collaborative problem-solving, and emotional support during academically challenging times. In higher education settings, the emphasis on relatedness often shifts towards relationships with educators, mentors, and the broader academic community. Moreover, university students, when they feel connected to their institutions and perceive their educators as approachable and supportive, exhibit higher levels of academic motivation, better retention rates, and overall superior academic performance (Davis,

2020, 2022; Davis & Printer, 2023; Hardré & Reeve, 2003; Jeno et al., 2018; Levesque-Bristol et al., 2020; Yu & Levesque-Bristol, 2020).

The Multifaceted Nature of Relatedness

The influence of relatedness on academic scores is not merely binary. It is a rich, multifaceted interplay encompassing various relational dynamics, including student-student, student-teacher, and student-institution relationships (Opdenakker et al., 2012). It is also noteworthy that the perception and need for relatedness might vary based on individual personalities, cultural backgrounds, and life experiences (Kaplan et al., 2022). For some students, smaller, intimate study groups fulfill their relatedness needs, while others might seek broader community engagements or mentoring relationships (Al-Bahrani, 2022; Chiu, 2021; Hospel & Galand, 2016). Beyond imparting knowledge, educators can create environments that foster connection, mutual respect, and understanding (Sahu, 2020). By promoting collaborative learning, facilitating open discussions, and adopting an empathetic approach, teachers can significantly enhance students' sense of relatedness, with ripple effects on their academic achievements.

Teaching Practices and Their Outcomes: A Theoretical Exploration

The multifaceted relationship between teaching practices and student outcomes has been extensively examined over the past several decades (Burić & Kim, 2020). With the evolution of learning theories, motivational models, and empirical insights from classroom-based research, a complex but enlightening understanding of this dynamic interplay has emerged (Lazarides et al., 2023). By integrating historical perspectives, seminal learning paradigms, contemporary motivational frameworks, and the latest evidence-based practices, one can comprehensively

understand how teaching practices correlate with academic and developmental outcomes (Lazarides et al., 2023).

Foundational Learning Theories

Before delving into teaching methods and their impacts, it is useful to understand some of the foundational learning theories that influenced modern educational thinking. Prominent are the paradigms proposed by pioneering thinkers like Jean Piaget, Lev Vygotsky, Jerome Bruner, and Albert Bandura. Piaget's theory of cognitive development (1936) proposed universal stages of cognitive ability that correspond to specific age ranges. He posited that teaching must align with a child's developmental stage as they progress from sensorimotor knowledge as infants to concrete operational thinking as kids and eventually to abstract conceptualization in adolescence. Piaget's ideas influenced teaching practices that focused on discovery-based learning aligned with the child's level of cognitive maturity.

Alternatively, Vygotsky's social development theory (1978) emphasized the role of social interactions in cognitive development. He introduced pivotal concepts like the zone of proximal development, scaffolding, and cooperative learning - ideas that transformed classroom teaching. Vygotsky highlighted the teacher's role in providing appropriate guidance to enhance learning and comprehension.

Jerome Bruner built on constructivist theories to propose the spiral curriculum model (1960). This approach revisits core concepts at increasing levels of complexity as students progress. Bruner advocated for active student participation in learning and encouraged curricula that sparked inquiry and analytical thinking. His ideas paved the way for teaching strategies like inquiry-based learning and concept mapping.

Meanwhile, Albert Bandura's social learning theory (Bandura et al., 1999) underscored modeling and observational learning. Students learn not only from direct teaching but also by observing teachers or peers. His studies helped leverage modeling, group work, and creating a productive classroom culture. While not exhaustive, these seminal learning theories provided the scaffolding for modern educational practices. They highlighted crucial parameters like developmental readiness, social interactions, active discovery, multifaceted knowledge representation, and the role of observational learning in shaping teaching strategies.

Contemporary Learning Frameworks

Building upon these foundational theories, contemporary researchers have expanded the understanding of the learning process. Frameworks like Bloom's taxonomy, Gardner's multiple intelligences, and Gagné's domains of learning build upon and extend seminal ideas to provide richer perspectives on classroom teaching. Bloom's taxonomy (1956) proposed a hierarchy of learning objectives categorized into knowledge, comprehension, application, analysis, synthesis, and evaluation. This taxonomy has provided a model for structuring curricula and assessments, guiding teachers to formulate learning activities that traverse lower to higher-order cognitive skills.

Howard Gardner's theory of multiple intelligences (1983) delineated eight distinct intelligences - verbal-linguistic, logical-mathematical, visual-spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalistic. Gardner’s theory provided a blueprint for teachers to utilize multifaceted approaches that leverage various intelligences based on each student's strengths. Robert Gagné (1985) introduced five domains of learning, which are: verbal information, intellectual skills, cognitive strategies, motor skills and attitudes. His ideas encouraged teachers to utilize diverse strategies aligned to each domain, recognizing that

students learned in varied ways. These contemporary theories present expansive lenses to understand the learning process. They provide frameworks for teachers to craft instructional approaches tailored to the multifaceted nature of student competencies and cognition

Motivational Models

Paralleling the evolution of learning theories, motivational models also progressed from seminal concepts like intrinsic and extrinsic motivation to contemporary theories like SDT. These motivational models are indispensable in unearthing the interplay between teaching practices and student outcomes. Early experiments by researchers like Harlow et al. (1950), highlighted the dichotomy between intrinsic motivators driven by inherent satisfactions versus extrinsic motivators like rewards or incentives. Subsequent theorists like Deci and Ryan (1985) built upon this to formulate SDT, distinguishing between autonomous and controlled forms of motivations and proposing psychological needs like autonomy, competence and relatedness.

Contemporary researchers continue to investigate how motivational models apply in classroom contexts. For instance, self-efficacy theory proposed by Bandura (1977) is leveraged to promote student confidence and perseverance. Goal orientation theory delineates mastery, performance, and avoidance goals that shape students' motivation and learning strategies. By incorporating motivational models, educators better understand the drivers behind student engagement. This knowledge allows us to implement teaching practices that ignite motivation, cultivate lifelong learning skills, and promote meaningful development.

Effective Teaching Practices Supported by Research

The evolution of learning theories and motivational models provides the scaffolding to deduce research-backed teaching practices that translate to positive student outcomes. Marrying these frameworks with empirical classroom evidence offers a guide for effective teaching.

Studies emphasize personalized learning tailored to individual skills, paces, and interests as more impactful than a one-size-fits-all approach (Pane et al., 2015). Technologies allow more student-centric personalization, but teachers remain crucial in concept delivery and guidance.

Emphasize Mastery Goals Over Performance

Mastery orientation encourages effort and persistence by emphasizing self-improvement. In contrast, performance goals can demotivate struggling students by over-focusing on achievement outcomes (Pekrun et al., 2014). Feedback and assessments must reinforce effort and progress.

Promote Collaborative Learning and Scaffold Instruction

Grouping students provides social and cognitive benefits, including exposure to diverse viewpoints. Teachers must promote collective and individual accountability to alleviate group social loafing tendencies (Bertucci et al., 2010). Scaffolding instructional materials and tasks into manageable parts, alongside prompts or process reminders, provides the appropriate challenge level for student development (Belland, 2017). Scaffolding reduces cognitive overload while expanding competencies.

Foster Student Autonomy and Cultivate a Nurturing Classroom Climate

Providing meaningful choices, allowing self-pacing, and promoting shared decision-making enhances autonomous motivation, engagement, and achievement (Bloem et al., 2023). However, students need varying levels of autonomy support based on their competencies. Positive teacher-student relationships and peer interactions promote cooperation, responsibility, and prosocial behaviors (Wang et al., 2019). A supportive environment also fulfills relatedness needs, boosting motivation and participation (Reeve, 2006). Positive teacher-student relationships can also encourage inquiry, dialogue, and critical thinking (Reeve, 2006).

Additionally, Ros et al. (2020) found that positive teacher-student relationships can lead to divergent, evaluative, and inferential thinking, promoting deeper learning rather than passive absorption.

Provide Timely, Constructive Feedback

Formative feedback during learning has a more potent impact than summative assessments at the end (Wisniewski et al., 2020). According to Wisniewski et al. (2020), feedback highlighting effort, improvement, and processes is more beneficial than person-oriented praise. These research-supported practices synthesize seminal learning theories with motivational models and cognitive science. While not exhaustive, they exemplify foundational pillars of effective teaching that translate to student growth.

Observing Outcomes

Ultimately, the efficacy of teaching practices manifests through outcomes - whether proximal indicators like student engagement or distal metrics like test scores and career success (Hill & Erickson, 2019). While a complex web of socioeconomic factors influences these outcomes, teachers and their practices remain highly consequential. Proximal outcomes span enhanced motivation, enjoyment, participation, comprehension, knowledge retention, and higher-order thinking (Cohen et al., 2020). Distal outcomes encompass test scores, grades, graduation rates, college admissions, career trajectories, and lifetime earnings (Li, Galvin et al., 2019). These outcomes result from an intricate interplay of teaching practices, cognitive abilities, motivational levels, home environments, and economic factors (García & Weiss, 2017).

While teaching practices have been found to strongly correlate with proximal outcomes (Hill & Erickson, 2019), their impact on distal outcomes are influenced by external variables (Hill & Erickson, 2019). Long-term academic and career success depends on accumulating

positive proximal outcomes over time (Emery et al., 2020). Quality instruction is crucial in influencing motivation, engagement, and conceptual understanding (Ang et al., 2018). However, distal outcomes are influenced by a combination of factors (Liu, Shang et al., 2021). Holistic development and life success require comprehensive and coordinated efforts across years of learning experiences (Yang, Lai et al., 2022).

Concluding Teaching Practices and Student Outcomes

In summary, understanding the relationship between teaching practices and student outcomes requires a comprehensive review of learning theories, motivational models, empirical studies, and developmental science (Molina-Azorín & Guetterman, 2023a; Vasconcellos et al., 2020). Research has shown that core practices such as scaffolding, cooperation, personalization, and constructive feedback significantly impact student outcomes (Hall & MacDonald, 2023; Molina-Azorín & Guetterman, 2023a). It is important for educators to stay updated on emerging evidence-based strategies (Marcos et al., 2023).

Promising avenues for the evolution of teaching practices include the use of technology, cognitive neuroscience, motivational psychology, and scaled data analytics (Archibald, 2023; Dewan et al., 2023). Examples of these possibilities include artificial intelligence-driven adaptive learning, immersive simulations, and gamification (Braid, 2022; Burić & Kim, 2020). However, amidst all the innovation, the goal of education should always be to enlighten minds, ignite intrinsic passion, and empower future generations (Farrell et al., 2021).

Self-determination theory

The cornerstone of understanding the potential impacts of SDT on standardized test scores lies in its foundational principles. SDT postulates a spectrum of human motivations, emphasizing the role of autonomy, competence, and relatedness as vital psychological nutrients

fostering both intrinsic and extrinsic motivation internalization (Ryan & Deci, 2020). When sufficiently satisfied, these needs can lead to enhanced motivation, deeper learning, and better academic outcomes (Ryan & Deci, 2020). It is crucial, therefore, to dissect these components, starting with arguably the most seminal: autonomy.

Autonomy

A complex web of intrinsic and extrinsic factors is human motivation's heart. From the allure of rewards to the driving force of personal passions, what moves individuals to act is a topic of enduring intrigue. The concept of autonomy is central to this exploration and foundational within SDT. More intricate than making decisions independently, autonomy represents an innate psychological need that drives human behavior and influences overall well-being (Bureau et al., 2021; Cho et al., 2022; Feraco et al., 2022; Reeve & Cheon, 2021).

Within SDT, autonomy is conceived not just as self-governance but as volitional and reflective self-endorsement of one's actions. It transcends mere independence or freedom of choice. Instead, it delves into the deeper realm of feeling that one's actions, even if influenced externally, resonate with one's inner values, beliefs, and sense of self (Deci & Ryan, 2000; Niemiec & Muñoz, 2019; Reeve & Cheon, 2021).

A crucial distinction exists between autonomy and independence. While the terms 'autonomy' and 'independence' might seem synonymous, these two concepts represent different dimensions of self. Independence is the capacity to act independently without relying on others. Autonomy, however, encompasses more than just self-reliance (Niemiec & Muñoz, 2019; Reeve & Cheon, 2021). An individual can make a choice influenced by others and still act autonomously if that choice aligns with their intrinsic values. For instance, a student might

choose a field of study encouraged by their parents (Pesch et al., 2015). If they genuinely resonate with that choice, it is an autonomous decision, even if not made independently.

When people perceive that they have choices and can guide their life direction, they experience greater psychological well-being (Feraco et al., 2022; Reeve, 2006; Reeve & Cheon, 2021; Ryan & Deci, 2006). Autonomy satisfies a fundamental psychological need, enhancing motivation, better mental health, and increased resilience against adversities (Bureau et al., 2021; Niemiec & Muñoz, 2019; Ntoumanis et al., 2020; Reeve & Cheon, 2021; Shelton-Strong & Mynard, 2021). Conversely, environments that stifle autonomy, impose rigid controls, and offer little room for personal expression can lead to feelings of alienation, reduced motivation, and, in some cases, mental health challenges (Bureau et al., 2021; Niemiec & Muñoz, 2019; Ntoumanis et al., 2020; Reeve & Cheon, 2021). A lack of autonomy can give rise to a phenomenon called "learned helplessness," where individuals, repeatedly subjected to uncontrollable events, begin to feel powerless and passive.

Autonomy finds relevance in myriad domains. In educational settings, the emphasis on autonomy can transform learning experiences (Reeve, 2009). When students sense autonomy in their learning processes, they are more likely to be intrinsically motivated, leading to deeper comprehension and sustained engagement (Chiu, 2021; Domen et al., 2019; Hospel & Galand, 2016; Liu, Shang et al., 2021; Niemiec & Muñoz, 2019; Ntoumanis et al., 2020; Reeve & Cheon, 2021).

