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## The Impact of Student-Teacher Relationships, Content Knowledge, and Teaching Ability on Students with Diverse Motivation Levels

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## Research Article

# The impact of student-teacher relationships, content knowledge, and teaching ability on students with diverse motivation levels<sup>1</sup>

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### Abstract

The purpose of this research study was to explore the impact effective teacher characteristics have on student motivation within the classroom in order to inform Education Preparation Programs (EPPs) with further knowledge regarding how to support and train future teachers. Specifically, this study sought to (1) determine differences in effective teacher characteristics as perceived by students with diverse motivation levels, (2) determine if relationships exist between effective teacher characteristics, self-efficacy, incremental beliefs, and the degree of student motivation, and (3) determine if teacher content knowledge, (b) teaching ability, and (c) student-teacher relationships significantly predict the degree to which a student is motivated. Results showed that there was a statistically significant difference in student motivation when students perceived that a) strong student-teacher relationships were present, b) high content knowledge of a teacher was exhibited, and c) exemplary teaching ability was displayed. Data from this study adds to the body of literature that encourages EPPs to train teachers to become expert leaders by incorporating effective characteristics needed to improve teaching and learning required of today's 21<sup>st</sup> century schools.

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# Öğrenci-öğretmen ilişkileri, öğretmenlerin alan bilgisi, ve öğretim yeteneğinin farklı motivasyon düzeyine sahip öğrenciler üzerine etkisi

## Öz

Bu çalışmanın amacı, Eğitime Hazırlık Programları'nı, geleceğin öğretmenlerini nasıl eğitip destekleyebileceğine ilişkin bilgilendirmek açısından, etkili öğretmen özelliklerinin sınıf içinde öğrenci motivasyonu üzerindeki etkisini araştırmaktır. Mevcut çalışma, spesifik olarak, (1) farklı motivasyon düzeyine sahip öğrencilerin gözünden etkili öğretmen özelliklerindeki değişkenlikleri, (2) etkili öğretmen özellikleri, öz-yeterlik, marjinal inançlar, ve öğrencilerin motivasyon düzeyi arasındaki olası ilişkileri, (3) öğretmenlerin (a) alan bilgisi, (b) öğretim yeteneği, ve (c) öğrenci-öğretmen ilişkilerinin öğrencilerin güdülenme düzeylerini anlamlı bir şekilde yordayıp yordamadıklarını belirlemeyi amaçlamaktadır. Sonuç olarak, öğrenciler öğrenci-öğretmen ilişkisinin kuvvetli olduğunu, öğretmenlerin alan bilgisinin yüksek olduğunu ve örnekleyici öğretmen yeteneklerinin sergilendiğini algıladıkları zaman öğrencilerin motivasyon düzeyinde istatistiksel olarak anlamlı farklılık bulunmuştur. Çalışmadan elde edilen veriler, günümüz 21. yüzyıl okullarının gereksinim duyduğu eğitim-öğretimin geliştirilmesi için gereken etkin özelliklerin bir araya getirilmesiyle, Eğitime Hazırlık Programları'nın öğretmenleri uzman liderlere dönüştürmesini teşvik etmesi bakımından alanyazına katkılar sunmaktadır.

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**Anahtar kelimeler**  
öğrenci motivasyonu  
etkili öğretmenler  
öğretim yeteneği  
öğrenci-öğretmen ilişkileri

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## Introduction

A renewed interest in teacher preparation reform has been directly voiced by The Council for the Accreditation of Educator Preparation (CAEP) but indirectly voiced by the new assessment portfolio through edTPA, which demands more rigorous goals and standards from universities who are preparing today's teachers (Heafner, McIntyre, & Spooner, 2014; Stanford Center for Assessment, 2014). Maintaining an enriched learning environment as well as a knowledge of a variety of strategies are both emphasized by CAEP and edTPA (Fulgini, Howes, Huang, Hong, & Lara-Cinisomo, 2012). Quality teachers must exhibit an ability to manage a classroom, create an atmosphere where learning can take place, and increase student academic achievement (Klassen et al., 2013).

