

Shielding Students From Stereotype Threat:

Instructional and Developmental Implications



Lizzy performs poorly in math. John does not do well on the SAT exam. Jennifer consistently achieves below-average scores on subject-area tests.¹ The performance of these students may be influenced by their own perceptions and awareness of stereotypes about what is expected of them. For example, they may have been told, “Girls are not as good as boys in mathematics,” or “African-American students do not do well on standardized tests.” In reality, these students are likely affected by a phenomenon known as “stereotype threat.”

Stereotype threat is driven by the conviction that academic performance may be judged or evaluated on the basis of culturally driven false beliefs or preconceived notions about the academic abilities of the ethnic, racial, gender, or socioeconomic group to which one belongs. These perceptions are not thoughts developed due to being overly sensitive; instead, they are established stereotypes that are often systemic and built into the fabric of a society, the perpetuation of which can limit access for certain segments of the population. Once internalized, stereotype threat may trigger anxiety or fear that one will live up to this negative stereotype, which may severely limit a student’s ability to recall important ideas, formulas, principles, or concepts within

specific content areas. Stereotype threat is experienced by students in public, private, and denominational schools (including universities/colleges) that are ethnically, racially, multiculturally, and gender diverse.

This type of threat may also lead to a diminished or weakened performance on a task that the individual believes that he or she is less able to carry out simply because of a social group to which he or she belongs.² When individuals find themselves in situations where a stereotype applies, they bear an extra cognitive and emotional burden—the possibility of confirming the stereotype, either in the eyes of others or in their own eyes.³ These experiences can lead to anxiety, which has been investigated as a possible link between stereotype threat and lower math performance by women and African Americans.⁴

Latino students are not immune from this type of threat. One of the few studies to investigate Latino elementary school-age children revealed that they performed worse on working memory tasks under conditions of stereotype threat if they were aware of the broadly held negative stereotypes about their group.⁵

When these student groups face high-stakes tests, they tend to adopt performance-avoidance goals that help them re-

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duce the possibility of failure and do not make them appear less capable than other students. For example, students attempt to reduce their chances of failure by avoiding novel and challenging tasks or by cheating.⁶ If students continue to adopt performance-avoiding goals and develop self-defeating strategies to avoid looking less intelligent, this can eventually cause them to withdraw, not care about school, exert little effort to succeed academically, or even drop out of school.⁷

Even though many education systems are becoming more diverse, students from groups that continually face negative stereotypes, prejudice, and discrimination still face barriers to their educational success. These barriers “may be the result of both actual differences in the treatment of students in the classroom, and the ability of educators to understand students and be sensitive to and inclusive in teaching styles and content.”⁸ The following examples illustrate how stereotype threat may impact students’ beliefs about their abilities.

Adverse Effects of Stereotype Threat

Cognitive Learning Factors

When stereotype threat exists in the learning environment, students’ working memory capacities may be negatively impacted. Working memory is where the mind operates on information, organizes it for storage or disposal, and through rehearsal, connects it to other stored information.⁹ Studies have confirmed that stereotype threat can reduce working memory resources, undermining the student’s ability to perform the information-processing requirements of complex intellectual tasks.¹⁰ This type of threat appears to negatively impact the speech and language components of the working memory system involved in inner speech and thinking.¹¹

Stereotype threat also has the potential to harm students’ ability to assimilate and apply academic information. One study found that when learning abstract mathematics principles, young women under stereotype threat were not able to absorb these principles as easily as others who were not under stereotype threat, and were less able to apply their learning to solving math problems.¹² Another study revealed that students under stereotype threat had less factual knowledge, and the knowledge they did have was poorly organized, making it more difficult to access. These students also spent less time thinking about and studying class material than students who had not experienced stereotype threat.¹³

‘Cued’ Stereotype Threat Factors

“Cued” stereotype threats can adversely affect individual performance on academic tests or tasks. Some cues are subtle and may only be recognized unconsciously, which means that the stereotype is not conveyed, but the task experience is manipulated by the teachers/supervisors who are administering or supervising the test or task (for example, a teacher referring to how various groups perform on tests). Cues may be recognized consciously, when differences between groups are communicated to individuals using directions and/or

context without indicating which group(s) tend to perform better than others. Blatant cues are those communicated to individuals directly through statements about alleged group inferiorities in performance and ability.¹⁴

