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Teaching with Confidence

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Summary

It is not uncommon for university instructors and teaching assistants to find themselves outside their "comfort zones". They may be required to teach and explain concepts that are outside their area of expertise or that they have never had to articulate to beginners before (Huston, 2009). This may especially be the case for graduate students, who must transition from the role of "learner" to the role of "expert", as they are required to act as teaching assistants, and, in some cases, course instructors. In this session, participants will explore the underlying psychology of confidence, including phenomena such as the spotlight effect, impostor phenomenon, and stereotype threat. Based on these phenomena, they will consider strategies to boost their confidence, both inside and outside of the classroom. Participants will consider these strategies in specific contexts where they experience low and high confidence. The goal of the session is to make participants aware of pervasive psychological biases that result in low confidence and to have them identify ways of overcoming some of these biases. Ultimately, being more confident in the classroom should result in the graduate student instructor feeling more comfortable and in undergraduate students having more confidence in their learning.

Keywords
teaching confidence, impostor phenomenon, confidence-boosting

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SUMMARY
It is not uncommon for university instructors and teaching assistants to find themselves outside their "comfort zones". They may be required to teach and explain concepts that are outside their area of expertise or that they have never had to articulate to beginners before (Huston, 2009). This may especially be the case for graduate students, who must transition from the role of "learner" to the role of "expert", as they are required to act as teaching assistants, and, in some cases, course instructors. In this session, participants will explore the underlying psychology of confidence, including phenomena such as the spotlight effect, impostor phenomenon, and stereotype threat. Based on these phenomena, they will consider strategies to boost their confidence, both inside and outside of the classroom. Participants will consider these strategies in specific contexts where they experience low and high confidence. The goal of the session is to make participants aware of pervasive psychological biases that result in low confidence and to have them identify ways of overcoming some of these biases. Ultimately, being more confident in the classroom should result in the graduate student instructor feeling more comfortable and in undergraduate students having more confidence in their learning.

KEYWORDS: teaching confidence, impostor phenomenon, confidence-boosting

LEARNING OBJECTIVES
By the end of this workshop, participants will be able to:
- identify and explain some of the underlying psychology of confidence, as it relates to teaching;
- describe methods of boosting teaching confidence;
- plan steps to increase their own confidence levels and those of others in a variety of teaching scenarios.

REFERENCE SUMMARIES

Carney, D.R., Cuddy, A.J.C., & Yap, A.J. (2010). Power posing: Brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Psychological Science, 21,* 1363-1368.

This study investigated the hypothesis that rather than our psychology unidirectionally shaping our body language, our body language could also shape our psychology. The authors asked participants to stand in high-power (expansive positions with limbs open) or low-power (contractive positions with limbs closed) positions for one minute. Saliva samples were taken from the participants both before and after they stood in the high- or low-power positions. High-power posers had increases in salivary testosterone levels (the hormone most associated with dominance), and decreases in cortisol levels (the hormone most associated with stress), whereas low-power posers showed the opposite pattern.

In the context of teaching confidence, these results suggest that simply orienting one's body in a more powerful pose can change the body's physiological response, making oneself feel

more powerful. Before and during lesson delivery, for example, individuals can stand with the feet farther apart and the arms away from the torso. This paper is discussed during the "Group Study" and "Jigsaw Groups" sections of the workshop. A handout (Appendix B) is given to the "Power Posing" expert group, based on this paper.

Clance, P.R. & Imes, S.A. (1978). The impostor phenomenon in high achieving women: Dynamics and therapeutic intervention. Psychotherapy Theory, Research, and Practice, 15, 1-8.

In this paper, Clance and Imes coined the term "impostor phenomenon", which refers to the tendency for many high-performing individuals in academia and other fields to feel like phonies or impostors. The researchers provided psychotherapy to 150 women in academia who considered themselves to be "impostors". This paper was ground-breaking in characterizing the pervasiveness of impostor phenomenon, but focuses more on remedial therapy. Facilitators may wish to reference a more recent paper on the topic (see Sakulku & Alexander, 2011). This paper, and related papers on the topic, is discussed during the "Group Study" and "Jigsaw Groups" sections of the workshop. A handout (Appendix B) is given to the "Impostor Phenomenon" expert group, based on this paper.