While autonomy is paramount, its influence is often intertwined with other psychological needs. Within the SDT framework, autonomy, competence (a sense of efficacy), and relatedness (a feeling of connection with others) form a triad of basic psychological needs. Autonomy's full potential is realized when complemented by competence and relatedness (Ahn & Back, 2019;

Karahanna et al., 2018). Feeling autonomous in a task while also feeling competent can amplify motivation. Simultaneously, autonomy becomes even more empowering when experienced within supportive relationships with mutual respect and understanding (Bureau et al., 2021; Niemiec & Muñoz, 2019; Ntoumanis et al., 2020; Reeve & Cheon, 2021).

As a foundational pillar of SDT, autonomy holds significant promise in deepening the understanding of human motivation (Bureau et al., 2021). It is not just about choices but about meaningful choices – decisions that align with one's innermost beliefs and values. Whether education, work, health, or personal relationships, autonomy weaves through the tapestry of human experience, influencing outcomes, behaviors, and well-being. Recognizing its significance and cultivating environments that promote autonomy can pave the way for more fulfilling, empowered, and meaningful lives (Feraco et al., 2022; Niemiec & Muñoz, 2019; Ntoumanis et al., 2020; Reeve & Cheon, 2021).

Competence

Throughout their lives, human beings strive for mastery, effectiveness, and capability in their tasks (Amukune & Józsa, 2023). Whether a child learning to tie their shoes or an artist mastering a brushstroke, this innate desire to be competent is fundamental to human nature. As one of the cornerstones of SDT, competence emerges as a pivotal psychological need, influencing behaviors, motivation, and overall well-being (Bureau et al., 2021; Feraco et al., 2022; Renaud-Dubé et al., 2015). Within the framework of SDT, competence is not merely about skills or expertise. Still, it encompasses a broader spectrum: the intrinsic need to demonstrate capability and produce desired outcomes and the internal satisfaction derived from such endeavors (Aelterman et al., 2018; Bureau et al., 2021; Deci & Ryan, 2000).

When individuals feel competent, they experience a sense of efficacy and empowerment (Deci & Ryan, 2000). This sensation is about achieving a goal and internal recognition of one's capabilities (Aelterman et al., 2018; Bureau et al., 2021; King & Mendoza, 2021). Conversely, environments that continuously thwart attempts at mastery, offering little feedback or opportunities for skill development, can lead to diminished motivation, lower self-esteem, and feelings of inadequacy.

From a developmental perspective, the journey towards competence begins early in life (Antão, 2020). A toddler's gleeful expression upon stacking blocks or a child's pride in riding a bicycle without support underscores the role of competence in developmental milestones. These experiences, reinforcing a sense of capability, serve as foundational blocks for self-worth and self-confidence. Moreover, competence plays a crucial role in the domain of education. Learners who perceive tasks as opportunities to enhance their skills and receive feedback that nurtures their sense of competence exhibit higher intrinsic motivation, persistence, and deeper engagement (Bureau et al., 2021; Chiu, 2021; Hospel & Galand, 2016).

In professional realms, competence takes center stage. Employees thrive in environments where they can highlight their skills, receive constructive feedback, and see tangible results (Orțan et al., 2021; Riyanto et al., 2021). Such settings lead to higher job satisfaction and foster innovation and creativity. On the contrary, workplaces that offer limited growth opportunities or fail to recognize employees' competencies can lead to decreased morale and reduced productivity (Caesens et al., 2019; Farooq et al., 2021; He et al., 2023; Liu, Lyu et al., 2023; Low et al., 2023; Mitchell et al., 2018; Mutegi et al., 2023; Ogunfowora et al., 2022; Sandrin et al., 2021; Whiteoak et al., 2023).

While competence holds its distinct significance, its influence is often magnified when experienced with autonomy and relatedness, the other two pillars of SDT. A task where an individual feels both competent and autonomous becomes intrinsically rewarding. Similarly, when competence is recognized and validated by peers or significant others, fostering a sense of relatedness can lead to heightened motivation and satisfaction (Bureau et al., 2021; Meens et al., 2018; Niemiec & Muñoz, 2019; Shin & Johnson, 2021).

Competence, as a central tenet of SDT, provides invaluable insights into human motivation and behavior. It underscores the universal human desire to interact effectively with one's environment, to master skills, and to derive intrinsic satisfaction from such mastery (Deci & Ryan, 2000). Understanding the multifaceted role of competence, from early developmental stages to professional and personal realms, paves the way for creating environments that recognize, nurture, and celebrate this intrinsic psychological need. Cultivating competence can enhance motivation, performance, and a richer, more fulfilled human experience (Simões & Calheiros, 2021).

Relatedness

The human tapestry is interwoven with connections, shared experiences, and mutual bonds. From the early days of huddled tribes around fires to the interconnected global communities of today, the need for connection, understanding, and belonging has been a persistent theme (Crestani & Taylor, 2021). As a fundamental tenet of SDT, relatedness delves into this intrinsic need for interpersonal connections and the sense of being valued and understood by others.

Across diverse cultures and societies, the essence of relatedness remains consistent. Individuals exhibit higher levels of psychological well-being when they feel connected to others

and are an integral part of a group or community (Allen et al., 2016; Bureau et al., 2021; Feraco et al., 2022; La Guardia et al., 2000; Simões et al., 2021). On the contrary, feelings of isolation, exclusion, or disconnection can lead to adverse emotional states, such as anxiety, depression, and lowered self-esteem (Respondek et al., 2017).

The importance of relatedness has been a fundamental aspect of human existence throughout history (Ross & Inagaki, 2023). Human ancestors relied on cohesive group dynamics for survival, such as hunting, protection, and resource sharing (Ross & Inagaki, 2023). While the challenges of modern life have changed, the underlying need for relatedness remains just as potent (Ross & Inagaki, 2023).

At the individual level, the roots of relatedness can be traced back to infancy (Moreton et al., 2019). The bond between a caregiver and a child exemplifies the innate human desire for connection (Moreton et al., 2019). Secure attachments in early childhood, where a child feels safe, protected, and understood, lay the foundation for healthy interpersonal relationships later in life (Moreton et al., 2019). These early experiences also play a crucial role in shaping an individual's self-worth and confidence (Moreton et al., 2019).

As individuals progress through different stages of life, the scope of relatedness expands (Lorijn et al., 2021). Schools, workplaces, social groups, and communities become arenas where the need for relatedness is expressed (Lorijn et al., 2021). Adolescents, for example, often seek peer acceptance and validation, with friendships and group dynamics taking center stage (Oberle, 2018).

In professional settings, being a valued team member, where contributions are recognized, and interpersonal relationships are fostered, can enhance job satisfaction and overall morale (Oberle, 2018). The fulfillment of relatedness needs can significantly impact various

aspects of individuals' lives. For instance, research has shown that acceptance and rejection by parents and peers during adolescence can have long-term effects on educational attainment (Lorijn et al., 2021). Additionally, social-emotional competence and peer acceptance in school are closely linked, as early adolescents spend a substantial portion of their school day interacting with peers (Oberle, 2018).

The need for relatedness extends beyond human connections. Some individuals may find fulfillment in connecting with nonhuman entities, such as nature (Moreton et al., 2019). The connection to nature is more strongly related to connection with distant others rather than close ones (Moreton et al., 2019). Parks, for example, fulfill a basic human need for connection to family, loved ones, community, neighborhood, self, and nature (Swierad & Huang, 2018).

The significance of relatedness becomes even more evident when examining its impact on mental health (Ntoumanis et al., 2020). Loneliness, perceived as the antithesis of relatedness, has been linked to various psychological challenges, including depression and increased stress levels. On the other side, strong social support networks, where relatedness thrives, have acted as protective factors against mental health challenges and promote resilience during adversities (Ntoumanis et al., 2020).

While relatedness is a powerful force, its true potential is often realized in synergy with autonomy and competence, the other pillars of SDT. A supportive environment where one feels related can amplify the sense of autonomy, making choices feel even more meaningful (Baker & Goodboy, 2018). Similarly, competence, when acknowledged and validated by significant others, intensifies the joy of mastery. Thus, fostering an environment that caters to all three needs can lead to heightened motivation and well-being (Bureau et al., 2021; Feraco et al., 2022).

Relatedness, emphasizing genuine connections, mutual understanding, and shared experiences, provides invaluable insights into the human psyche's depths. It highlights the timeless human pursuit of belonging, acceptance, and deep interpersonal bonds. In recognizing and nurturing this fundamental need, individuals, communities, and societies can cultivate environments that promote individual well-being, collective harmony, and cohesion (Bureau et al., 2021; Feraco et al., 2022). At its core, relatedness speaks to the heart of the human experience: the profound joy and comfort of being in meaningful relationships and the shared journey of navigating the complexities of life together.

Concluding Relatedness and Academic Scores

The intricate dance between relatedness and academic scores underscores the significance of human connection in education. As the body of research grows, the message is clear: fostering meaningful relationships within educational environments can be a significant change, paving the way for enriched academic experiences, bolstering resilience, and exemplary academic outcomes. Embracing relatedness is about enhancing scores and nurturing holistic, connected learners prepared to navigate the world's complexities collaboratively.

Supporting Literature - GAP

Education has long been molded by various critical factors that impact student success. Teacher practices and motivational models emerge prominently, with self-determination theory (SDT) occupying a central role. However, scrutiny of prevalent literature exposes specific gaps, especially in understanding the relationship between teacher practices, student motivation, and academic achievements, particularly regarding standardized test scores.

Interestingly, many of these studies draw upon subjective datasets. A lack of objective datasets poses an issue, as there is a conspicuous lack of juxtaposition between subjective teacher

perceptions and objective student achievements. This lacuna not only emphasizes the significance of the current investigation but also provides a compass, pointing toward directions for future research.

For instance, a study by Haw et al. (2021) focused on the principles of SDT. Their findings highlighted the vital link between perceived need-supportive leadership and its cascading effects on teaching, impacting student engagement. They emphasized the need for amalgamating teacher and student data for a clearer picture of motivation dynamics.

Further broadening the horizon, Ahn et al.'s (2021) research concentrated on South Korean educational scenarios. Their groundbreaking approach traced the journey from teacher motivation to student academic success, underlining the critical role of need-supportive practices. This study, though comprehensive, stressed the urgency for more detailed explorations within the SDT domain.

Mendoza et al. (2022) provided insight into English language learning. They presented a persuasive argument about the interplay between need-supportive teaching, student motivation, and achievement. However, their reliance on student perspectives highlighted another research limitation—the dominance of student self-reports, pointing to a pressing need for teacher-reported data. They further highlighted a lack of objective measurables in the field and suggested that more studies tied SDT concepts to more objective metrics.

Tied to this issue is the challenge of recall bias inherent in self-reporting. The malleability of human memory, influenced by external and internal factors, can skew authentic classroom experiences over time. Haw et al.'s 2021 research, while offering invaluable insights into improving reading skills across diverse backgrounds, still pivoted on student self-reports. This again underscored the urgency to integrate teacher viewpoints to balance potential biases.

From a methodology standpoint, much of the current literature adopts cross-sectional designs. While efficient, these approaches often overlook the evolving nature of classrooms—the dynamism of teaching practices, student-teacher relationships, and the cumulative effects of teaching strategies.

In summary, while researchers have made commendable progress in decoding the intricacies of SDT in education, significant gaps persist. The over-reliance on student self-reports and the absence of teacher perspectives leave room for biases. Furthermore, the prevalent preference for subjective insights, without binding them to objective metrics like standardized test scores, demands attention. To truly comprehend the depth of need-supportive practices and their influence, future research should focus on integrating teacher self-reports. Only then can educators hope to formulate more holistic, precise educational strategies and policies.

Biblical Foundations for Motivation and Academic Success

In the vast spectrum of wisdom that constitutes the Bible, themes of motivation, perseverance, and the pursuit of knowledge emerge as timeless tenets that continue to resonate with modern educational paradigms. offers an understanding of motivation rooted in faith and spiritual growth. It sheds light on how this divine wisdom can be interwoven with contemporary educational practices to foster a comprehensive approach to learning.

Amidst the biblical verses and teachings, there is a unique synthesis of the heart's passion and the mind's pursuit, guided by divine intention. From the Proverbs emphasizing the value of knowledge and understanding to the teachings of Jesus, which underscore the importance of internal motivation and purposeful living, the Bible encapsulates an integrated approach to motivation and academic achievement. Recognizing and integrating these age-old truths into

contemporary educational landscapes can foster a richer, more grounded perspective on motivation and its pivotal role in academic success.

Biblical Foundation for Motivation

As viewed through the lens of biblical scriptures, motivation offers profound insights into the core of human drive, ambition, and purpose. In its rich tapestry of narratives, parables, and teachings, the Bible provides a unique perspective on motivation that speaks to the spiritual dimension of human existence and addresses the tangible aspects of daily life, ambition, and perseverance. At the beginning of the biblical narrative, in Genesis, the reader witnesses the divine motivation in the act of creation. “And God saw everything that he had made, and behold, it was very good” (*English Standard Version*, 2001, Genesis 1:31). This acknowledgment of the intrinsic goodness of creation sets the tone for understanding motivation as a reflection of divine intent and purpose. Just as a purpose in creation drove God, so are humans called to find purpose and motivation in their endeavors.