Accounting for recent achievement gaps, educational researchers have given much attention over the years to recognizing qualities of effective teachers as well as determining which teacher characteristics are vital in order to create a successful teacher leader. There is a large body of literature that defines a teacher leader as a teacher that emphasizes improving classroom instruction (Danielson, 2007; Patterson & Patterson, 2004; Suwaidi & Schoepp, 2015). Danielson (2007) stated that "teacher leaders aim to improve teaching and learning" (p. 16). This attention to teacher leadership can inform district leaders, future educators and EPPs about what teachers should exhibit in the classroom.

Liu and Meng (2009) concluded that "students value specific teacher characteristics and among the characteristics students outlined were teaching ability, adequate content knowledge, and positive student-teacher relationships" (p. 319), yet often times, they are not present in the classroom. These three characteristics consistently show up in literature surrounding what makes a good teacher (Lui & Meng, 2009; Teddlie & Reynolds, 2000; Samples & Copeland, 2013; Wilkins, 2014). Vlad and Ciascai (2014) stated, "students see the teacher as a person with a complex role, not only as a simple information providing tool" (p. 2), thus in order to maximize learning, teachers must value this complex role set forth and desired by students and exhibit these vital characteristics as necessary. Given the impact teachers have in the classroom as leaders, the aim of this research study was to explore the impact effective teacher characteristics have on student motivation within the classroom in order to inform Education Preparation Programs (EPPs) with further knowledge regarding how to support and train future teachers.

### Student behavior

For the purpose of this study, Bandura (1986) and Herzberg (1968) provided the framework in behavior modification, which served as the groundwork for student behaviors. Bandura (1986) defined self-efficacy as "personal judgments of one's capabilities to organize and execute courses of action to attain designated goals on specific tasks" (p. 39). Self-efficacy beliefs influence the amount of effort and persistence students place on completing tasks and influence positive emotional reactions. Students with high self-efficacy have less stress and anxiety and are willing to put forth more effort because they do not fear failure due to the belief that they are capable (Zimmerman, 2000). Intrinsic motivation occurs when a person participates in an activity for its inherent satisfaction (Ryan & Deci, 2000) and provides true fulfillment that comes from within (Herzberg, 1968). Extrinsic motivation occurs when a

person participates in an activity because it leads to a separate outcome (Ryan & Deci, 2000) and relates to the external environment, which can serve as a dissatisfier if not met (Herzberg, 1968). Relationships impact academic motivation of students and how a student perceives him/herself. If the student-teacher relationship is too impersonal, student motivation can be thwarted (Elliot & Dweck, 2005), which can also hinder academic motivation of the student (Wentzel, 1998). The student-teacher relationship and how comfortable the student is with the teacher are not only significantly related to understanding concepts introduced within a class but are also significantly related to how interesting the student finds the class (Kelly & Whatley, 1980).

### **Teacher behavior**

Teacher behavior is viewed through the lens of teacher leadership and the definitions surrounding the mission of a teacher leader. Suwaidi and Schoepp (2015) addressed Fay's (1992) definition of teacher leadership as a practicing teacher, who has formal preparation and schedules time for a leadership role with which to preserve the teacher mission and noted that this definition emphasizes the importance of improving teaching. Patterson and Patterson (2004) also postulated that teacher leaders emphasize improving classroom practice. Danielson (2007) stated that teacher leaders "call others to action and energize them with the aim of improving teaching and learning" (p. 16), thus describing a teacher leader as one who strengthens teaching effectiveness. Shillingstad, McGlamery, Davis, and Gilles (2015) concurred with this notion that teacher leaders improve the teaching and learning. "Effective teacher leaders draw upon their extensive knowledge of curriculum, best practices, and current research" (Shillingstad et al., 2015, p. 13).