An example of a recently cued stereotype threat is a student recognizing that for the first time in her academic experience, she is the only female in her advanced math class. This type of experience may reduce the affected individual’s self-control and impulse control, leading to changes in attention control, judgment, decision making, aggression, hostility, and even food consumption.¹⁵

Spillover Factors

When negative stereotype threat expands to affect individuals in other areas of their lives—i.e., outside the academic environment—this phenomenon is referred to as “spillover.” When spillover occurs, it negatively affects the individual’s performance on unrelated tasks because the memory resources necessary to perform those tasks are being used to manage the threat.¹⁶ Spillover occurs because the experience in the threat environment (whether school-related or work-related) was emotionally and cognitively overwhelming for the individual.¹⁷ Such threatening environments can leave students feeling depleted and less able or willing to engage in a variety of tasks requiring significant self-control.¹⁸

Creating a Christ-centered Climate for Reducing Stereotype Threat

Despite the paucity of research on the prevalence of stereotype threat in Christian schools, educational administrators, teachers, and stakeholders must continue to work collaboratively to establish instructional and social climates that will help students achieve positive learning outcomes. Espousing a philosophy that first establishes God as the “Source of all true knowledge, and the Holy Scriptures as the perfect standard of truth,”¹⁹ is foundational to the creation of a Christ-centered learning environment. A Christocentric educational philosophy emphasizes not only academic knowledge, but also the balanced development of the spiritual, intellectual, physical, emotional, and social powers of each student.²⁰

An important facet of this philosophy is the relational dimension, which focuses on developing and sustaining genuine social interactions among students, school personnel, and parents, as well as church and community leaders. Such interactions help create caring learning communities that are vital to the energy and life of educational institutions.²¹

Stereotype threat cannot be sustained in learning environments in which everyone, “including teachers, students, and parents feel a sense of belonging and connectedness to each other. It is when everyone is treated with kindness, respect and helpfulness. It is when everyone has a mutual sense of responsibility.”²² In such environments, unconditional love permeates the fabric of relationships, diversity is

celebrated, the needs of learners are fulfilled, and quality instruction is provided for every student who experiences difficulty in achieving his or her learning goals.²³

The relational dimension of education is well illustrated by the way that Christ was able to connect at the deepest level with humankind: Ellen White wrote that “in every human being He discerned infinite possibilities. He saw men as they might be, transfigured by His grace. Looking upon them with hope, He inspired hope. Meeting them with confidence, He inspired trust.”²⁴

Christ’s method of dealing with people from stigmatized groups reflected His concern, sympathy, and love for those who were ostracized and marginalized by society. For example, Zacchaeus, a Jew and tax collector, was detested by his countrymen because his rank and wealth came as the reward of a vocation they detested, and because of its association with injustice, bribery, and extortion. However, beneath Zacchaeus’s worldly exterior beat a heart that yearned for a closer relationship with God.²⁵ Even before Zacchaeus looked upon the face of Christ, he had begun the work that made him a true penitent. Before being accused by his countrymen, he had confessed his sins.²⁶ Christ demonstrated His unconditional love for Zacchaeus by going to his home to “give him lessons of truth, and to instruct his household in the things of the kingdom.”²⁷

The biblical narrative and commentary on the woman who washed Jesus’ feet reinforces the deep love that Jesus demonstrated toward those who struggled to find acceptance from their fellowmen. Luke tells her story as follows: “When one of the Pharisees invited Jesus to have dinner with him, he went to the Pharisee’s house and reclined at the table. A woman in that town who lived a sinful life learned that Jesus was eating at the Pharisee’s house, so she came there with an alabaster jar of perfume. As she stood behind him at his feet weeping, she began to wet his feet with her tears. Then she wiped them with her hair, kissed them and poured perfume on them. When the Pharisee who had invited him saw this, he said to himself, ‘If this man were a prophet, he would know who is touching him and what kind of woman she is—that she is a sinner.’”²⁸ Christ saw in this woman great capabilities for good. He saw the better traits of her character. The plan of redemption had invested humanity with great possibilities, and in her, these possibilities were to be realized. “Through His grace she would become a partaker of the divine nature.”²⁹

Instructional Strategies for Reducing Stereotype Threat

Following Jesus’ example of offering unconditional love, hope, and affirmation, teachers and administrators can help students in Adventist schools recognize stereotypes and learn how to counter their power in the classroom by (1) creating a safe climate for learning; (2) using research-proven techniques when testing and assessing students; (3) engaging students in self-affirming activities; (4) promoting gender equality; and (5) encouraging students’ growth and self-confidence through role modeling and mentoring programs.