The Book of Proverbs, often called a collection of wisdom literature, offers several insights into motivation. One of the recurrent themes is the value of diligence and hard work: “The soul of the sluggard craves and gets nothing, while the soul of the diligent is richly supplied” (*English Standard Version*, 2001, Proverbs 13:4). Scripture encourages believers to do good works out of genuine love and desire rather than obligation or recognition from others. For example, Colossians 3:23 states, "Whatever you do, work at it with all your heart, as working for the Lord, not for human masters" (*English Standard Version*, 2001). This suggests followers of Christ should work wholeheartedly because of devotion to God, not to garner praise or rewards from other people.

Additionally, the Bible promotes acting with integrity and moral purpose stemming from one's identity in Christ. Philippians 2:13 declares, "For it is God who works in you to will and to act in order to fulfill his good purpose" (*English Standard Version*, 2001). This indicates God equips Christians by his Spirit to carry out his will through their voluntary actions. Their motivation is spiritual empowerment rather than selfish interests or external pressures. Believers do good works because they are new creations in Christ not because they feel forced, as 2 Corinthians 5:17 states, "Therefore, if anyone is in Christ, he is a new creation. The old has passed away; behold, the new has come" (*English Standard Version*, 2001).

The biblical worldview supports internal motivation by emphasizing devotion to God, personal integrity, and identity in Christ as primary motivators. Scripture advocates acting from the heart under the prompting of the Holy Spirit rather than an expectation of human accolades or material gain. As Colossians 3:17 states, "And whatever you do, whether in word or deed, do it all in the name of the Lord Jesus, giving thanks to God the Father through him" (*English Standard Version*, 2001). This encourages believers to let love for Christ inwardly compel them towards righteous action.

Furthermore, the biblical perspective on motivation is deeply intertwined with the pursuit of wisdom and knowledge. "Blessed is the one who finds wisdom, and the one who gets understanding" (*English Standard Version*, 2001, Proverbs 3:13). The motivation to seek wisdom, as illuminated in this verse, is not merely for personal gain but is portrayed as a path to blessedness and fulfillment. Seeking wisdom is also depicted as more valuable than material riches, as Proverbs 16:16 states, "How much better to get wisdom than gold! To get understanding is to be chosen rather than silver" (*English Standard Versio*n, 2001). This

demonstrates that the biblical drive for wisdom stems from recognizing its eternal spiritual worth rather than temporary earthly rewards.

In addition, Scripture presents wisdom and understanding as gifts from God fueled by faith. As James 1:5 notes, “If any of you lacks wisdom, let him ask God, who gives generously to all without reproach, and it will be given him” (English Standard Version, 2001). Thus, motivation to learn flows from dependence on the Lord rather than one’s own efforts. Likewise, Colossians 2:2-3 prays for believers to have “all the riches of full assurance of understanding and the knowledge of God’s mystery” (*English Standard Version,* 2001). Growth in learning is thereby empowered by drawing near God’s wise presence. Overall, the biblical perspective sees internal motivation for pursuing wisdom as originating from recognizing its divine spiritual value, gifted by God’s grace to all who earnestly seek it by faith.

The New Testament, too, provides significant insights into motivation, especially in the teachings and life of Jesus Christ. The parable of the talents in the Gospel of Matthew highlights the essence of motivation. In this parable, servants are entrusted with different amounts of talents, and their actions reflect their inner drive and sense of responsibility. The servant who utilizes his talents to gain more is commended, illustrating the importance of harnessing one’s abilities and being motivated for growth: “His master said to him, ‘Well done, good and faithful servant. You have been faithful over a little; I will set you over much. Enter into the joy of your master’” (*English Standard Version,* 2001, Matthew 25:21).

Moreover, the Apostle Paul’s writings often touch on the theme of motivation. In his letter to the Philippians, Paul speaks of his motivation to know Christ deeply: “Indeed, I count everything as loss because of the surpassing worth of knowing Christ Jesus my Lord” (*English*

Standard Version, 2001, Philippians 3:8). This declaration offers a profound spiritual dimension to motivation, highlighting the aspirational drive to attain a deeper relationship with God.

However, it is not just personal ambition or aspiration that the Bible speaks of. It also delves into the motivation for collective good and community upliftment. As Galatians states, "Let us not become weary in doing good, for at the proper time we will reap a harvest if we do not give up" (*English Standard Version*, 2001, Galatians 6:9). This verse calls on believers to remain motivated in their endeavors to do good, promising a harvest of blessings in time.

Understanding motivation from a biblical perspective involves recognizing the intricate balance between spiritual aspiration and tangible action. The Bible emphasizes the importance of aligning one's motivations with divine principles, seeking wisdom, being diligent, and nurturing a heart that desires to know God deeply. The biblical foundation for motivation paints a rich, multidimensional picture that spans personal ambition, community good, spiritual aspiration, and the pursuit of wisdom. By grounding one's motivations in the teachings and principles illuminated by the scriptures, individuals are guided toward a life of purpose, fulfillment, and divine alignment. As the Bible elucidates, true motivation reflects the human spirit's aspirations and is a testament to divine guidance and purpose.

Biblical Foundation for Academic Success

When viewed from a biblical lens, the essence of academic success transcends the mere accumulation of knowledge. It delves deeper into wisdom, understanding, and purposeful application of what is learned. Through its multifaceted teachings and narratives, the Bible offers profound insights into the nature of learning, the value of wisdom, and the divine perspective on pursuing knowledge, laying a solid foundation for academic success.

The Value of Wisdom and Understanding

Central to the Bible's view on academic success is the emphasis on wisdom and understanding. Proverbs, often considered the epitome of biblical wisdom literature, asserts, "For the Lord gives wisdom; from his mouth come knowledge and understanding" (*English Standard Version*, 2001, Proverbs 2:6). This verse not only attributes the source of wisdom to God but also links knowledge and understanding, suggesting that academic success is not just about acquiring knowledge, but also discerning its significance and application. The Book of Proverbs continues to extol the virtues of wisdom, suggesting its unparalleled value: "How much better to get wisdom than gold! To get understanding is to be chosen rather than silver" (*English Standard Version*, 2001, Proverbs 16:16). Here, wisdom and understanding are deemed more valuable than precious metals, indicating that true academic success lies in the cultivation of discernment and deep comprehension, rather than just material or worldly achievements.

Seeking Knowledge with Humility

A fundamental biblical principle intertwined with the quest for knowledge is humility. The Bible posits that the fear of the Lord, which can be understood as reverence and awe for God, is the beginning of knowledge (*English Standard Version*, 2001, Proverbs 1:7). Proverbs 1:7 teaches us that the foundation of genuine learning and academic success is rooted in humility and acknowledgment of a higher divine order. Approaching academics humbly means being open to learning, acknowledging one's limitations, and being receptive to divine wisdom.

Purposeful Application of Knowledge

The Bible also speaks to the importance of not just acquiring knowledge but also purposefully applying it. James, in the New Testament, exhorts believers to be doers of the word, not merely hearers (*English Standard Version*, 2001, James 1:22). This principle can be

extrapolated to the realm of academic success, suggesting that actual achievement is not just in gaining knowledge but in its meaningful application.

Diligence and Perseverance

The Bible is replete with verses emphasizing the virtues of diligence and perseverance, essential for academic success. Proverbs states, "The plans of the diligent lead surely to abundance, but everyone who is hasty comes only to poverty" (*English Standard Version,* 2001, Proverbs 21:5). Diligence, consistent effort, and perseverance in one's studies often pave the way for true academic success, more than sporadic bursts of enthusiasm. Similarly, Ecclesiastes 9:10 declares, “Whatever your hand finds to do, do it with your might" (*English Standard Version*, 2001). Applying one's full capability and effort to academic pursuits demonstrates diligence motivated by understanding life's fleeting nature.

Moreover, the apostle Paul stated he “pressed on toward the goal to win the prize" (*English Standard Version*, 2001, Philippians 3:14) despite obstacles. This verse underscores the importance of tenacity and resilience on the path to achievement. 2 Timothy 2:15 also exhorts, "Do your best to present yourself to God as one approved, a worker who has no need to be ashamed" (*English Standard Version*, 2001), speaking to the believer's inner drive toward excellence to please God. Hence the biblical worldview promotes diligence and perseverance as intrinsically motivated virtues for fulfillment and enduring success rather than merely short-term recognition.

The Holistic Nature of Biblical Learning

Academic success, from a biblical standpoint, also encompasses character formation. It is not limited to intellectual achievements but also includes nurturing virtues like integrity, honesty, and righteousness. The Psalmist speaks of the blessedness of the person "whose delight is in the

law of the Lord, and on his law, he meditates day and night" (*English Standard Version*, 2001, Psalm 1:2). This constant meditation and reflection on divine truths can serve as a guiding principle for students, enabling them to integrate knowledge with character development.

Wrapping up Biblical Foundation for Academic Success

The biblical foundation for academic success offers a profound, holistic approach. It emphasizes the intrinsic value of wisdom and understanding, promotes humility in pursuing knowledge, underscores the significance of purposeful application, and champions diligence and perseverance. By aligning academic endeavors with these biblical principles, one is poised not just for success in studies but also for a life enriched with purpose, wisdom, and divine guidance. The Bible paints a picture of academic success that marries intellect with character, knowledge with wisdom, and effort with divine grace.

Literature Review Summary: SDT, Academic Scores, and Biblical Foundations

The literature review delves deeply into the intricacies of SDT and its potential impact on educational outcomes, especially academic scores. Central to this exploration is the theoretical framework of SDT, which comprises three integral components: autonomy, competence, and relatedness. Autonomy represents the intrinsic human desire for self-direction and agency in one's actions. Competence focuses on an individual's drive to achieve mastery and control over outcomes. On the other hand, relatedness signifies the inherent need to foster connections and relationships with others, emphasizing the essence of belongingness.

Transitioning from the core tenets of SDT, the review shifts its lens toward academic scores. These scores, often used as benchmarks in the educational landscape, not only gauge a student's academic prowess but also hold significant weight in debates concerning educational strategies and methodologies. A critical aspect of this discussion is the undeniable influence of

motivation, a cornerstone of SDT, on academic outcomes. As reviewed, the literature outlines how each SDT component—autonomy, competence, and relatedness—correlates with academic scores, indicating their respective impacts on educational performance.

As with all fields of study, the literature on SDT and academic scores has some limitations. This review identifies potential biases that exist in current studies and emphasizes that there has been an over-reliance on particular research methods. Additionally, this review integrates biblical perspectives, which adds a unique dimension to this scholarly exploration. By drawing parallels between ancient scriptural wisdom and modern educational frameworks, the reviewed literature provides profound insights into the biblical underpinnings of motivation and academic achievement. With its grounding in scripture, the discussion touches on themes of divine wisdom, humility, diligence, and the harmonious alignment of knowledge and character. In this way, the literature offers a holistic understanding of academic success from both secular and religious viewpoints.

Chapter 3 lays out the precise methods and research design that will guide this study. It revisits the central research problem and questions under investigation, delineating plans for the sample populations, data compilation, and analysis procedures. Details are provided on the anticipated sample size and characteristics, data instruments and sources, as well as sequential processes for gathering and evaluating data. Discussion focuses on how the key elements of autonomy, competence, relatedness and academic achievement will be operationalized and measured. Additionally, the chapter summarizes ethical considerations to safeguard participants and bolster the study's integrity. Finally, limitations inherent in the research approach and design are acknowledged, and a summary encapsulates the chapter's key contours.

CHAPTER 3: RESEARCH METHOD

Overview

This chapter delves into the intricate details of the procedures employed in this research. It is paramount to elucidate these procedures for transparency and provide future researchers with a replicable blueprint. It will articulate the research design, including its philosophical foundations and the reasons behind selecting it. Subsequently, it will detail the participants' selection process, the data collection techniques, and the tools employed, emphasizing the TASCQ and standardized test scores. Additionally, the methodology chosen to analyze this data will be expounded upon. Ethical considerations, potential challenges in executing the study, and the proposed solutions will also be covered. By the end of this chapter, readers will have a comprehensive understanding of the methodological underpinnings of this study, ensuring both its credibility and its replicability.

Research Questions and Hypotheses

RQ1: What is the relationship between teachers' self-report scores on the ‘Teacher’s as Social Contexts Questionnaire’ and their student’s standardized test scores?

H1: Teacher TASCQ scores will positively correlate with their students standardized test scores.

RQ2: How do different aspects of SDT (autonomy, competence, and relatedness) as measured by the ‘Teacher’s as Social Contexts Questionnaire’ individually correlate with students' standardized test scores?

H2: Different aspects of SDT (autonomy, competence, and relatedness) as measured by the TASCQ, will impact scores differently.

Research Design

The study employed a correlational research design, an approach suited to identifying and analyzing relationships between two or more variables (Astalini et al., 2020). In this case, the focus is on the potential relationship between teachers' TASCQ scores and their students' standardized test scores. There are several reasons for selecting a correlational design for this research. Firstly, the primary intent of the study is not to determine causality but to discern any significant associations between the teachers' perceived needs-supportive teaching practices and the academic performance of their students. A correlational design aptly serves this purpose by providing a framework to observe and quantify the relationship's strength and direction between the two data sets.

Another justification lies in the inherent nature of the data being used. The TASCQ and standardized test scores provide interval or ratio-level data aptly suited for correlation analysis. This design makes it feasible to apply statistical measures, such as the Pearson correlation coefficient, to provide a quantifiable measure of the relationship between the variables. Furthermore, the correlational design offers a more practical and ethical approach to this research. Since it would be impractical and unethical to manipulate teachers' needs-supportive practices or students' test scores experimentally, the correlational approach allows for the examination of naturally occurring relationships in real-world educational settings.

Lastly, considering the gaps and limitations observed in the literature, this design offers an opportunity to explore teacher self-reports, an area less trodden in contemporary studies. Most existing studies focus on student self-reports, and there is a paucity of research exploring the relationship from the teacher's perspective. By juxtaposing teachers' TASCQ scores with

objective data from standardized tests, this design will contribute a unique and valuable perspective to the academic discourse.