### **Methodology**

This quantitative self-perception survey study involved middle and high school students who were invited to participate in a study to determine the impact that effective teacher characteristics have on student motivational beliefs. The target sample was considered a sample of convenience given the researcher's connection to the students. Students were sent a text that included both the purpose of the study and the survey link. Students consented to the study at the beginning of the survey. The survey was anonymous and all data was confidential. After data collection had been completed, it was determined that a total of 141 middle and high school students had volunteered to provide self-perception data regarding effective teacher characteristics and student motivational beliefs. Six questions, utilizing 11-point, Likert-scale questions (0 = terrible; 10 = amazing) were used to capture students' beliefs regarding their teachers' teaching ability, content knowledge, and student-teacher relationship for both classes in which they were highly motivated and not motivated to succeed (i.e. *Think of the classes at school, in which you are very motivated to succeed. How would you describe your teacher's content knowledge?*). Cronbach's alpha coefficients were evaluated using the guidelines suggested by George and Mallery (2016) where  $> .9$  excellent,  $> .7$  acceptable, and  $\leq .5$  unacceptable. The items measuring teacher characteristics for classes in which students were motivated had a Cronbach's alpha coefficient of 0.61. The items measuring teacher characteristics for classes in which students were not motivated had a Cronbach's alpha

coefficient of 0.73. Students' perceptions of their own self-efficacy beliefs (0 = not able at all; 10 = extremely able), incremental beliefs (0 = not at all; 10 = extremely), and overall motivation (0 = not motivated at all; 10 = extremely motivated) were each measured with one question each using 11-point, Likert-scale questions. Only one question for each of the three aforementioned constructs was used and deemed appropriate (a) in order to provide a shorter survey for students and increase the response rate and (b) because, according to Bergkvist and Rossiter (2007), single-item measures demonstrate equally high predictive validity as multi-item measures. Lastly, students were asked to self-report which teacher characteristics they valued most (i.e. teaching ability, content knowledge, or student-teacher relationship). Construct validity of the survey items was tested during a pilot study utilizing 61 college students. College students completed surveys and education faculty members reviewed the survey. Some items were edited for clarity and all items were deemed valid for the current study. Data were collected utilizing electronic surveys created through *Survey Gizmo* and then analyzed using a variety of *t*-tests, correlation analyses, and regression analyses. The following questions guided the research:

1. Is there a significant difference in the perceptions of high and low motivated students regarding (a) teacher content knowledge, (b) teaching ability, and (c) student-teacher relationships?
2. Do (a) teacher content knowledge, (b) teaching ability, and (c) student-teacher relationships significantly predict the degree to which a student is motivated?
3. Do statistically significant relationships exist between effective teacher characteristics, self-efficacy, incremental beliefs, the degree of student motivation?

## Findings

### Results to research question 1

For the middle and high school population a series of paired sample *t*-tests were conducted. The result of the first paired samples *t*-test was significant,  $t(132) = 13.25, p < .001$ , suggesting that the perceived teaching ability for teachers was significantly different for motivated and unmotivated students. The teaching ability ( $M = 7.66$ ) for teachers of highly motivated students was significantly higher than the teaching ability for teachers of unmotivated students ( $M = 4.11$ ). The results of the second paired samples *t*-test was significant,  $t(132) = 12.62, p < .001$ , suggesting that the perceived student-teacher relationships was significantly different for motivated and unmotivated students. The perceived quality of student-teacher relationships for highly motivated students ( $M = 8.09$ ) was significantly higher than the perceived quality of student-teacher relationship for unmotivated students ( $M = 4.93$ ). The result of third paired samples *t*-test was significant,  $t(132) = 10.70, p < .001$ , suggesting that the perceived content knowledge of teachers was significantly different for motivated and unmotivated students. The perceived content knowledge for teachers of highly motivated students ( $M = 8.77$ ) was significantly higher than the perceived content knowledge for teachers of unmotivated students ( $M = 6.55$ ). Tables 1, 2, and 3 outline the result of the *t*-tests comparing perceptions of motivated and unmotivated middle school and high school students regarding their teachers' effective teacher characteristics.