Gilovich, T. , Medvec, V.H., & Savitsky, K. (2000). The spotlight effect in social judgment: An egocentric bias in estimates of the salience of one's own actions and appearance. Journal of Personality and Social Psychology, 78, 211-222.

The spotlight effect describes a phenomenon whereby individuals overestimate the extent to which others notice aspects of their appearance and actions. In this empirical study, participants were asked to engage in activities that were likely to induce self-consciousness: (1) wearing a bright, embarrassing t-shirt in a room full of people; and (2) speaking in a group discussion. Subsequently, participants overestimated the extent to which others: (1) recalled the picture on the t-shirt; and (2) recalled positive and negative comments made by the target individual during a group discussion. This likely occurs because individuals tend to be highly attuned to their own actions and experiences, and fail to adjust appropriately to consider the perspectives of other individuals, of whose universe one is not the centre. These findings apply particularly well to the context of public speaking (e.g., lecturing). In the workshop, individuals may consider how the audience is significantly less likely to notice aspects of the instructor's behaviour (e.g., stumbling over a word, other signs of nervousness) than the instructor may believe. This paper is discussed during the "Group Study" and "Jigsaw Groups" sections of the workshop. A handout (Appendix B) is given to the "Spotlight Effect" expert group based on this paper.

Eison, J. (1990). Confidence in the classroom: Ten maxims for new teachers. College Teaching, 38, 21-25.

In this article, Eison outlines the sources of teaching confidence. He provides ten maxims that "can assist new teachers in their quest to become both professionally effective and personally self-confident" (p.21). His ten maxims include: the feel confident, act confident; examine why you want to teach; learn the characteristics associated with effective teaching; enter each

class with specific learning objectives; teach less, better; use active learning strategies regularly; don't be a perfectionist; be relaxed about admitting when you don't know something; ask for response from students and colleagues, and; remember that enthusiasm can carry the day. Although this paper was published more than 20 years ago, its advice is still valuable today, as discussed in a 2012 blog post by Maryellen Weimer at facultyfocus.com. This paper is discussed in the "Facilitator Presentation" component of the workshop. The facilitator outlines Eison's 10 maxims.

Spencer, S.J., Steele, C.M., & Quinn, D.M. (1999). Stereotype Threat and Women's Math Performance. Journal of Experimental Social Psychology, 35, 4-28.

Stereotype threat is "the experience of being in a situation where one faces judgment based on societal stereotypes about one's group" (p. 5). In this set of studies, Spencer and colleagues investigated the impact of stereotype threat on women's math performance. They found that when stereotypes about women's math performance were made salient (by telling participants before taking a math test that the test produced gender differences), women performed more poorly than men, whereas no such gender differences emerged when stereotypes were eliminated (by telling participants ahead of time that no gender differences were observed on the math test). The authors suggested that this pattern emerges because the stereotyped group (in this case, women doing math) feels apprehensive about conforming to the stereotype and thus disrupts performance on the actual task (the math test). These findings are important for women as well as other groups that are victims of academic stereotyping (see Steele & Aronson, below). Making individuals aware of the fact that performance between groups does not differ on these tasks when stereotypes are eliminated from the situation may help increase the confidence of stereotyped-against groups in academic settings. This paper is discussed during the "Group Study" and "Jigsaw Groups" sections of the workshop. A handout (Appendix B) is given to the "Stereotype Threat" expert group, based on this paper.

CONTENT AND ORGANIZATION

Duration (min)	Subject	Activity	Purpose
3	Introduction	Introduce yourself to the participants and provide an anecdote about a personal experience with growth in confidence. Briefly present the workshop outline and objectives.	Familiarize participants with the facilitator and the workshop; make the facilitator relatable.
1	What is confidence?	Define teaching confidence: "Teaching confidence refers to how secure we feel in our decisions and actions as teachers or teaching assistants." Emphasize that teaching confidence may be general or task-specific; provide examples of contexts in which	Distinguish the main concept being discussed in the workshop, as confidence is often confused with other similar/ overlapping