In conclusion, the correlational research design is apt and pragmatic for the study's purpose. It enables the exploration of the relationship between teachers' perceptions and students' academic outcomes in a non-intrusive, ethically sound, and statistically robust manner. Through this design, the study may enrich the existing literature with insights from a teacher-centric perspective and offer potential pathways for further research and practical implications in the educational domain.

Participants

The participants for this study comprised of K-12 teachers from the Carthage R-IX school district in Carthage, MO. These educators will represent a range of teaching experiences, covering different academic grades, subjects, and socio-cultural backgrounds. By utilizing these qualifications of participants, I hope to ensure a comprehensive understanding of the impact of needs-supportive teaching practices across varied educational contexts by including a diverse pool of participants.

If this school district is unable to participate, the second plan is to reach out to K-12 teachers from the pool of schools in the same conference, all of whom share data and work together in addressing their mutual district needs. Many of these districts are in the southwest Missouri area and support similar student bodies and communities. Finally, the last option is to approach the very large district of Springfield, MO. This option will give access to a much larger body of teachers and students. Each option will have the same inclusion criteria, approval requests, and survey procedures.

The inclusion criteria set for this study was as follows: Participants must be certified K-12 teachers actively employed during the study. They must have ensured they have a basic level of classroom exposure and understanding. Additionally, their willingness to participate voluntarily and provide informed consent is essential.

The recruitment process for participants adopted a multi-pronged strategy. Firstly, direct outreach to schools will be done (Appendix A). Letters detailing the objectives, potential benefits, and requirements for participation in the study will be sent to school administrators. Correspondence was also sent to secure permission to introduce the study to their faculty (Appendix C). All permissions obtained for the recruitment from educational institutions and the recruitment materials used, including letters and advertisements, will be documented and provided in the study's Appendix for transparency.

A priori power analysis was conducted using G*Power to determine the minimum required sample size for the study (Faul et al., 2007). Pearson's correlation was used with power $(1 - \beta)$ set at 0.80 and significance level $\alpha = 0.05$. Using a two-tailed test and bivariate normal distribution model parameters, the power analysis indicated that a minimum required sample size of 84 participants would be needed to achieve sufficient power. This target sample size was set to mitigate the risk of type II error and ensure adequate statistical power for detecting a meaningful correlation between the variables, should one exist in the population (Cohen, 1990). The participants' selection and recruitment process has been carefully designed to ensure representation, ethical standards, and statistical validity. The study's proposed sample size, grounded in a rigorous power analysis, is poised to offer valid insights into the intricate relationship between teachers' needs-supportive practices and their students' academic achievements.

Study Procedures

To utilize the TASCQ as a survey (Appendix D), the original authors have allowed usage along the following guidelines: “Test content may be reproduced and used for non-commercial research and educational purposes without seeking written permission” (Appendix C). Upon receiving positive responses, the researcher sent further correspondence, further elucidating the research objectives, the importance of the TASCQ scores, and how they might potentially correlate with students' standardized test scores. Communiqué was essential for clarity and establishing a trust quotient with the participating teachers, ensuring they feel valued and respected throughout the process.

The next phase involved administering the TASCQ (Appendix E). The questionnaire will be delivered on a Google form that should take the participant approximately 5 minutes, allowing teachers to answer it at a time convenient for them within a stipulated window. Additionally, periodic reminders will be sent out to ensure maximum participation and to answer any emerging queries.

After collecting TASCQ scores, the subsequent phase was centered on correlating these scores with the respective standardized test outcomes of students from each participating teacher's classroom. The standardized test scores were procured with full consent, ensuring that individual student data remained confidential and was used purely for analytical purposes. The participating entities maintained open communication channels throughout the procedure. Periodic updates will be shared, and a feedback loop was created where educators can share their insights, experiences, or potential apprehensions. All materials used in the study, from the initial informational flyer to the digital version of the TASCQ and the communication templates, will be meticulously collated and available in the Appendix for reference. This comprehensive

documentation ensures that another researcher wishing to replicate or build upon this study can do so with a clear roadmap.

Instrumentation and Measurement

The primary tool for this study will be the Teachers' Assessment of Students' Cognitive Qualities (TASCQ) questionnaire (Appendix F). This tool has been previously utilized to evaluate educators' perspectives on their students' cognitive qualities, and the present study seeks to utilize it in assessing needs-supportive teaching practices. The TASCQ is a comprehensive instrument designed to gauge teachers' perceptions of their students' cognitive qualities, including their motivation, effort, and abilities in learning. The questionnaire encompasses multiple-choice questions, Likert scale questions, to extract quantitative data.

In terms of validity, the TASCQ has exhibited both face and content validity in past research. The instrument's items have been devised based on theoretical foundations and previous empirical studies on teaching practices and cognitive qualities. This ensures that the questions capture the intended constructs and resonate with the experiences of educators Ahn et al. (2018) analyzed the reliability, validity, and factor analysis of the TASCQ The following represents their findings.

Reliability

The Cronbach's alpha reliability was high for Autonomy-Supportive Structure (.86), and Involvement (.83) with the whole sample. The TASCQ boasts a strong Cronbach's alpha coefficient, a measure of internal consistency, which in previous studies has ranged between 0.80 and 0.87, suggesting that the questionnaire provides consistent results across various contexts and samples. It is worth noting that any instrument, including the TASCQ, might offer slightly

different reliability figures depending on the sample and context, but past research indicates its robustness (Ahn et al., 2018).

Validity

Structural Equation Modeling indicated significant relations between TASCQ scales and students' needs, supporting the validity of TASCQ scores. The model fit was good (χ^2 (97, N = 697) = 371.824, $p < .001$; CFI = .942; NNFI = .928; GFI = .931; RMSEA = .064, 90% confidence interval [CI] = .057, .071; SRMR = .040). For example, teacher autonomy-supportive structure was related positively to students' autonomy ($\gamma = .39$, $p < .001$), and involvement was related positively to students' competence ($\gamma = .44$, $p < .001$) and relatedness ($\gamma = .54$, $p < .001$).

Factor Analysis

EFA: The final model explained 48.23% of the variance and comprised two factors, Autonomy Support and Structure were combined (8 items; referred as Autonomy- Supportive Structure); Involvement (5 items) was separate. Factor loadings ranged from .48 to .87. CFA: The two-factor model provided a good fit (χ^2 (64, n = 350) = 163.192, $p < .001$; CFI = .947; NNFI = .936; GFI = .932; RMSEA = .067, 90% confidence interval [CI] = .054, .079; SRMR = .044). All items were significant ($p < .001$) and factor loadings ranged from .50 to .84.

Standardized Test Scores

In addition to the TASCQ, the study leveraged students' standardized test scores to measure academic achievement. These scores offer a quantifiable metric to gauge the impact of teachers' needs-supportive practices on student performance. While standardized test scores are widely accepted as reliable indicators of academic success, it is imperative to consider external factors like socioeconomic status, school resources, and students' overall health, which might also influence the results (Bloem et al., 2023; Ntoumanis et al., 2020). All instruments, including

the TASCQ and any additional materials created or adapted for this study, will be stored in the Appendix to provide a transparent and accessible resource for further reference.

In sum, the chosen instrumentation for this study, primarily the TASCQ, has been selected due to its proven reliability and validity in capturing teachers' perceptions of their students' cognitive qualities. By pairing this with standardized test scores, the study hopes to draw robust and reliable insights into the relationship between needs-supportive teaching practices and academic outcomes.

Operationalization of Variables

For the current study on the correlation between teachers' perceptions, as measured through the Teachers' Assessment of Students' Cognitive Qualities (TASCQ) questionnaire, and their students' standardized test scores, the operationalization of the variables is crucial. This allows for a clear understanding of each variable's nature and ensures that each is measured accurately.

TASCQ Scores – The TASCQ score is a ratio variable representing teachers' perceptions of their students' cognitive qualities. It will be measured by the total score achieved on the TASCQ questionnaire, with higher scores indicating a more favorable perception of the student's cognitive abilities. Past research, such as the study by Jones (2010), has utilized this scoring method, affirming its validity and reliability.

Standardized Test Scores – This variable is also a ratio variable and represents students' academic performance. It will be gauged through the aggregate scores students achieve in standardized tests. The higher the score, the better the academic performance. Standardized test scores are a commonly used metric in education research and provide an objective measure of student achievement.

The operationalization of these variables ensured that the study captured the intricacies of the relationship between teachers' perceptions, their experience and training, and the subsequent academic results of their students. Through the TASCQ scores and standardized test results, a multifaceted view of the educational landscape emerges, offering rich insights into the classroom dynamics and beyond.

Data Analysis

For this research, the investigation pivots on two primary research questions that revolve around the Teachers' Assessment of Students' Cognitive Qualities (TASCQ) questionnaire and students' outcomes on standardized test scores. The data analysis process will be tailored to address these questions and extract relevant insights specifically. The first part of the analysis directly addressed the initial question: Does a teacher's TASCQ score impact student standardized test scores? Here, a correlation analysis will be employed. This method helped identify if there is a linear relationship between the two sets of scores. For instance, is there a trend where higher TASCQ scores from teachers correspond with better student outcomes on standardized tests? The strength and direction of this relationship could then be discerned.

Should a significant correlation be identified, a regression analysis will further be employed to quantify the extent to which variations in TASCQ scores can explain variations in standardized test outcomes. This step is crucial in gauging the predictive power of TASCQ scores concerning students' performance. Moving on to the second research question, which hinges on the different realms within SDT that might have a more pronounced impact on scores, the study categorized TASCQ scores based on the distinct realms or dimensions of SDT. An individualized Pearsons correlation test was conducted on each pillar of SDT against standardized test scores. The analytical approach, firmly rooted in rigorous statistical

methodologies, is tailored to provide a comprehensive understanding of the dynamics between teacher perceptions, as gauged through the TASCQ, and student performance on standardized tests. By addressing both the overarching relationship and the nuances brought in by specific SDT realms, the research will fill existing gaps in the literature and shed light on the intricate web of factors that underpin academic outcomes.

Delimitations, Assumptions, and Limitations

Delimitations

The study, by design, has specific boundaries that have been intentionally set. Firstly, the focus is primarily on the correlation between teachers' TASCQ scores and students' standardized test results. This delimitation excludes potentially influential factors like classroom environment, school infrastructure, or socio-economic factors that might also impact student performance. The choice to study this population, teachers assessed through TASCQ and their corresponding students, is another demarcation. This decision was rooted in generating insights into a previously under-researched connection, extending the academic discourse in this domain. The selected age group or educational level of students would also serve as a delimitation, allowing the research to be more focused but potentially limiting its generalizability to broader age groups or educational levels.

Assumptions

Several assumptions were made for this study. One primary assumption was that the TASCQ scores reflect a teacher's perception and capability in assessing student cognitive qualities. It is also assumed that the standardized test scores accurately represent student academic prowess without any anomalies. Furthermore, another assumption was the belief that teachers, when filling out the TASCQ, did so honestly and without bias, ensuring the data's

integrity. The study also operated under the assumption that any external factors (like test-day conditions for students) remain consistent and, hence, will not skew the test results.

Limitations

While every effort has been made to ensure the research's robustness, some inherent limitations persist. The research design, primarily correlational, highlights associations but does not conclusively prove causation. There is also a potential for response bias from teachers, who might provide socially desirable answers on the TASCQ rather than absolute truths. Despite efforts to ensure consistent test-taking environments, individual differences like a student's state of mind on test day or personal issues cannot be controlled, potentially affecting their standardized test performance. The study's generalizability might also be limited if the sampled population does not adequately represent the larger teacher-student community. While this study offered a fresh perspective on the correlation between TASCQ scores and standardized test results, readers and future researchers must approach the findings with an understanding of its boundaries, assumptions, and inherent limitations. Such a stance ensures that the conclusions drawn are well-informed and contextual, paving the way for further research that can validate or build upon these initial findings.

Summary

In summarizing Chapter 3, the methodology employed in the research has been extensively detailed, providing insights into the structured approach adopted for the investigation. The focus has been on understanding the relationship between teachers' TASCQ scores and their students' subsequent performance on standardized tests. Essential elements, from participant selection to data analysis methods, were outlined to ensure transparency and clarity. This robust methodological framework is poised to elicit findings that could bridge the existing

gaps in this domain as this study transitions to Chapter 4, titled "Results." The gathered data's intricacies will be unraveled. The patterns, correlations, or anomalies will be presented, interpreting the study's initial objectives against the backdrop of empirical evidence.

CHAPTER 4: RESULTS

Overview

The purpose of this quantitative correlational study was to explore if and to what extent teachers' self-reported needs-supportive teaching practices correlate to the academic outcomes of their students, as indicated by standardized test scores. It is not known if and to what extent teachers' self-report needs-supportive teaching practices correlate to the academic outcomes of their students, as indicated by standardized test scores. This gap in research is supported by recent studies addressing a need for more teacher subjective data (Haw et al., 2021), tying that data to objective data sets like standardized test scores (Mendoza et al., 2022) and general studies exposing more impacts of SDT in the classroom (Ahn et al., 2021). This study was assessed using the Teacher as Social Context Questionnaire (TASCQ) and measuring against each teacher's average standardized test scores at or above the proficient level. The following research questions guided this quantitative correlational study:

RQ1: What is the relationship between teachers' self-report scores on the 'Teacher's as Social Contexts Questionnaire' and their student's standardized test scores?

H1: Teacher TASCQ scores will positively correlate with their students standardized test scores.

RQ2: How do different aspects of SDT (autonomy, competence, and relatedness) as measured by the 'Teacher's as Social Contexts Questionnaire' individually correlate with students' standardized test scores?