Creating a Safe Classroom Environment

Teachers and educational administrators have important roles to play in creating safe classroom environments where all students feel competent and cared for.³⁰ Celebrating diversity, affirming belongingness, and fostering positive and supportive relationships with and among students will help to create a classroom climate that ensures the success of all student groups.³¹ Focusing on the positives, such as noting each student’s improvement instead of the areas where he or she has performed poorly, is another way to support students suffering from stereotype threat.³² And, while support is vital, teachers can also help students overcome the harmful effects of stereotype threat by having high expectations of all students, challenging them to continuously improve, and showing belief in each one’s ability to succeed.³³

Teachers should share stories about people similar to their students who overcame adversity to achieve success.³⁴ Having students record stories from their own past, telling how they persevered in difficult circumstances, may make them more optimistic about their own ability to succeed.³⁵ Finally, teachers can provide detailed feedback on assignments by including positive observations indicating where the student has met expectations, as well as areas where he or she could improve.³⁶

Schools can also establish safe spaces (psychological and physical within the classroom or school) that are free from stereotype threats, and that provide students with a place to develop and share coping strategies.³⁷

Using Best-practices Techniques in Administering Assessment Instruments

When administering assessments, the following techniques can be used to reduce the likelihood that students will internalize stereotype threats:

1. Avoid discussing group membership (ethnicity, race, gender, etc.) or having students reveal their group membership before an assessment, as this may cue negative stereotypes³⁸;
2. Because referring to an assessment as a test of ability may trigger negative stereotypes, describe it as a measure of student learning, or as a measure of students’ problem-solving skills³⁹;
3. Be aware of the order in which the subject areas are presented, especially when students are required to complete more than one test. Research has found that girls perform worse in math if they are tested in math first. If the math test follows another test area that does not trigger a stereotype threat for them, girls perform equally to boys in both cases and better than girls who took the mathematics test first. Therefore, plan to begin testing with a subject area that will not trigger stereotype threats, then move on to those that may cue these threats. Randomized order actually appears to put girls at a disadvantage in math and math-related courses.⁴⁰

- **A teacher using different amounts of praise for the same work, depending on group membership.**

*Chris, who is of Asian descent, receives almost no praise for his excellent arithmetic test score. Tina, who is of African-American descent, receives a lot of praise for her excellent arithmetic test score.

- **Having different standards or expectations depending on group membership.**

*Meghan's homeroom table, at which she sits with some other girls in her class, gets extra computer time if they score an average of 85 percent on their next math test. Meghan finds out that the next table over, at which a small group of boys sit, must get 90 percent on the same test to get additional computer time.

- **Attributing a student's difficulty with a subject to his or her background.**

*Alex is struggling in history. His teacher suggests that he may have more difficulty than other students because his family members are immigrants.

- **Overtly or covertly referencing background or group membership when it is irrelevant to the situation. This can unconsciously trigger related stereotypes.**

*Lisa is required to provide some demographic information (including her gender and racial background) before taking a competency exam. Her friend Shelby also takes the exam, but the proctor forgets to ask her to provide demographic information. Despite having a better understanding of the material than her friend Shelby, Lisa does not pass the exam, while Shelby does.

*Sam, whose parents are from India, is sitting in his first business course when the professor makes a comment about how successful Indians are in business. Sam suddenly feels extra pressure to succeed in the course.

*Names are used for illustrative purposes only.

Teachers need to avoid using situations/texts/visuals that reinforce stereotyped roles. For example: (1) the father (working outside the home); (2) the mother (homemaker); (3) the doctor (male); (4) the nurse (female); (5) boys (proficient in science, math, and technology); and (6) girls (proficient in languages, secretarial sciences, and consumer sciences).

The curriculum should reflect the pluralistic character of society by increasing the number of female achievers depicted in the curriculum as well as in the examples cited in class. All instructional materials, whether textbooks, handouts, or workbooks, need to be evaluated to determine if they are gender biased, gender neutral, or gender-sensitive/-responsive.⁴⁶

Providing Role Models for Students

An effective strategy is to discuss women and minorities who have made significant achievements in areas where minority groups are usually negatively stereotyped or excluded.