**Table 1.** Paired samples t-test for differences in perceived student-teacher relationships by motivated and unmotivated students

Motivated		Unmotivated		t	p	d
m	sd	m	sd			
8.09	1.95	4.93	2.66	12.62	< .001	1.35

Note: Degrees of Freedom for the *t*-statistic = 132. *d* represents Cohen's *d*.

**Table 2.** Paired samples t-test for differences in perceived teacher content knowledge by motivated and unmotivated students

Motivated		Unmotivated		t	p	d
m	sd	m	sd			
8.77	1.36	6.55	2.39	10.70	< .001	1.14

Note: Degrees of Freedom for the *t*-statistic = 132. *d* represents Cohen's *d*.

**Table 3.** Paired samples t-test for differences in perceived teaching ability by motivated and unmotivated students

Motivated		Unmotivated		t	p	d
m	sd	m	sd			
7.66	1.99	4.11	2.69	13.25	< .001	1.50

Note: Degrees of Freedom for the *t*-statistic = 132. *d* represents Cohen's *d*.

### Results to research question 2

For the purpose of answering this research question for the middle and high school population, students were placed into two groups (i.e. motivated and unmotivated) based on scores from items on the survey measuring level of overall motivation. For highly motivated middle and high school students, the results of the linear regression model were significant ( $F(6,93) = 4.26, p < .001, R^2 = 0.22$ ), indicating that approximately 22% of the variance in the level of motivation was explainable by incremental beliefs, self-efficacy, type of motivation, teacher content knowledge, teaching ability, and student-teacher relationships. Teacher content knowledge significantly predicted students' level of motivation ( $B = 0.31, t(93) = 2.51, p = .014$ ). This indicates that on average, every one unit increase of a teacher's content knowledge will result in a 0.31 unit change in a student's level of motivation. Table 4 shows these results.

**Table 4.** Results for multiple linear regression with incremental beliefs, self-efficacy, type of motivation, content knowledge, student-teacher relationships, and teaching ability predicting highly motivated students' level of motivation

Variable	B	SE	$\beta$	t	p
(Intercept)	1.79	1.35	0.00	1.33	.186
Incremental Beliefs	0.18	0.10	0.19	1.85	.067
Self-Efficacy	0.19	0.11	0.16	1.62	.108
Type of Motivation (Intrinsic)	0.27	0.29	0.09	0.94	.347
Content Knowledge	0.31	0.12	0.25	2.51	.014
Student-Teacher Relationships	0.04	0.08	0.06	0.56	.577
Teaching Ability	-0.03	0.09	-0.03	-0.30	.765

Note:  $F(6,93) = 4.26, p < .001, R^2 = 0.22$

For unmotivated middle and high school students, the results of the linear regression model were significant ( $F(6,95) = 3.49, p = .004, R^2 = 0.18$ ), indicating that approximately 18% of the variance in the level of motivation was explainable by incremental beliefs, self-efficacy, type of motivation, teacher content knowledge, teaching ability, and student-teacher relationships. Incremental beliefs significantly predicted students' level of motivation ( $B = 0.19, t(95) = 2.11, p = .037$ ). This indicates that on average, every one unit increase in incremental beliefs will result in a 0.19 unit change in a student's level of motivation. Table 5 shows these results.

**Table 5.** Results for multiple linear regression with incremental beliefs, self-efficacy, type of motivation, content knowledge, student-teacher relationships, and teaching ability predicting unmotivated students' level of motivation

Variable	B	SE	$\beta$	t	p
(Intercept)	3.97	1.02	0.00	3.88	< .001
Incremental beliefs	0.19	0.09	0.22	2.11	.037
Self-efficacy	0.22	0.11	0.20	1.96	.053
Type of motivation (Intrinsic)	0.28	0.29	0.09	0.99	.325
Content knowledge	-0.03	0.07	-0.05	-0.45	.653
Student-teacher relationships	0.05	0.07	0.09	0.71	.480
Teaching ability	0.06	0.07	0.11	0.88	.380

Note:  $F(6,95) = 3.49, p = .004, R^2 = 0.18$

### Results to research question 3

For the middle and high school population, a Pearson correlation analysis was conducted among level of motivation, incremental beliefs, self-efficacy, and effective teacher characteristics and found that all factors were significantly correlated. Results of the correlations are presented in Table 6.