H2: Different aspects of SDT (autonomy, competence, and relatedness) as measured by the TASCQ, will impact scores differently.

Data was collected from a sample of K-12 teachers in the Southwest Missouri region. Participants completed the TASCQ, a validated instrument assessing needs-supportive teaching practices aligned with SDT. In addition, standardized test scores were obtained for students in each participating teacher's classroom. The collected data were then subjected to a series of statistical analyses, including descriptive statistics, correlation analysis, regression analysis (if applicable), and an individualized Pearson’s correlation test against each pillar of SDT.

The initial phase of the study I sent an email (Appendix A) to the selected school district seeking consent to engage with their educational personnel and procure access to the necessary academic data. The affirmative response from the site was accompanied by a provision of a comprehensive list of educators fitting the study's criteria for the 2022-2023 academic period. Subsequently, a Google Form encompassing the TASCQ (Appendix E), alongside an integrated consent form (Appendix F), was meticulously structured, featuring a segmented layout with each domain of inquiry allocated to discrete subsequent pages.

After getting permission to contact 53 teaching professionals, I sent them an invitation email (Appendix B) to start the outreach. This correspondence delineated the study's objectives and assured the educators of the stringent confidentiality protocols governing their participation, which remained entirely voluntary. Accompanying this explanatory note was a link directing the invitees to the aforementioned Google Form.

This chapter presents the results of these analyses, organized into several key sections. First, the data collection process is described, including recruitment procedures, response rates, and data cleaning techniques. Next, descriptive statistics are provided to characterize the sample and summarize the distributions of TASCQ scores and standardized test scores. The results of the correlation analysis are then presented, examining the overall relationship between needs-

supportive teaching and student achievement. If a significant correlation is found, regression analysis results are also reported, quantifying the extent to which TASCQ scores predict variation in test scores.

The chapter then delves into the individualized Pearson's correlation test results for each pillar of SDT for hypothesis 2, comparing the impact of different SDT dimensions on student achievement. This analysis provides insight into the relative importance of autonomy, competence, and relatedness support in predicting standardized test scores. Post-hoc comparisons are included to pinpoint specific differences between SDT dimensions.

Finally, the chapter concludes with a summary of the key findings and how they address the study's research questions. The results are briefly discussed in light of the original hypotheses, setting the stage for a more in-depth interpretation and discussion in Chapter 5. By presenting the study's results in a clear, organized manner, this chapter lays the foundation for understanding the complex relationship between needs-supportive teaching and student achievement. The findings offer valuable insights into the role of SDT in educational contexts and provide a basis for practical recommendations to enhance teaching practices and support student success.

Descriptive Results

Preparation of Raw Data for Analysis

This study leveraged dual data streams, encompassing an online questionnaire designed to capture the nuanced dynamics of teachers' perceptions as framed by the Teacher's as Social Contexts Questionnaire (TASCQ) and a compilation of the participating educators' classroom averages regarding the proportion of students meeting or surpassing the proficiency threshold in standardized test scores. The initial expectations for the sample size were lower than the target

sample size due to several factors. Firstly, the study was confined to a specific geographical region, focusing on K-12 teachers in Southwest Missouri. This geographical limitation inherently restricted the pool of potential participants. In addition, the pool was further restricted once I was informed that the acquisition would be limited to one location due to current social sensitivity to individual teacher standardized test scores.

Secondly, the study's inclusion criteria, such as the requirement for participants to be certified teachers with at least one year of experience and teaching subjects with standardized test scores, further narrowed the eligible population. Additionally, the voluntary nature of participation and the need for informed consent might have led to a more conservative estimate of the expected sample size. The lower-than-expected sample size had significant implications for the study's statistical power and the risk of type II errors. Statistical power refers to the probability of correctly rejecting a null hypothesis when it is false. In other words, it is the likelihood of detecting a true effect or relationship when it exists. A smaller sample size reduces statistical power, making it more challenging to identify significant relationships or differences, even if they are present in the population.

Consequently, the risk of type II errors, also known as false negatives, increases with insufficient power. A type II error occurs when a researcher fails to reject a null hypothesis that is actually false. In the context of this study, a type II error would mean concluding that there is no significant relationship between teachers' needs-supportive practices and student test scores when, in reality, such a relationship does exist.

The meaningfulness of the correlation between variables, despite the smaller sample size, depends on several factors. While a larger sample size generally enhances the reliability and generalizability of the findings, it is essential to consider the strength and direction of the

observed correlations. In this study, no significant correlations were found between the total TASCQ scores and student test scores (RQ1) or between the individual dimensions of autonomy, competence, and relatedness and test scores (RQ2). However, the absence of statistical significance does not necessarily imply that the relationships are meaningless. The observed correlations, albeit non-significant, can still provide valuable insights and serve as a foundation for future research.

It is crucial to interpret the results cautiously, considering the limitations imposed by the sample size. The non-significant findings might be attributed to insufficient power rather than a true lack of relationship between the variables. Further research with larger sample sizes and more diverse populations could help clarify the nature and strength of these relationships.

Ultimately, the initial expectations for the sample size were lower than the target due to geographical constraints, inclusion criteria, and the voluntary nature of participation. This smaller sample size reduced statistical power and increased the risk of type II errors. While the observed correlations were not statistically significant, they can still offer valuable insights and serve as a basis for future investigations. Researchers should interpret the results cautiously, acknowledging the limitations and the need for further research with larger and more representative samples to gain a more comprehensive understanding of the relationships between needs-supportive teaching practices and student academic outcomes.

The recruitment endeavor yielded a completion rate that surpassed initial expectations. Out of the 53 instructors approached, 31 engaged fully with the online questionnaire, culminating in a participation rate of 58%. The data accrued from these submissions were systematically aggregated within a Google Sheets repository and subsequently ported into a Microsoft Excel workspace for enhanced manipulation and preparatory analysis. Concurrent

with this process was the acquisition of standardized test score data, reflective of each participant's pedagogical efficacy as measured by the percentage of their student body achieving proficiency. The district's administrative records furnished these scores for the state-mandated assessments and were meticulously synchronized with the corresponding TASCQ responses via an anonymized coding system to ensure participant anonymity.

The forthcoming descriptive statistical synthesis will endeavor to elucidate the foundational characteristics of the assembled dataset. This analysis includes a granular breakdown of demographic distributions, a detailed exposition of TASCQ score dispersion, and a preliminary overview of standardized test score ranges. The subsequent analytical chapter will pivot to inferential statistical methodologies, with the intent to interrogate the postulated associations between the articulated dimensions of needs-supportive teaching and the academic proficiency exhibited by students.

Demographics of the Sample

This section delineates the demographic landscape of the participant pool, albeit with a focus on professional attributes rather than personal demographic details, due to the scope of data collected.

Educational Background

The educational qualifications of the participating teachers span a spectrum from Bachelor's degrees in education to Doctorates of Education (Ed.D). This diverse academic composition encapsulates a range of expertise and scholarly exposure, offering a rich backdrop for evaluating the implications of educational attainment on the Teacher’s as Social Contexts Questionnaire (TASCQ) outcomes.

Grade Levels and Subjects Taught

The study encompasses educators who cater to a broad academic range, from grade 3 through grade 12. This variation in grade levels provides a panoramic view of educational experiences across the critical phases of primary and secondary education. Within this bandwidth, the subjects taught by the respondents are confined to English Language Arts (ELA) and Social Studies, pivotal disciplines within the academic curriculum that engage students in critical thinking and comprehension—skills that are directly assessed in standardized testing scenarios. The inclusion of teachers from these two core subject areas allows for an exploration of TASCQ responses in the context of literacy and humanities education, potentially reflecting distinct pedagogical approaches inherent to the subject matter.

Descriptive Statistics

This section presents the descriptive statistics of the sample, focusing first on the three critical dimensions of the Teacher's as Social Contexts Questionnaire (TASCQ): Autonomy, Competence, and Relatedness. These statistics serve to elucidate the baseline characteristics of the participating teachers, offering insights into the variability and central tendencies of their responses. Understanding these distributions is essential for interpreting the subsequent inferential analyses.

Table 1

Descriptive Statistics for the Three Critical Dimensions of TASCQ Survey

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Mean Std. Error	Std. Deviation Statistic	Variance Statistic
Autonomy Score	31	16.00	22.00	38.00	31.5161	.66214	3.68665	13.591
Competence Score	31	11.00	25.00	36.00	30.8387	.44745	2.49128	6.206
Relatedness Score	31	8.00	32.00	40.00	38.0968	.38620	2.15027	4.624
Valid N (listwise)	31							

Autonomy

In the realm of autonomy, the data reflects a spectrum of self-perceptions among the teachers, with a 16-point range indicating varied experiences in promoting autonomous learning. The minimum recorded score of 22 suggests that at least one educator perceived a lower capacity for fostering autonomy, while the maximum score of 38 reflects a significantly higher perception of autonomy-supportive practices among others. The mean autonomy score, situated at approximately 31.52, and coupled with a standard deviation of 3.69, signals a central tendency for teachers to rate themselves positively in autonomy, albeit with notable dispersion. Such variability invites reflection on the factors that may contribute to these differences, such as teaching style, professional development experiences, or classroom demographics.

Competence

Competence, as gauged by the TASCQ, displays a convergence of perceptions with a range of 11 points. The minimum score of 25 and a maximum of 36 denote a tighter clustering of teacher responses. The mean competence score hovers around 30.84, with a standard deviation of 2.49, depicting a relatively consistent self-assessment across the sample. This test result could suggest that teachers in this study share a similar level of confidence in their abilities to deliver

curriculum and manage classroom dynamics effectively. However, even within this consistency, the range of scores speaks to an underlying diversity in perceived competence that could be influenced by various individual or institutional factors.

Relatedness

The relatedness scores present the most homogenous set of data, with an 8-point range, indicating a commonality in the teachers' experiences of fostering a sense of belonging and connection within their classrooms. The scores plateau at a high with a minimum of 32 and reach the ceiling at 40, conveying a uniformly strong endorsement of relatedness by the respondents. The mean score for relatedness stands prominently at 38.10, and the small standard deviation of 2.15 underscores a consensus among teachers about the importance and presence of relatedness in their educational settings. Such findings could point to a pervasive recognition within the teaching profession of the significance of student-teacher relationships and the communal aspects of learning environments. In Chapter 5, the shortcomings of the autonomy, competence, and relatedness scores on a self-report and how this could be better handled for future studies will be outlined.

Summarizing the Descriptive Analysis for the TASCQ Survey

Together, these descriptive statistics provide a foundational landscape from which inferential analyses will seek to uncover more profound narratives. While the mean scores suggest an overall positive self-view among teachers regarding the SDT-related constructs, the ranges, and standard deviations reveal nuances that merit further investigation. For instance, are the variations in autonomy and competence scores linked to teacher training, years of experience, or school culture? Moreover, the exceptional consistency in relatedness scores raises questions

about whether this construct is more universally understood and valued across different educational contexts.

As the study progresses into the inferential analysis phase, the descriptive results will act as signposts, directing attention to the areas of greatest variation and uniformity. The subsequent examinations will attempt to parse out whether these individual dimensions of teaching practices, as measured by the TASCQ, hold any statistical significance in relation to student performance metrics. The forthcoming analyses will not only interrogate the presence of such associations but will also explore their magnitude and direction, providing a richer understanding of the intricate interplay between educator behaviors and student outcomes.

Descriptive Statistics of Standardized Test Scores

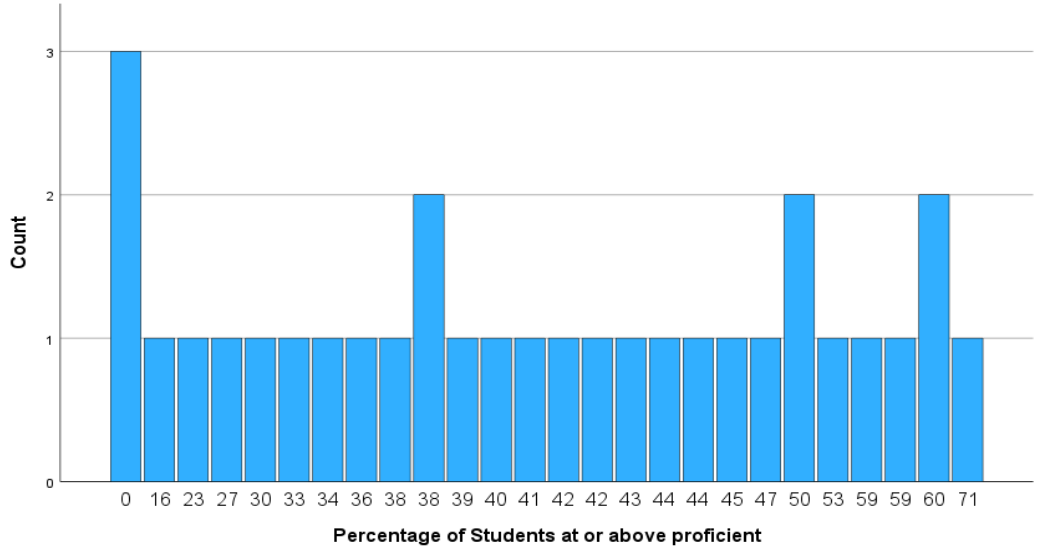
Upon inspection into the performance outcomes of students, it becomes imperative to visualize the distribution of standardized test scores across the classrooms involved in this study. The following histogram offers a graphical representation of the percentage of students achieving at or above the proficiency level on their standardized tests. This visualization serves not just to complement the numerical data previously discussed but to provide an intuitive grasp of the distribution and spread of the test scores within the diverse educational contexts from which the sample is drawn.