For example, highlighting and emphasizing the contributions of women and minorities in the domains of math, science, technology, religion, philosophy, business, and the social sciences. Teachers can also use media to highlight individuals who have not succumbed to stereotypes.⁴⁷ Teachers and administrators who belong to underrepresented groups can also be effective role models in combating stereotype stress.⁴⁸ They can convey to students, through their instructional and interpersonal approaches, that they possess the potential and the capacity to accomplish their academic, social, and career goals. Church and community members and leaders from various minority groups and women in non-traditional careers can be invited as guest speakers to describe their achievements and success in combatting stereotypes.

Providing Mentors

Providing students with mentors is another evidence-based method of countering stereotype threats. This type of intervention can be particularly helpful for students who suffer from group-targeted stereotype threats; that is, is the fear that if their performance matches stereotypical expectations, they will have further confirmed biased perceptions relating to the entire group.⁴⁹ Mentors help reduce stereotype threat because they have succeeded in fields where such prejudices exist. Teachers can also identify older students who are achieving well academically and who would be willing to mentor their students. They can then match these more mature students

Engaging Students in Self-affirming Activities

Engaging students in self-affirmation activities can help to shield them from the effects of harmful stereotype threats. The protective nature of self-affirmation is especially important for "self-targeted" stereotypes,⁴¹ which involve the perception that if one's performance fits a group stereotype, the performance will also reflect poorly on the individual.⁴² One strategy that has been shown to improve student performance on stressful academic events is to schedule a brief (15-minute) writing task just before the event, during which the students tell why a positive skill, talent, value, or belief that they possess is important to them.⁴³

Students have achieved both short-term and long-term performance improvements after completing this activity. Teachers can further enhance student performance by reading these essays and affirming individual students on their strengths.⁴⁴

Applying Gender Neutral Teaching Skills in Classrooms

Teachers, as leaders in the classroom, should apply instructional skills that reflect gender awareness and gender equality. Within this framework, all students need to gain experience in a variety of task roles. This may be achieved by (1) rotating tasks in each group; (2) frequently changing the group membership; and (3) developing other methods that can shatter or dismantle social structures or expectations designed to exclude certain groups.⁴⁵

with younger ones from the same cultural group or gender.⁵⁰

Conclusion

Every teacher and educational administrator should acquire an in-depth knowledge and understanding of the debilitating effects of stereotype threat on the academic, social, psychological, and spiritual development of children, particular those who are from underrepresented and stigmatized groups. These professionals must be willing to advocate for children and youth, many of whom do not fully understand how to deal with the far-reaching effects of broadly held negative stereotypes about their group. Schools that serve these marginalized groups of children must focus on accelerating their achievement by using effective instructional methods, and by committing themselves to ensuring the success of every child.⁵¹ 

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Dorothy M. Steele and Esther Rebecca Cohn-Vargas, *Identity Safe Classrooms: Places to Belong and Learn* (Thousand Oaks, Calif.: Corwin Press, 2013). Online resources at: <http://identit safeclassrooms.org/>.

Washington University in St. Louis: The Teaching Center, “Reducing Stereotype Threat” (2016): <https://teachingcenter.wustl.edu/resources/inclusive-teaching-learning/reducing-stereotype-threat/>.

Institute of Educational Sciences (IES): “Reducing Stereotype Threat in Classrooms: A Review of Social-Psychological Intervention Studies on Improving the Achievement of Black Students” (July 2009): https://ies.ed.gov/ncee/edlabs/regions/southeast/pdf/REL_2009076.pdf.

Stanford University: Graduate School of Education: “Empirically Validated Strategies to Reduce Stereotype Threat” (n.d.): <https://ed.stanford.edu/sites/default/files/interventionshandout.pdf>.

Harvard University Graduate School of Education: “When the Classroom Feels Hostile: How Stigma, Stereotype, and Labels Can Affect Kids With Learning Disabilities” (August 2015): <https://www.gse.harvard.edu/news/uk/15/08/when-classroom-feels-hostile>.

Rutgers University Center for Effective School Practices: “How Teachers Can Reduce Stereotype Threat in the Classroom” (2018): <https://cesp.rutgers.edu/blog/how-teachers-can-reduce-stereotype-threat-classroom>.

National Association of Independent Schools: “Shielding Students From Stereotype Threat” (Fall 2009): <https://www.nais.org/magazine/independent-school/fall-2009/shielding-students-from-stereotype-threat/>.