**Table 6.** Pearson correlation matrix among level of motivation, incremental beliefs, self-efficacy, and effective teacher characteristics

Variable	1	2	3	4
1. Level of motivation	-			
2. Incremental beliefs	0.34***	-		
3. Self-efficacy	0.28**	0.38***	-	
4. Effective teacher characteristics	0.29**	0.35**	0.20*	-

Note: \*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$

Chronbach Alpha for effective teacher characteristics ( $\alpha = .65$ )

## Discussion

This research is grounded on the premise that a teacher leader is defined as one who improves their own teaching, thus positively impacting the learning of their students (Danielson, 2007; Patterson & Patterson, 2004; Suwaidi & Schoepp, 2015). The current study's



results further emphasized how teacher leader characteristics, if present in classrooms, can enhance student motivation, which can, in turn, positively impact achievement. Key findings from data included:

1. Motivated students had significantly higher perceptions of their teachers' effective characteristics (i.e. student-teaching relationships, content knowledge, and teaching ability) than unmotivated students did.
2. For *motivated* middle and high school students, the perception of their teacher's content knowledge was the highest predictor of the level to which they were motivated.
3. For *unmotivated* middle and high school students, the perception of their own incremental beliefs was the highest predictor of the level to which they were motivated.
4. Students' perceptions on their teacher's effective teacher characteristics (i.e. student-teaching relationships, content knowledge, and teaching ability) was significantly positively correlated to their (a) level of motivation, (b) incremental beliefs, and (c) self-efficacy beliefs.

These results provide further evidence supporting the implementation of effective behaviors by teacher leaders within the classroom. For instance, it is important to note that data from the middle school and high school population concluded that content knowledge was the highest predictor of motivation for motivated students, and how a student viewed their own ability to learn was the highest predictor of motivation for unmotivated students. Students are not only diverse in their physical demographics but also diverse in their motivational beliefs, and the level of motivation a student exhibits may determine what specific characteristics of a teacher the student values most. EPPs should help teachers recognize that students may vary in their motivational beliefs and as a result may place value on different teacher characteristics. These results can help inform EPPs as they create curriculum changes and incorporate best practices within their programs. These results add to the body of literature that encourages EPPs to train teachers to incorporate effective behaviors needed to improve teaching and learning required of today's 21<sup>st</sup> century schools. However, more research is needed to further determine which specific behaviors teachers can implement to positively impact students with various motivation levels.

## Conclusion

Becoming a teacher leader in 21<sup>st</sup> century schools requires teachers to spend more time engaged in activities that may compete with maintaining effective teacher characteristics. Thus, with such high expectations, it is vital that today's teachers have tools for improving motivation in the classroom in order to positively impact student learning (Rushton & Juola-Rushton, 2008). This study emphasized three teacher characteristics, that not only aligns with other previous literature, but specifically with Liu and Meng's (2009) study, which similarly highlighted the importance of teaching ability, adequate content knowledge, and positive student-teacher relationships" (p. 319). Teaching ability is a vital part of student success, as literature continues to confirm that teachers whose students have numerous opportunities to learn and are actively engaged are more likely to demonstrate their competence, earn higher grades, perform better in class, and have higher expectations for their own success (Ateh & Charpentier, 2014; Turner, Christensen, Kacker-Cam, Trucano & Fulmer 2014). Considering content knowledge, Shulman (1986, 1987) lead the way with the literature that identified the

importance of teacher subject-area knowledge in the classroom. Regarding relationships, Furrer, Skinner and Pitzer (2014) confirmed the importance of student teacher relationships and stated that teachers can “undermine students’ motivational needs when they interact with students in ways that are rejecting, chaotic, or coercive” (p. 108).