The histogram lays out the frequencies of classrooms at varying levels of student proficiency, ranging from those where no students reached the proficiency benchmark to those where a substantial majority surpassed it. By examining the shape and spread of the scores as depicted graphically, one can glean insights into the central tendencies and variabilities that raw numbers alone may obscure. Such a visual depiction is crucial for understanding the underlying patterns in the data, which can inform both the interpretation of the current findings and the

direction of future research endeavors. The histogram shown below should be considered within the context of the broader educational landscape, taking into account the myriad factors that influence student achievement. The disparities and trends evident in the histogram will be discussed following its presentation, offering an analytical narrative that moves beyond mere statistics to encompass the educational realities that these figures represent.

Figure 1

Distribution of Standardized Test Scores in the Sample



The histogram of the percentage of students at or above proficient on standardized tests presents a visual depiction of the score distribution across the 31 classrooms represented in the study. The x-axis shows the range of proficiency percentages, while the y-axis indicates the number of classrooms (count) falling into each percentage interval. Immediately noticeable from the histogram is the asymmetrical distribution of the scores, with a concentration of classrooms clustered towards the lower end of the proficiency scale. This concentration of classroom outcomes is evidenced by the taller bars on the left side of the histogram, which represent a greater number of classrooms with fewer students achieving proficiency. In contrast, the right

side of the histogram—corresponding to higher proficiency percentages—displays a more sporadic distribution, with fewer classrooms achieving these higher performance levels.

The presence of a classroom with 0% proficiency is a particularly stark data point, indicating a potential outlier or a classroom facing significant challenges. On the opposite end, a classroom achieving 71% proficiency represents the upper bound of student achievement within the sample. The variability between these extremes is substantial, suggesting diverse educational experiences and outcomes within the same district or population.

The mode of the distribution appears to be within the lower proficiency intervals, suggesting that the modal classroom has a relatively small percentage of students meeting or exceeding the proficiency benchmark. This distribution could reflect systemic issues, teaching practices, socioeconomic factors, or a combination of influences that might warrant further investigation. The lack of symmetry in the histogram also points to a skew in the data, with a tail extending towards the higher percentages. This skewness indicates that while most classrooms have a lower percentage of students achieving proficiency, there are a few with exceptionally high performance, potentially skewing the mean towards the higher end. Again, Chapter 5 will review the issues presented in this study for future studies to build upon.

Study Findings

The exploration of the data collected in this study is rooted in quantitative analysis, employing statistical methods to test the hypotheses derived from the two principal research questions. The analytical journey begins with the application of Pearson correlation, a statistical measure that captures the degree and direction of linear association between two continuous variables. This method was selected for its ability to quantify the strength of the relationship between teachers' self-perceived efficacy as captured by the Teacher’s as Social Contexts

Questionnaire (TASCQ) scores and the academic outcomes of their students, specifically their performance on standardized tests.

Findings for each research question are presented in a structured format. Initially, the study dissects the data pertaining to Research Question 1 (RQ1), which probes the overarching relationship between the teachers' TASCQ scores and their students' standardized test scores. Here, it was anticipated that the study would uncover trends that align with the theoretical framework, which posits a positive correlation between these variables. Following this, the study delves into Research Question 2 (RQ2), which takes a granular approach to examine how different facets of Self-determination theory (SDT)—autonomy, competence, and relatedness, as individually measured by the TASCQ—correlate with students' standardized test scores. This nuanced analysis illuminates the distinct impact each component may have on student achievement, providing a more detailed understanding of the interplay between specific teacher behaviors and educational outcomes.

Each research question is addressed in its dedicated subsection to ensure clarity and facilitate a thorough comprehension of the study's findings. Within these subsections, the analysis unfolds in a logical sequence, beginning with a clear statement of the related hypothesis, followed by a detailed presentation of the statistical outcomes. These outcomes are encapsulated in tables and supported by figures where appropriate, offering both a numerical and visual representation of the results. The interpretation of the data is provided to contextualize the statistical findings within the broader educational landscape, and implications are drawn to highlight the significance of these findings in relation to existing research and practical applications. By adhering to this systematic approach, the study findings section will not only

convey the results of the statistical analyses but also to provide a narrative that bridges the gap between data points and the real-world implications of the research.

Research Question 1

Hypothesis 1: Teachers' TASCQ scores will positively correlate with their students' standardized test scores.

A Pearson correlation analysis was conducted to investigate the proposed relationship outlined in Hypothesis 1. The goal was to discern the strength and direction of the association between teachers' overall scores on the Teachers as Social Contexts Questionnaire (TASCQ) and the percentage of their students who scored at or above proficient on standardized tests.

Statistical Analysis Summary:

The Pearson correlation analysis revealed that there was not a significant relationship between teachers' TASCQ scores and the percentage of their students at or above proficient in standardized test scores, $r(29) = -.012$, $p = .947$.

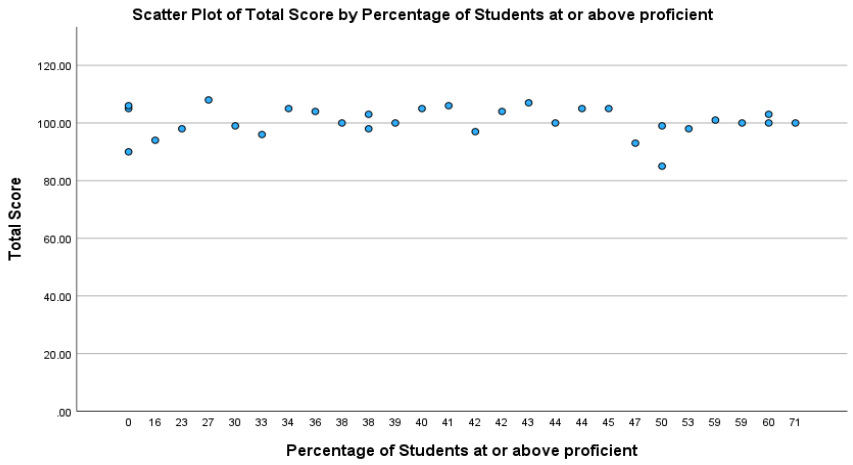
Table 2

Pearson Correlation Between Teacher Total TASCQ Scores and Standardized Test Scores

	N Statistic	Sig. (2-tailed)	Pearson Correlation
Percentage of students at or above proficient	31		1
Total Scores	31	.947	-.012

Figure 2

Scatter Plot of Total Score by Percentage of Students at or Above Proficient



The Pearson correlation coefficient (r) for the relationship between the total TASCQ scores and the percentage of students achieving proficiency was found to be -.012. This coefficient suggests a negligible inverse relationship, which stands in contrast to the hypothesized positive correlation. Furthermore, the significance (p-value) of this correlation was .947, far exceeding the traditional alpha threshold of .05, indicating a lack of statistical significance in this result. This immediate lack of statistical significance is not only important for Hypothesis 1, but also for Hypothesis 2.

Research Question 2 (RQ2) Findings

Hypothesis 2: Different aspects of SDT (autonomy, competence, and relatedness), as measured by the TASCQ, will impact scores differently.

Statistical Analysis Summary: Pearson correlation analyses were conducted to evaluate the relationships between each aspect of SDT (autonomy, competence, and relatedness) and the percentage of students at or above proficient on standardized tests.

Autonomy

In examining the dimension of autonomy within the framework of Self-determination theory, the Pearson correlation analysis was employed to ascertain the relationship between teachers' autonomy scores from the Teacher's as Social Contexts Questionnaire (TASCQ) and the percentage of their students achieving proficiency or above on standardized tests. The results indicated a negligible correlation, $r(29) = .041$, $p = .828$, suggesting no significant linear relationship between the perceived autonomy-supportive teaching practices and the standardized test performance of students. This minuscule positive correlation coefficient is statistically non-significant, indicating that variations in teachers' autonomy scores are not predictably associated with variations in student test scores within the sample studied.

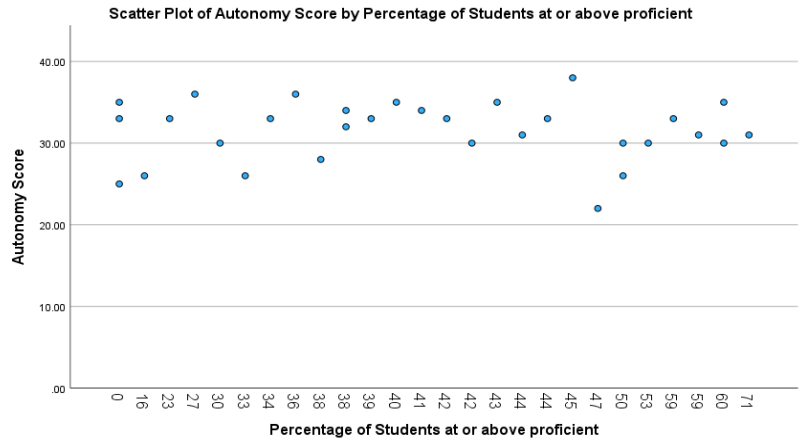
Table 3

Pearson Correlation Test for Autonomy and Standardized Test Scores

	N Statistic	Sig. (2-tailed)	Pearson Correlation
Percentage of students at or above proficient	31		1
Total Scores	31	.828	.041

Figure 3

Scatterplot of Autonomy Score by Percentage of Students at or Above Proficient



Competence

The investigation into the competence dimension as outlined by self-determination theory yielded an interesting statistical insight. Employing the Pearson correlation to probe the relationship between teachers' self-reported competence scores from the Teacher's as Social Contexts Questionnaire (TASCQ) and the percentage of students reaching or exceeding the proficiency threshold on standardized tests produced a weak negative correlation, $r(29) = -.027$, $p = .883$. This coefficient points to an inverse, albeit very slight, relationship where higher levels of teacher-perceived competence do not align with increased student performance on standardized tests. The non-significant p-value accentuates the likelihood that this weak correlation is a result of random chance rather than a definitive trend across the population.

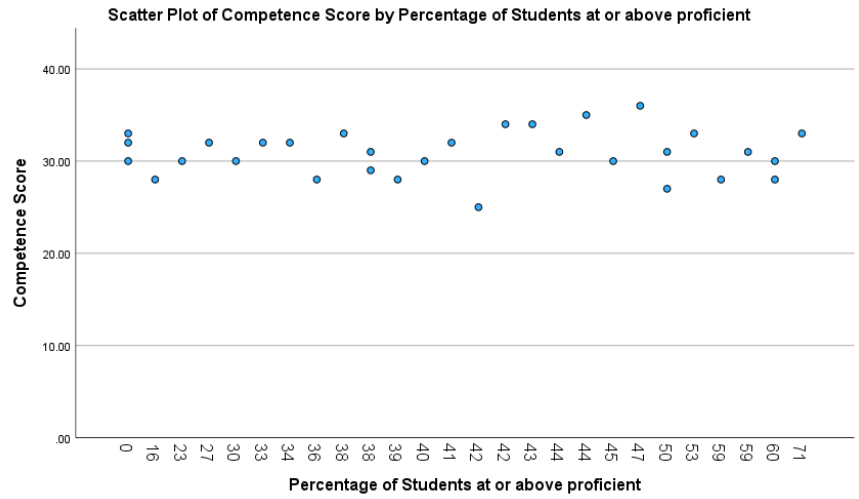
Table 4

Pearson Correlation Test for Competence and Standardized Test Scores

	N Statistic	Sig. (2-tailed)	Pearson Correlation
Percentage of students at or above proficient	31		1
Total Scores	31	.883	-.027

Figure 4

Scatterplot of Competence Score by Percentage of Students at or Above Proficient



Relatedness

The assessment of the relatedness component, a core element of self-determination theory, involved a statistical analysis to discern its connection with student outcomes on standardized tests. The Pearson correlation conducted between the relatedness scores from the Teacher's as Social Contexts Questionnaire (TASCQ) and the percentage of students scoring at or above proficient indicated a weak negative correlation, $r(29) = -.068$, $p = .717$. This result suggests a slight tendency for classrooms with higher perceived relatedness to have lower percentages of students achieving proficiency, although the relationship is notably weak and the correlation does not achieve statistical significance.

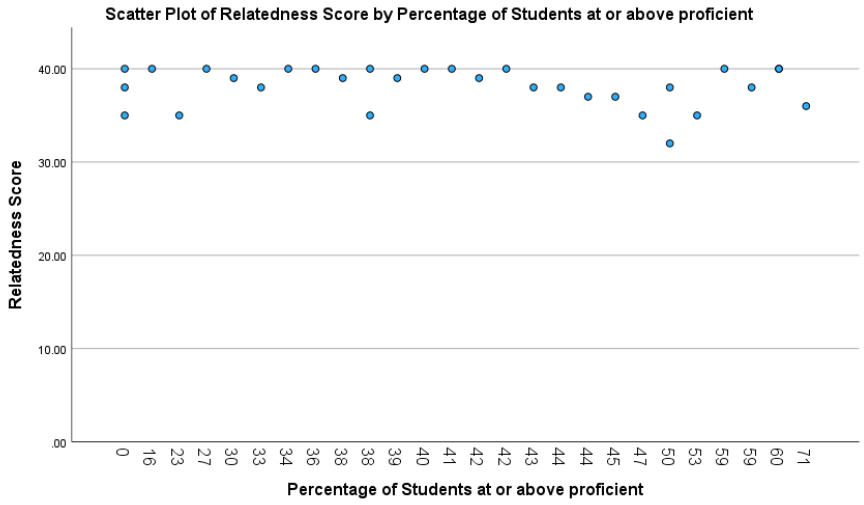
Table 5

Pearson Correlation Test for Relatedness and Standardized Test Scores

	N Statistic	Sig. (2-tailed)	Pearson Correlation
Percentage of students at or above proficient	31		1
Total Scores	31	.717	-.068

Figure 5

Scatterplot of Relatedness Score by Percentage of Students at or Above Proficient



Summary

In summarizing the findings related to the hypotheses presented in this study, one can draw upon the collective insights gained from the analysis of the Teacher's as Social Contexts Questionnaire (TASCQ) scores and their relationship with student performance on standardized tests. Hypothesis 1 posited a positive correlation between teachers' TASCQ scores and the percentage of their students achieving proficiency on standardized tests. The data did not support this hypothesis; the Pearson correlation analysis yielded a correlation coefficient of $r(29) = -.012$ with a p-value of .947, which is not statistically significant. This finding suggests that the overall impact of teachers' perceived social context on student proficiency, as measured by standardized

testing, may not be as direct or influential as initially theorized, specifically on standardized test scores. It challenges the assumption that higher scores on the TASCQ, indicative of a supportive teaching environment, are necessarily associated with improved student standardized test outcomes. Instead, the relationship between these factors appears to be complex and potentially influenced by a multitude of variables not captured within the scope of the TASCQ.