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NOTES AND REFERENCES

1. Pseudonyms.
2. Claude M. Steele and Joshua Aronson, “Stereotype Threat and the Intellectual Test Performance of African Americans,” *Journal of Personality and Social Psychology* 69:5 (November 1995): 797-811.
3. Sian L. Beilock, Robert J. Rydell, and Allen R. McConnell, “Stereotype Threat and Working Memory: Mechanisms, Alleviation, and Spillover,” *Journal of Experimental Psychology: General* 136:2 (May 2007): 256-276.
4. Ibid.
5. Anita Woolfolk, *Educational Psychology* (Upper Saddle River, N.J.: Pearson Education, 2013).
6. Katherine E. Ryan and Allison Murphy Ryan, “Psychological Processes Underlying Stereotype Threat and Standardized Math Test Performance,” *Educational Psychologist* 40:1 (2005): 53-63.
7. Hui Chu and Christia Spears Brown, “Stereotype Threat Among Latino School Age Children,” *International Journal of Social Sciences and Humanity* 7:5 (May 2017): 278.
8. Woolfolk, *Educational Psychology*.
9. Jack Snowman, Rick McCown, and Robert Biehler, *Psychology Applied*

to Teaching (Belmont, Calif.: Wadsworth Cengage Learning, 2012), 372.

10. Enrica Ruggs and Michelle Hebl, "Diversity, Inclusion, and Cultural Awareness for Classroom and Outreach Education" (2012) in B. Bogue and E. Cody, eds., *Applying Research to Practice Resources* (n.d.): <http://www.engr.psu.edu/AWE/ARResources.aspx>.

11. Snowman, McCown, and Biehler, *Psychology Applied to Teaching*, 372.

12. This source predominantly focuses on stereotype threat in math and science performance; however, additional studies cited within the source address areas such as social sensitivity, negotiation skills, driving skills, and areas of content that are predominately male dominated. Steve Stroessner and Catherine Good, "Stereotype Threat: An Overview": http://diversity.arizona.edu/sites/default/files/stereotype_threat_overview.pdf.

13. Ibid.

14. Robert J. Rydell, Michael T. Rydell, and Kathryn L. Boucher, "The Effect of Negative Performance Stereotypes on Learning," *Journal of Personality and Social Psychology* 99:6 (December 2010): 883-896. doi: 10.1037/a0021139.

15. James A. Grand, "Brain Drain? An Examination of Stereotype Threat Effects During Training on Knowledge Acquisition and Organizational Effectiveness," *Journal of Applied Psychology* 102:2 (February 2017): 115-150. doi: 10.1037/apl0000171.

16. Hannah-Hahn D. Nguyen and Ann Marie Ryan, "Does Stereotype Threat Affect Test Performance of Minorities and Women? A Meta-analysis of Experimental Evidence," *Journal of Applied Psychology* 93:6 (November 2008): 1,314-1,334. doi: 10.1037/a0012702.

17. Michael Inzlicht and Sonia K. Kang, "Stereotype Threat Spillover: How Coping With Threats to Social Identity Affects Aggression, Eating, Decision Making, and Attention," *Journal of Personality and Social Psychology* 99:3 (September 2010): 467-481. doi: 10.1037/a0018951.

18. Beilock, Rydell, and McConnell, "Stereotype Threat and Working Memory: Mechanisms, Alleviation, and Spillover," 256-276.

19. Catherine Good, Joshua Aronson, and Michael Inzlicht, "Improving Adolescents' Standardized Test Performance: An Intervention to Reduce the Effects of Stereotype Threat," *Journal of Applied Developmental Psychology* 24:6 (December 2003): 645-662.

20. Elvin S. Gabriel, Carole Woolford-Hunt, and Esther Hooley, "Creating a Christ-Centered Climate for Educational Excellence: Philosophical, Instructional, Relational, Assessment, and Counseling Dimensions," *Catalyst* 13:2 (2016): 4-11.

21. Ibid., 5, 6.

22. Ibid.

23. Ibid., 8.

24. Ellen G. White, *Education* (Mountain View, Calif.: Pacific Press, 1903), 80.

25. _____, *The Desire of Ages* (Mountain View, Calif.: Pacific Press, 1898), 552.

26. Ibid.

27. Ibid., 556.

28. Luke 7:36-39, NIV. Holy Bible, New International Version®, NIV® Copyright © 1973, 1978, 1984, 2011 by Biblica, Inc.® Used by permission. All rights reserved worldwide. For additional reading, see James Carroll, "Who Was Mary Magdalene?": <https://www.smithsonianmag.com/history/who-was-mary-magdalene-119565482/>.