Apart from effective teacher characteristics, self-efficacy beliefs (Bandura, 1993; Zimmerman, 2000), intrinsic beliefs (Herzberg, 1968; Ryan & Deci, 2000), and incremental beliefs (Blackwell et al., 2007) can also influence the extent to which a student will strive towards success. If teachers can cater to the needs of diverse students on an individual level by recognizing that students are unique and by understanding that a) student motivation is related not only to the perception students have regarding teacher characteristics (Kelly & Whatley, 1980; Teddlie & Reynolds, 2000; Samples & Copeland, 2013; Wilkins, 2014), but also to the perception students have of themselves and b) that the choices students make are influenced by their beliefs (Bandura, 1986; Goodard, Hoy & Hoy, 2004; Pajares, 1996), teachers may be more successful in their attempts to motivate their students.

### **Suggestions**

Results from this study concur with other motivation literature suggesting that students are both diverse in their level of motivation as well as in their perceptions of themselves and their teachers. Data revealed that the more students perceived that their teachers had content knowledge, teaching ability, student-teacher relationships, and believed that students could succeed, the more likely students were to have higher self-efficacy beliefs relating to their ability to succeed in their classes. These results not only provide insight for EPPs but also for principals, especially in the hiring process and recruiting of quality teachers. Since students were more likely to be motivated in classrooms where teachers reflected positive attributes of teaching ability, content knowledge and student-teacher relationships, principals should make sure these attributes are evident in the teachers they hire.

It was determined that for highly motivated students, content knowledge was the factor that had the most impact on the degree to which the student was motivated. For students with low motivation, incremental beliefs were determined as the factor that had the most impact. Parents should be made aware of these differences in motivation so that at home, they may be able to further provide scaffolds that cater to the needs of their children. Specifically for unmotivated children, parents need to find ways to further communicate to their children that they are capable of learning new things. If students foster that belief both at home and at school, they may be more likely to carry those beliefs throughout difficult tasks that are provided to them.

It is recommended that teachers take time to recognize the individual level of motivation for all students and recognize into which category they fall (low or high) in order to cater to their diverse needs. This may require professional development on student motivation and strategies that are known to boost motivation. Teachers need to account for the relationships these motivational concepts have on students’ desire and ability to succeed in the classroom. If teachers strive to become more effective teachers by improving their content knowledge, teaching ability, and student-teacher relationships, students’ self-efficacy beliefs could be improved thus indirectly improving success in the classroom.

### Limitations and Future Research

Limitations were noted at the conclusion of this study surrounding the sample and methodology of the study. Given the small sample size, this study is not generalizable to a larger population outside of those who volunteered. The sample was considered a convenient sample based on those who volunteered to complete the survey. As a result, further studies need to be conducted with larger sample sizes in order to make further conclusive results.

Regarding the methodology, since the study was a self-perception study, participants were expected to be honest with their answers as well as unbiased. Participants might have been tempted to respond in a way that matched what they perceived the researcher was wanting. As a result of this limitation, this study should be replicated to further validate these results.

Participants were also asked to respond to questions as they related to classes in which they were motivated and unmotivated to succeed, with the assumption that all students have varying levels of motivations based on the task to which they are expected to complete (Ryan and Deci, 2000; Zimmerman, 2000). This was noted as a limitation as the “motivation to succeed” was not defined and left up to the discretion of the participant. Future studies should define motivation in a way that all participants are providing answers based on the same concept and definition of motivation.

This study did not explore student demographics such as culture, race, gender, and age. Students are diverse in a number of ways, thus, exploring motivation from these angles may provide further insight into how teachers might better impact students in their classroom by catering to diverse needs.

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