Hypothesis 2 explored the individual aspects of self-determination theory—autonomy, competence, and relatedness—and their correlations with students' standardized test scores. The analyses for each component revealed weak and non-significant correlations: autonomy ($r(29) = .041$, $p = .828$), competence ($r(29) = -.027$, $p = .883$), and relatedness ($r(29) = -.068$, $p = .717$). These findings suggest that the constructs of autonomy, competence, and relatedness, as perceived by teachers and operationalized through the TASCQ, do not exhibit a significant linear relationship with the measure of student success utilized in this study. While these constructs are theoretically linked to positive educational outcomes, their isolated effects were not evident in the context of standardized test performance within this sample.

The overall summary of these findings points to a more nuanced understanding of the interaction between teacher behaviors, as conceptualized by the TASCQ, and student achievement. While previous research and theoretical frameworks within the realm of self-determination theory emphasize the importance of these constructs in fostering student engagement and achievement, the present study's results imply that the dynamics of educational success are complex and may not be fully represented by standardized test scores. The absence of significant correlations directs attention to other potential factors affecting student achievement, including teaching methodologies, assessment practices, and the broader socio-educational environment.

Moreover, these findings underscore the need to consider the limitations of standardized tests as the sole indicators of student learning and achievement. They invite educators, policymakers, and researchers to reflect on alternative assessment methods that capture a more holistic picture of student learning—one that includes cognitive, emotional, and social dimensions. In doing so, future research can unravel the intricate tapestry of influences that define educational outcomes, ensuring a more comprehensive approach to evaluating and enhancing teaching and learning within schools.

In Chapter 5, the findings of this study will be dissected to illuminate what can and cannot be concluded. Additionally, the direction future researchers ought to take when grappling this concept is further illuminated. Finally, a full summary of the study itself and how it impacts the field is reviewed.

CHAPTER 5: DISCUSSION

Overview

The purpose of this quantitative correlational study was to explore if and to what extent teachers' self-reported needs-supportive teaching practices correlate to the academic outcomes of their students, as indicated by standardized test scores. This study was assessed using the Teacher as Social Context Questionnaire (TASCQ) and measuring against each teacher's standardized test scores. This chapter will discuss the conclusions that can be drawn from the data collected, some limitations of the study itself, and a general discussion about both the implications of the outcome and future research.

Summary of Findings

The research explored quantitatively to uncover the relationship between teachers' perceptions of their teaching environments—as measured by the Teacher's as Social Contexts Questionnaire (TASCQ)—and student performance on standardized tests. Central to this inquiry were the constructs of self-determination theory (SDT): autonomy, competence, and relatedness, and their potential impact on academic achievement. This study culminates in a nuanced understanding of the relationships between teacher-reported SDT-related teaching practices and student standardized test performance. Contrary to the propositions of Hypothesis 1, the investigation did not uncover a significant correlation between the overall TASCQ scores and the percentage of students achieving proficiency ($r(29) = -.012$, $p = .947$), suggesting that the supportive teaching context, as teachers perceive it, might not directly influence standardized test outcomes within the sample collected. The result stood firm even when dissecting the TASCQ into its constituent SDT aspects—autonomy, competence, and relatedness.

None of these dimensions displayed a significant relationship with student test performance within the sample collected, with correlation coefficients of $r(29) = .041$, $p = .828$ for autonomy; $r(29) = -.027$, $p = .883$ for competence; and $r(29) = -.068$, $p = .717$ for relatedness, respectively. The consistency of these non-significant findings across all SDT domains under examination prompts a deeper reflection on the multifaceted nature of educational achievement and the possible constraints imposed by standardized testing to measure such achievement. While theoretically influential, the dynamics encapsulated by the TASCQ may interact with student outcomes in ways not captured by standardized test scores alone.

Finding 1: General Relationship Between TASCQ Scores and Student Standardized Test Scores

The first significant finding of this study was the lack of a statistically significant correlation between the overall TASCQ scores and the percentage of students achieving proficiency on standardized tests, $r(29) = -.012$, $p = .947$. This result was unexpected, given the theoretical link between supportive teaching practices and student academic success, suggesting that other factors not captured by the TASCQ may play a more crucial role in influencing standardized test outcomes.

Finding 2: Autonomy and Standardized Test Performance

The analysis revealed a negligible and non-significant correlation between teachers' scores on autonomy and student test scores, $r(29) = .041$, $p = .828$. This finding challenges assumptions about the direct influence of autonomy-supportive teaching on student standardized test achievement, highlighting the complexity of translating autonomous learning environments into measurable academic success.

Finding 3: Competence and Standardized Test Performance

Similarly, competence scores exhibited a weak negative correlation with student standardized test scores, $r(29) = -.027$, $p = .883$. This score indicates that teachers' perceptions of their ability to foster competence among students do not directly correlate with improved test performance, suggesting that the conceptualization and measurement of competence might require further refinement.

Finding 4: Relatedness and Standardized Test Performance

Lastly, the study found a weak negative correlation between relatedness scores and student proficiency levels, $r(29) = -.068$, $p = .717$. This outcome prompts a reevaluation of the role that relatedness, or the quality of teacher-student relationships, plays in the context of standardized testing, pointing to the need for a broader understanding of educational achievement. These findings collectively point to a nuanced narrative that diverges from the hypothesized positive impacts of SDT constructs on student performance on standardized tests. They underscore the multifaceted nature of educational success and the limitations of standardized tests as the sole measure of such success.

Discussion of Findings

Contextualizing Findings within Existing Research

The outcomes of this investigation present a nuanced perspective on the interaction between teacher practices, as conceptualized through SDT, and student performance on standardized tests. Contrary to the anticipated positive correlations outlined by Deci and Ryan (2000), this study did not find significant relationships between the constructs of autonomy, competence, relatedness, and academic achievement as measured by standardized test scores. This divergence prompts a critical examination of standardized test scores to accurately measure

student success, as success in educational environments is more about continual growth from various starting points rather than a standard end achievement by all.

Several studies have highlighted the positive impact of autonomy-supportive teaching on student engagement and achievement (Cheon et al., 2023; Niemiec & Muñoz, 2019). However, these studies often employ diverse measures of academic success, including grades, student self-reports, and teacher assessments, which may capture a broader spectrum of academic achievement than standardized tests. Additionally, universal screening for skill or knowledge acquisition, measured several times throughout the year, might be a stronger link as motivation has more to do with personal growth than meeting standard end goal. The reliance on standardized test scores in the current study potentially narrows the scope of academic success, possibly overlooking areas where SDT-aligned practices exert more pronounced effects.

Moreover, the emphasis on individual autonomy, competence, and relatedness within the classroom environment aligns with the broader educational push toward personalized learning experiences that cater to individual student needs (Tomlinson & McTighe, 2006). However, the findings suggest that translating these personalized practices into quantifiable improvements in standardized test performance is more complex. This discrepancy underscores the complex web of factors influencing student achievement and highlights the potential limitations of standardized assessments as comprehensive measures of educational success.

Theoretical Contributions

This study's findings contribute to the theoretical discourse surrounding SDT in education by illuminating the gaps between theory, practice, and assessment. While SDT posits that satisfying students' basic psychological needs enhances learning outcomes, the specific context of standardized testing challenges this assertion. The lack of significant correlations may

indicate that autonomy, competence, and relatedness constructs, as operationalized through the TASCQ, do not directly translate to the skills and knowledge assessed by standardized tests.

The results call for a broader conceptualization of academic achievement that encompasses cognitive skills and the psychological and social dimensions of learning. They suggest that future theoretical models should consider the diverse ways in which teacher practices impact student outcomes, potentially extending beyond the confines of traditional assessment methods. This study underscores the importance of developing assessment tools and educational strategies that more accurately reflect the comprehensive nature of student learning and achievement, as SDT advocates.

Integrating the Biblical Perspective

The integration of biblical principles with the findings from this study offers a unique lens through which to view the role of teacher practices in student achievement. The biblical emphasis on individual growth, community, and stewardship resonates with the SDT autonomy, competence, and relatedness constructs. For example, the biblical call to cultivate each individual's gifts (1 Peter 4:10) parallels the SDT focus on supporting autonomy and competence in learners. However, the weak correlations observed in this study between these constructs and standardized test scores prompt reflection on the nature of achievement and the values that underpin educational success.

The findings invite educators and researchers to consider a holistic view of student growth that aligns with biblical teachings—valuing academic proficiency and moral and spiritual development. This perspective challenges the prevailing emphasis on standardized testing, suggesting that true educational success encompasses a broader range of outcomes, including character formation, relational skills, and the ability to navigate life's challenges with wisdom

and integrity. The critical takeaway from integrating the biblical perspective is the call to view education as a transformative process that seeks to develop the whole person. This study contributes to a growing dialogue about re-envisioning educational assessment and practice in a way that honors each student's unique journey and reflects a more comprehensive understanding of human flourishing.

Implications

Theoretical Implications

This study's findings provoke important reflections within the theoretical domain, particularly concerning self-determination theory (SDT) and its application in educational settings. The absence of significant correlations between the SDT dimensions of autonomy, competence, and relatedness and the standardized test performances of students calls into question the direct translatability of SDT's psychological needs into academic success metrics. This discrepancy suggests that while SDT provides a robust framework for understanding motivation and engagement in learning contexts, its constructs may interact with student achievement in ways not readily captured by traditional standardized testing methods. The findings invite scholars to reconsider the pathways through which autonomy, competence, and relatedness influence learning outcomes, potentially highlighting the role of intermediate variables such as student well-being, classroom climate, or engagement strategies not directly assessed by standardized tests.

Moreover, the results underscore the necessity for a broader theoretical dialogue that integrates SDT with other educational theories, such as constructivism or the theory of multiple intelligences, to create a more comprehensive model of student learning and achievement. Such integration could offer insights into how teacher practices and student psychological needs

interact within diverse educational landscapes. Additionally, this study highlights the critical need for developing alternative assessment strategies that align more closely with SDT principles. By emphasizing holistic measures of student growth, including emotional, social, and creative competencies, educators and researchers can better capture the full spectrum of student achievement, moving beyond the confines of traditional academic metrics.

Practical Implications

From a practical standpoint, the study's findings have significant implications for educators, school leaders, and policymakers. The lack of a significant relationship between SDT-aligned teaching practices and standardized test outcomes suggests that educational stakeholders should critically evaluate the reliance on standardized testing as the primary measure of academic achievement. This evaluation should consider students' diverse talents and abilities, many of which may not be adequately represented in standardized test scores. Consequently, educators are encouraged to adopt a multifaceted approach to assessment that values formative assessments, student reflections, and project-based learning as complementary measures of student understanding and growth. Such approaches align more closely with SDT's emphasis on fulfilling students' psychological needs and provide a richer, more nuanced picture of student learning.

For policymakers and educational leaders, the study calls for systemic changes supporting diverse teaching and assessment strategies. This suggestion includes policies that encourage innovation in curriculum design, reduce the emphasis on high-stakes testing, and allocate resources for teacher professional development to foster classroom autonomy, competence, and relatedness. Furthermore, the findings suggest that school systems should prioritize the creation of learning environments that support students' holistic development,

recognizing the importance of psychological well-being, social connection, and intrinsic motivation as integral components of educational success. In bridging theory and practice, this study catalyzes dialogue among educational practitioners, researchers, and policymakers about the nature of teaching, learning, and assessment. By acknowledging the limitations of standardized tests and exploring alternative methods that resonate with SDT principles, the educational community can better support the diverse needs and potentials of all students, fostering environments where every learner has the opportunity to thrive.

Limitations

A rigorous methodological approach guided the pursuit of understanding the relationship between teachers' perceptions of their teaching environments and student achievement on standardized tests through the lens of self-determination theory (SDT). However, as with any empirical study, this research was subject to certain limitations that may influence the interpretation and generalizability of the findings. The social stigma surrounding using individual teacher test scores is a complex issue that poses significant challenges for researchers seeking to investigate the relationship between these scores and teaching practices (Dizon-Ross, 2018). The root of this stigma lies in the high-stakes nature of standardized testing and how test scores have become a central measure of teacher effectiveness in recent years (Baker et al., 2010; Darling-Hammond et al., 2012). In an era of increased accountability and public scrutiny of the education system, teachers often feel that their professional reputations and job security are directly tied to their students' performance on standardized tests (Ingersoll et al., 2016; von der Embse et al., 2016).

This pressure is compounded by the fact that test scores are often used as a critical metric in teacher evaluations and as a basis for making high-stakes hiring, firing, and promotion (Baker

et al., 2013; Goldhaber & Hannaway, 2004). As a result, many teachers experience significant anxiety and stress related to the use of their test scores, even when these scores are being examined in the context of academic research (von der Embse et al., 2016, 2017). This anxiety can lead to a reluctance among teachers to participate in studies that involve the analysis of their scores, as they may fear that any adverse findings could have severe consequences for their careers (Gonzalez et al., 2017).

