

# Stereotype threat and assessment in schools

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## Abstract

There is abundant evidence that demonstrates that individuals' intellectual performance is undermined in situations that remind them that they are stereotyped which is causing them to underperform (Schmader, 2010). This phenomenon has been identified as stereotype threat (ST). Research shows that students from disadvantaged minority groups experience poorer achievement outcomes than students who are provided with equal academic opportunities. In education, it is important to understand how ST affects the performance of stereotyped students (Taylor & Walton, 2011). Reminders of negative stereotypes create questions of self-perception and uncertainty about one's abilities. This process of suppressing negative thoughts and feelings manifest a fear of confirming the stereotype, which impairs cognitive ability and causes anxiety that affects performance during assessments. Fortunately, evidence suggests that value affirmation can help eliminate the negative effects of ST on assessment and learning (Taylor & Walton, 2011). However, more evidence on how to teach students to feel more competent at school is needed.

**Keywords:** *stereotype, stereotype threat, assessment, anxiety, value affirmation, minority groups*



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## Introduction

Dismantling institutionalized barriers, in the struggle for equality, has not closed the racial and gender gaps in achievement, as these groups continue to underperform in academic settings (Schmader, 2010). Claude Steel's theory, stereotype threat (ST), provides a reason for underperformance from these groups. ST is defined as, "a disruptive apprehension about the possibility that one might inadvertently confirm a negative stereotype about one's group" (Taylor & Walton, p.1, 2015).

This critical review discusses four different case studies that examine the effects of ST in academic settings. Most of the articles found on ST were written in the United States with a limited number of studies conducted in secondary and primary education. Furthermore, studies of ST in New Zealand were not found; however, it is important to consider the implications ST has on minority groups of students, as negative attitudes towards Māori still exist (Holmes, Murachver, Bayard, 2001). This review shows ST can hold powerful implications for the individual abilities of students and help generate racial and gender differences in academic performance and assessment. For the purpose of this paper, the review will concentrate on three implications ST poses on academics and assessment.

These are: fear of confirming a stereotype, the connection between ST and anxiety and ways to help reduce ST.

## Fear of confirming stereotypes

Subtle reminders of stereotypes that presume incompetence with certain groups can create concern with confirming the stereotype and impair the ability of one performing to their potential (Schmader, 2010). ST may cause people to demandingly suppress thoughts of the negative stereotype rather than promote positive outcomes, which can lead to decreased performance (Smith & Hung, 2008). This 'threat' of confirming the negative stereotype creates questions of self-perception and uncertainty about one's abilities (Schmader, 2010). Smith and Hung (2008) highlight this idea in a study examining ST against women in maths testing. Results indicated that female students who were included in ST manipulation performed worse than females in the non-removed ST environment.

Gender based stereotype threats for women occur when there is belief that she will be judged by the stereotype that women's math ability is inferior to men's. This fear causes underperformance (Smith & Hung, 2006). Similarly, Taylor and Walton's (2011) study revealed that Black students who had studied in the ST-inducing environment defined half as many words correctly than White students; however, in non-

threatening environments, Black students outperformed the white students (Taylor and Walton, 2011). Osborne (2001) declares that students who belong to groups with a negative intellectual stereotype risk embarrassment, failure and fear of confirming the stereotype. Fighting the stereotype causes increased anxiety that leads to poor performance of students.

Unlike other studies, Osborne did not directly test if ST can undermine learning performance; but the relationship between race and anxiety to poor performance was studied. Results indicated that anxiety accounted for a significant portion of achievement test differences between African American and White students (Osborne, 2001). In addition, Osborne (2007), states that awareness of a negative stereotype increases evaluation apprehension and situational anxiety that can inhibit performance.

### **Effects of anxiety on assessment**

ST not only increases sensitivity to one's abilities, but also increases anxiety. While anxiety during a test might not be problematic if one is feeling confident, it can become a distraction when experiencing doubt (Schmader, 2010). Osborne's (2001; 2007) studies of how anxiety can create racial and gender differences in academic performance provide proof of ST. Osborne's (2001) earlier study measured the anxiety of five, different racial groups of secondary students. Students were tested on a series of timed vocabulary tests and afterwards students completed a short survey to measure anxiety. The survey asked how students felt while taking the test and included words such as: under pressure, nervous, jittery and calm. Results indicated that white students performed significantly higher and had lower anxiety scores than other students. However, Osborne posed concerns that since the results were from self-reported anxiety, this created more room for interpretation (Osborne, 2001).