29. Ellen G. White, *Daughters of God* (Hagerstown, Md.: Review and Herald, 1998), 239. See also *The Desire of Ages*, pages 558 to 560.

30. Michael Johns, Michael Inzlicht, and Toni Schmader, "Stereotype Threat and Executive Resource Depletion: Examining the Influence of Emotional Regulation," *Journal of Experimental Psychology: General* 137:4 (November 2008): 691-705.

31. Ibid., 230.

32. Natasha K. Bowen, Kate M. Wegmann, and Kristina C. Webber, "Enhancing a Brief Writing Intervention to Combat Stereotype Threat

Among Middle-school Students," *Journal of Educational Psychology* 105:2 (May 2013): 427-435. doi: 10.1037/a0031177.

33. Ibid.

34. Aneeta Rattan, Catherine Good, and Carol S. Dweck, "'It's OK—Not Everyone Can be Good at Math': Instructors With an Entity Theory Comfort (and Demotivate) Students," *Journal of Experimental Social Psychology* 48:3 (May 2012): 731-737.

35. Matthew McGlone, "Communicative Strategies for Mitigating Stereotype Threat Among Female Students in Mathematics Testing" (Conference Papers—International Communication Association. Annual Meeting, 2007), 1-27.

36. Gregory M. Walton, Geoffrey L. Cohen, and Carl M. Steele, "Empirically Validated Strategies to Reduce Stereotype Threat": <https://ed.stanford.edu/sites/default/files/interventionshandout.pdf>.

37. Lauren Aguilar, Greg Walton, and Carl Wieman, "Psychological Insights for Improved Physics Teaching," *Physics Today* 67:5 (May 2014): 43-49.

38. David Scott Yeager et al., "Breaking the Cycle of Mistrust: Wise Interventions to Provide Critical Feedback Across the Racial Divide," *Journal of Experimental Psychology: General* 143:2 (April 2014): 804.

39. Ruggs and Hebl, "Diversity, Inclusion, and Cultural Awareness for Classroom and Outreach Education," in *Applying Research to Practice Resources*.

40. Bowen, Wegmann, and Webber, "Enhancing a Brief Writing Intervention to Combat Stereotype Threat Among Middle-school Students."

41. Steele and Aronson, "Stereotype Threat and the Intellectual Test Performance of African Americans."

42. Annique Smeding et al., "Order of Administration of Math and Verbal Tests: An Ecological Intervention to Reduce Stereotype Threat on Girls' Math Performance," *Journal of Educational Psychology* 105:3 (August 2013): 850-860. doi: 10.1037/a0032094.

43. Aguilar, Walton, and Wieman, "Psychological Insights for Improved Physics Teaching," 43-49.

44. Janessa R. Shapiro, Amy M. Williams, and Mariam Ham-barchyan, "Are All Interventions Created Equal? A Multi-threat Approach to Tailoring Stereotype Threat Interventions," *Journal of Personality and Social Psychology* 104:2 (February 2013): 277-288. doi: 10.1037/a0030461.

45. Bowen, Wegmann, and Webber, "Enhancing a Brief Writing Intervention to Combat Stereotype Threat Among Middle-school Students."

46. Ibid.; David Sadker, "Some Practical Ideas for Confronting Curricular Bias," <https://www.sadker.org/curricularbias.html>; *Washington Models for the Evaluation of Bias Content in Instructional Materials* (2009): <http://www.k12.wa.us/Equity/pubdocs/WashingtonModelsfortheEvaluationofBias.pdf>.

47. George Cristian Bursuc, "Achieving Gender Equality in Teaching and Learning: Identifying Problems and Searching for Solutions," *Linguaculture* 2 (2013): 64-73.

48. UNESCO, *A Guide for Gender Equality in Teacher Education Policy and Practices* (France: UNESCO, 2015): <http://unesdoc.unesco.org/images/0023/002316/231646e.pdf>.

49. Paul G. Davies et al., "Consuming Images: How Television Commercials That Elicit Stereotype Threat Can Restrain Women Academically and Professionally," *Personality and Social Psychology Bulletin* 28:12 (December 2002): 1,615-1,628.

50. Sarah L. Singletary, Enrica N. Ruggs, and Michelle R. Hebl, "Literature Overview: Stereotype Threat: Causes, Effects, and Remedies": http://www.engr.psu.edu/awe/misc/arps/arp_stereotypethreat_overview_31909.pdf.

51. Robert E. Slavin, *Educational Psychology: Theory and Practice* (Boston: Pearson, 2012).