In the case of this particular study, the challenges posed by the social stigma surrounding individual teacher test scores were evident from the outset. When approaching the first site to participate in the study, it was necessary to conduct several meetings to establish clear protocols for protecting teacher and district identities and to determine which tests would be used in the analysis. The site administrators ultimately agreed to assist in the study and provide the necessary data. However, they made it clear that no other sites in the southwest Missouri area would participate due to the sensitive nature of the data, and the need to maintain trust within their professional networks.

The administrators' concerns about the participation of other sites highlight how the social stigma surrounding individual teacher test scores can limit the scope and generalizability of research in this area (Gonzalez et al., 2017). While the administrators at the participating site were willing to provide the necessary data, they also emphasized the importance of maintaining confidentiality and removing all personal information from the dataset before releasing to myself to analyze. This additional protocol underscores the trust and assurance required for schools to feel comfortable participating in studies that analyze individual teacher test scores (Gonzalez et al., 2017).

The reluctance of other sites to participate in the study can also be understood in the context of the ongoing national teacher shortage (García & Weiss, 2020). With many schools struggling to attract and retain qualified teachers, educators may have a heightened sense of competition and fear that any adverse findings related to their test scores could harm their job prospects (Sutcher et al., 2016). This anxiety is further exacerbated by the fact that, in an era of limited resources and high-stakes accountability, schools may be more inclined to rely on test scores to assess teacher effectiveness (Baker et al., 2013; Goldhaber & Hannaway, 2004).

It is important to note, however, that while the fear of termination based solely on test scores may be overstated (Baker et al., 2013), the anxiety surrounding the use of these scores in evaluations and public discourse is genuine (von der Embse et al., 2016, 2017). Teachers are acutely aware of how test scores can be used to judge their effectiveness and inform decisions about their employment and advancement (Ingersoll et al., 2016). As a result, even the prospect of participating in a study that analyzes individual test scores can be a source of significant stress and concern (Gonzalez et al., 2017).

Given these challenges, it is not surprising that this study's sample size and scope were greatly limited. Despite the best efforts of the researchers to establish trust and ensure confidentiality, the social stigma surrounding individual teacher test scores made it challenging to secure the participation of multiple sites (Smith & Holloway, 2020). However, while the data obtained from the participating site may not be generalizable to other contexts, it still provided valuable insights into the need for a clear relationship between standardized test scores and 'needs-supportive' teaching practices in the classroom.

Ultimately, the challenges encountered in this study underscore the need for researchers to be sensitive to the social and political contexts in which their work is conducted (Gonzalez et

al., 2017). When dealing with issues as sensitive as individual teacher test scores, it is essential to establish clear protocols for protecting participant confidentiality and to be transparent about how data will be used and reported (Smith & Holloway, 2020). At the same time, it is essential to recognize that the social stigma surrounding these scores is not simply a methodological obstacle to be overcome but a reflection of deeper issues related to accountability, teacher evaluation, and the public discourse surrounding education reform (Baker et al., 2010; Darling-Hammond et al., 2012; Ingersoll et al., 2016).

Sample Size and Diversity

One of the primary limitations was the relatively small sample size of 31 teachers, which constrains the statistical power of the analyses conducted. While this number allowed for initial exploration, larger samples would provide a more robust basis for detecting minor effects and ensuring the findings' representativeness. Furthermore, the sample was drawn from a single school district, limiting the diversity of educational contexts and potentially influencing the generalizability of the results. Future research would benefit from a broader demographic and geographic representation to capture the variability across educational settings and explore how regional or institutional differences may impact the relationships studied.

Measurement and Scope of Constructs

Another limitation lies in operationalizing the SDT constructs—autonomy, competence, and relatedness—using the Teachers as Social Contexts Questionnaire (TASCQ). While the TASCQ is a validated instrument, its ability to capture the full complexity of these psychological needs and their manifestation in teaching practices may be limited. The reliance on teacher self-reports also introduces the possibility of social desirability bias, as teachers may perceive and

report their practices in a manner that aligns with normative expectations rather than their actual behaviors.

Moreover, the study focused exclusively on standardized test scores as the measure of student achievement, which, while objective and quantifiable, may only encompass part of the spectrum of learning outcomes valued in education. Standardized tests primarily assess cognitive and academic skills, potentially overlooking areas such as creative thinking, problem-solving, and socio-emotional development, which are also critical components of a comprehensive educational experience. This limitation points to the need for employing a broader array of outcome measures that reflect the multifaceted nature of student learning and success.

Cross-sectional Design

The study's cross-sectional design, while suitable for exploring the existence of correlations, does not permit causal inferences. The temporal sequence between teacher practices and student outcomes cannot be definitively established, leaving the question of causality open. Longitudinal studies or experimental designs would provide deeper insights into how changes in teaching practices influence student achievement over time and could clarify the directionality of the relationships observed.

Additional Limitations

In analyzing the data and interpreting the results, a further limitation emerged related to the potential influence of unmeasured variables. Factors such as classroom resources, student motivation, parental involvement, and socioeconomic status may play significant roles in mediating the impact of teaching practices on student achievement. The current study did not account for these variables, which could offer additional explanations for the lack of significant findings and highlight areas for future investigation.

Recommendations for Future Research

While illuminating certain aspects of the relationship between self-determination theory (SDT) constructs as perceived by teachers and student standardized test performance, the insights garnered from this study also open avenues for further inquiry. Given the limitations and the nuanced findings, the following recommendations are proposed to guide future research endeavors in this domain. Future studies should include a more extensive and diverse sample of teachers and schools. An expanded sample size would enhance the statistical power of the analyses, allowing for a more refined detection of effects that might be present but needed to be discernible in this study due to sample constraints. Additionally, incorporating teachers from various geographic regions, school types (e.g., public vs. private, urban vs. rural), and educational levels (elementary, middle, and high school) would offer richer insights into how different contexts influence the applicability and effectiveness of SDT-aligned teaching practices.

Future research should consider employing longitudinal methodologies to address the limitations associated with the cross-sectional design of the current study. Tracking changes in teacher practices and student outcomes over time would facilitate a deeper understanding of the causal relationships and the dynamics of how SDT constructs impact student learning and achievement. Moreover, integrating qualitative methods, such as interviews or classroom observations, with quantitative analyses could provide a more comprehensive view of how autonomy, competence, and relatedness are manifested in teaching practices and perceived by students, shedding light on how these constructs influence educational outcomes. They utilize a qualitative study could also inspect teachers perceptions on test scores and student learning.

Broader Range of Outcome Measures

Additionally, future studies should explore additional indicators of student success. These could include measures of student engagement, motivation, well-being, creativity, and social-emotional skills, among others. By adopting a more holistic approach to assessing student outcomes, researchers can capture the multifaceted nature of educational success and better evaluate the impact of SDT-aligned teaching practices across different domains of student development. Additionally, finding objective measurements that take growth into account could be better indicators of internal motivation for individuals.

Incorporation of Mediating and Moderating Variables

Given the complex interplay between teaching practices, student characteristics, and educational outcomes, future research should examine potential mediating and moderating variables that could influence the relationships studied. This interplay includes exploring factors such as classroom climate, teacher-student relationships, student intrinsic motivation, parental involvement, and socio-economic status. Investigating these variables could provide valuable insights into the conditions under which SDT constructs are most strongly associated with positive educational outcomes and identify strategies for optimizing teaching practices to support student achievement.

Exploration of Teacher Professional Development Programs

The findings of this study suggest a need to investigate further the role of teacher professional development in fostering SDT-aligned teaching practices. Future research could examine the effectiveness of specific training programs in enhancing teachers' ability to support autonomy, competence, and relatedness in the classroom. Studies could also explore how

professional development initiatives impact teacher perceptions and behaviors over time and, in turn, how these changes influence student motivation, engagement, and academic performance.

Summary

This study embarked on a quantitative exploration to unravel the intricate relationships between teachers' perceptions of their instructional environments, as framed by self-determination theory (SDT), and students' academic achievement measured through standardized test scores. Despite the theoretical anticipation of positive correlations between the SDT constructs of autonomy, competence, and relatedness and student performance, the empirical findings did not support these hypotheses. The absence of significant relationships across these dimensions suggests a complex interplay between teaching practices and student achievement that extends beyond the confines of standardized assessments.

These findings have two implications. Theoretically, they challenge existing assumptions within SDT about the direct impact of autonomy-supportive, competence-enhancing, and relatedness-fostering teaching practices on standardized measures of academic success. Practically, they underscore the limitations of relying solely on standardized tests to gauge educational outcomes and call for a broader, more nuanced understanding of student achievement. This research highlights the need for further investigation into alternative assessment methods and a more holistic approach to education that aligns with the SDT principles and the multifaceted nature of learning.

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APPENDIX A: SITE APPROVAL FOR SURVEY

Location:

Name of Approver:

Role:

Contact information:

Phone:

Email:

After reviewing the proposed study, *"Needs-supportive Teaching and its Impact on Standardized Test Scores in Southwest Missouri Schools"*, presented by *Ed Barlow.* I have granted authorization to recruit participants for (his/her) study within Carthage R-IX School District.

I understand the purpose of the study is to understand how the use of needs-supportive teaching practices does or does not impact standardized test scores.

I have indicated to *Ed Barlow* that Carthage R-IX will allow the following recruiting activities:

- Recruit: via physical or electronic communication
- Conduct a survey via online methods
- Allocate standardized test scores of responding teachers.
- Obtain and de-identify participants' demographic data to potentially include in their study.

The participants that will be in this Quality Improvement project must meet the following criteria:

INCLUSION CRITERIA (list all inclusion criteria)

- certified K-12 teachers actively employed during the study
- at least one year of teaching experience
- willingness to participate voluntarily and provide informed consent is essential

EXCLUSION CRITERIA:

- no substitute or part-time teachers
- less than a year of experience
- teachers unwilling to provide informed consent or uncomfortable sharing their TASCQ scores

Recruitment of participants who will participate in the survey is not mandatory, only voluntary.

The district does not have an Institutional Review Board, and learner understands they need to get an “IRB Determination Letter” before recruiting. The learner also understands that the district will not send/post the recruitment letter for him/her, so the learner is responsible for emailing/posting the recruitment letter.

I understand that the name of this district will not be used in any publications or presentations and that Ed Barlow will protect data to the best of his ability.

If the IRB has any concerns about the permission being granted by this letter, please contact me by (phone or email preference of site granting permission).

Sincerely,

Name:
Title:
Email:
Phone:

**********END**********

APPENDIX B: INDIVIDUAL APPROVAL TO USE TASCQ SURVEY

Dear Potential Participant,

As a graduate student in the School of Behavioral Science at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The title of my research project is 'Needs-supportive Teaching and its Impact on Standardized Test Scores in Southwest Missouri Schools,' and the purpose of my research is to observe any impact needs-supportive teaching may have on standardized test scores.

Participants must be 18 years of age or older, a classroom teacher with at least one year of experience who teaches a subject that obtains standardized test scores. Participants will be asked to take an online survey. It should take approximately 5-10 minutes to complete the survey. Names and other identifying information will be requested as part of this study to match survey data and test scores, but participant identities will not be disclosed.

A consent document is provided on the first page of the survey. The consent document contains additional information about my research. If you choose to participate, you will need to indicate on the survey.

Sincerely,

Ed Barlow
Ph.D. Candidate

APPENDIX C: TASCQ OWNERSHIP

PsycTESTS®

Teacher as Social Context Questionnaire

PsycTESTS Citation:
Belmont, M., Skinner, E. A., Wellborn, J., & Connell, J. (1988). Teacher as Social Context Questionnaire [Database record]. Retrieved from PsycTESTS. doi: https://dx.doi.org/10.1037/t10488-000

Instrument Type:
Inventory/Questionnaire

Test Format:
The TASC-Q consists of 24 items on a scale from 1 (completely disagree) to 5 (completely agree).

Source:
Leenknecht, Martijn J. M., Wijnia, Lisette, Loyens, Sofie M. M., & Rikers, Remy M. J. P. (2017). Need-supportive teaching in higher education: Configurations of autonomy support, structure, and involvement. Teaching and Teacher Education, Vol 68, 134-142. doi: https://dx.doi.org/10.1016/j.tate.2017.08.020, © 2017 by Elsevier. Reproduced by Permission of Elsevier.

APPENDIX D: TASCQ QUESTIONNAIRE

TASCQ Questionnaire

Items

Autonomy support
1. I give my students a lot of freedom in how they organize their study materials.
2. I listen to my student's ideas.
3. It seems like I'm always telling my students what to do.
4. I allow my students to make choices about organizing their study materials.
5. I listen to my student's opinions.
6. I take time to explain how my students can use the things I teach in my class in their lives.
7. I am always disciplining students for how they organize their study material.
8. I don't explain why what my students do in school is important to them.

Competency support
9. I make it clear what is expected in my class.
10. If my students cannot solve a problem, I show them different ways to try to.
11. I respond differently every time my students do something wrong.
12. I don't tell my students what I expect of them.
13. I check whether my students are ready before I start a new topic.
14. I keep changing how I respond to my students.
15. I show my students how to solve problems.
16. I make sure my students understand before I move on.

Relatedness support
17. I know my students well.
18. I just don't understand my students.
19. I talk with my students.
20. My students can't count on me with they need me.
21. I like my students.
22. I spend time with my students.
23. I really care about my students.
24. My students can't depend on me for important things.

Note. The response scale ranged from 1 (completely disagree) to 5 (completely agree).