In Osborne's (2007) later study, the effects of anxiety on performance were measured during assessment versus afterwards. Physiological reactivity, such as heart rate and blood pressure were measured for female and male students while they sat a Mathematics assessment under ST conditions. Similar to his previous study, the stereotyped group (females) showed inflated levels of anxiety, stress and arousal under high ST conditions and a large gap in performance between males and females, with males outperforming females. (Osborne, 2007)

While both of Osborne's studies (2001; 2007) aid in attempting to clarify the mechanism for which ST manipulates performance, there are caveats. These studies only investigated two aspects of ST, so it is important not to generalise these results to other instances such as race and age. Also, experimenter sex may have had an influence on the reactions of participants (Osborne, 2001; 2007).

In addition to anxiety creating academic achievement discrepancy, Smith and Hung (2008) express that psychological factors such as ST and low self-esteem, can also contribute to academic performance gaps. Taylor and Walton (2011) do not specifically indicate the effects of anxiety on performance, but declare that there are psychological consequences of ST, including cognitive depletion, loss of focus and increased arousal levels. Understanding the psychological and physiological effects of ST is an important factor in learning

how to improve learning for students in threatening environments.

### **Helping reduce ST: Possible solutions**

Individuals live in diverse environments; therefore, there could always be subtle reminders of social stereotypes. As a result of this, it is important to consider how to change performance conditions in schools to encourage more positive views of one's racial or gender group (Schmader, 2010). Changing ST environments could have possible effects, in the New Zealand school system, where Māori students continue to perform poorly and are perceived by their peers and teachers as being less competent students (Holmes, et al., 2001). Understanding how brief threat-reducing interventions can produce benefits in ST environments was also a part of Taylor and Walton's (2011) study. In the study, Black students were or were not assigned to complete a written exercise that served as the value-affirmation manipulation. In this exercise, students identified their most important value and its significance to them. Next, students performed in a series of non-threatening "warm-ups" and threatening "tests". Results indicated that Black students who completed the value affirmation exercise performed nearly 70% better on the threatening "test" than those Black students who did not. Taylor and Walton's (2011) results suggest that affirmation improved participants' learning by preventing stereotype suppression and supporting focus. The authors' tone is encouraging that these findings are important to the future of children's education. These findings are significant when considering the psychological processes where value-affirming interventions may improve real academic outcomes for students who experience ST; otherwise, these students may not pursue the same learning opportunities as others (Taylor & Walton, 2011).

Changing the nature of performance environments to encourage more positive views of one's group or abilities could help reduce gaps in the achievement of students (Schmader, 2010). A similar urging tone is portrayed by Smith and Hung (2008) who make clear that further research is needed to investigate whether ST is transnational and if psychological factors, such as one's ego or family structure, can have an influence on ST. There is also a need for research on how ST affects other minority groups (Osborne, 2001). In addition, the authors elaborate that minority parents can help their children by teaching them to feel competent at school. Osborne (2001) states that anything parents, schools, teachers, peers or communities can do to help undermine negative group stereotypes concerned with ability will improve academic outcomes for people of those groups. This can be achieved by teaching children that regardless of their grades, everyone is special and deserving of respect. Further, it will help children learn that what they think about themselves is more important than what the majority thinks (Smith & Hung, 2008).

Osborne (2001) also has recommendations to improve outcomes for these students by: protecting students from ST by progressing how far students have learned prior to assessment and evaluation, emphasising challenge and effort versus talent and aiding students in their notions that intelligence is not a fixed quantity, but rather, a more malleable trait. It is also important to create system level changes to undermine the

effects of ST, such as the implementation of multicultural curriculum. Osborne (2007) did not elaborate on ideas to help reduce ST in his later research, but did emphasise that ST threat research has demonstrated that minimal alterations in assessment situations can help reduce achievement gaps (Osborne, 2007). Osborne's bias and the bias of other authors from this review portray that ST effects on students' achievement during assessment in schools is an important issue that should not go unnoticed or unstudied.

## Conclusion

The threat of confirming the negative stereotype of a group that creates questions of self-perception and uncertainty about one's abilities is known as stereotype threat (ST). This review has provided evidence that ST can lead to racial and gender differences in academic performance and assessment. The studies in this review reveal that ST impairs performance (Schmader, 2010) despite socioeconomic status, academic preparation and educational opportunities (Osborne, 2001).

It is also argued that once stereotypes are established, they tend to remain stable whether one believes them or not (Holmes, et al., 2001). ST poses implications for learners as it generates underperformance by creating fear of confirming the stereotype and increasing levels of anxiety; however, research indicates that value-affirmation of stereotyped groups can help manipulate the effects of ST on learners' performance (Taylor & Walton, 2011). Negative stereotypes of priority learners, such as Māori being less competent students, could be a contributing factor in academic success and assessment. Therefore, research in New Zealand about how ST affects priority learners should be considered (Holmes, et al., 2001).

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