		one may have high vs. low confidence. See Appendix A- Handout for note taking space.	psychological concepts.
6	Confidence Ratings	I. Ask participants to rate their confidence (V = very confident, S = somewhat confident, N = not at all confident) on the common TA/Teaching Responsibilities listed on the handout (Appendix A) II. Ask participants to circle one or two responsibilities where they feel/would feel least confident. (Allow ~2 minutes for Steps I & II). III. Ask participants to turn to the person next to them and discuss one of these responsibilities and how they might develop confidence in this area. Encourage sharing of experiences (e.g., have you found a way to boost your confidence in an area your partner is worried about?). (Allow 4 minutes for Step III). IV. Ask participants to keep the identified responsibilities in the back of their mind throughout the workshop.	Determine the context-specific nature of confidence; think about areas of personal concern in teaching; share experiences and advice with peers; recognize that we all experience low confidence in certain areas.
12	Group study on the underlying psychology of confidence	Divide participants into 4 groups of 4-6 members. Each group receives one psychological phenomenon to study. They receive a one-page document (Appendix B) that includes an explanation of the phenomenon and some accompanying data. Give the instructions: • You will have 10 minutes to discuss the phenomenon with your group • Think about and discuss strategies individuals could implement related to the phenomenon to boost one's	Discuss some underlying psychological causes that threaten confidence; think about strategies one could implement to boost confidence, with these psychological biases in mind.

		confidence. Try to devise 3-5 strategies based on your phenomenon. • Think about the phenomenon for yourself and for others. Are there certain individuals who may experience threats to confidence as a result of this phenomenon (e.g., international students? Women?). • Following the 10 minute group discussion, each group member will join a different group and will discuss their phenomenon and strategies identified to the rest of their new group members. The following 4 psychological phenomena may be included: 1. The Spotlight Effect (see Reference summary for Gilovich, Medvec, & Savitsky, 2000). 2. Impostor Phenomenon (see reference summary for Clance & Imes, 1978;). 3. Stereotype Threat (see reference summary for Spencer, Steele, & Quinn, 1998). 4. Power Posing/Body posture (see reference summary for Carney, Cuddy, & Yap, 2010). Emphasize that simply being aware of commonly-held psychological biases can go a long way towards overcoming them.	
20 (4 x 5)	Jigsaw Groups	Create new groups with 1 member from each original group joining to form 4-5 new groups. Each new group includes an "expert" on each of four phenomena. Each group member presents the psychological phenomena	Discuss in more depth the psychological causes that threaten confidence; learn through teaching/ explanation; practice

		that they studied, as well as strategies they discussed to boost one's confidence, informed by their chosen scenario. During this time, other group members should complete the "Phenomenon" and "Strategies" section of their handout (Appendix A)	speaking in front of a small group, as this is often a context in which individuals experience low confidence, in a safe environment.
8	Whole Group Discussion	Bring the discussion back to the whole group. Groups have the opportunity to offer ideas they discussed to the whole group. Participants also have the opportunity to ask further questions related to the phenomena.	Share ideas from individual groups with the whole group; clarify any confusion and ask additional questions.
5	Video	View part of Amy Cuddy's TEDGlobal 2012 Talk, "Your Body Language Shapes Who You Are", available at: https://www.youtube.com/v/Ks-_Mh1QhMc&t=17m17s You may wish to give the following background information: "Amy Cuddy, the "power posing" researcher, has a full TED talk, but we're only going to watch part of it. At this point in the talk, Amy has talked about her research on power posing. She has just talked about her rocky educational journey due to a head injury in undergrad. She has gotten into grad school at Princeton. But, she feels like an impostor." Play the video from 17:17 to 19:33. Ask follow-up questions: • What do you think about what Amy Cuddy had to say? • Do you think it is useful advice?	Examine a compelling anecdotal account of one individual overcoming low confidence, and passing on advice based on her experience to her own students down the road; appreciate that even very successful researchers can experience impostor phenomenon at some point in their career; demonstrate how we might provide advice to other students (undergraduates and fellow graduate students) on confidence-boosting.
10	Facilitator Presentation	Present James Eison's 10 Maxims from "Confidence in the classroom: Ten maxims for new teachers" (Eison, 1990).	

		Ask participants if they follow any of these maxims already, and how easy/difficult they believe some of these may be to implement.	
15	Gallery Walk: Confidence Scenarios	The group discusses different first- and third-person scenarios that are potentially confidence-threatening. They are asked to apply what they have learned so far in the workshop to provide advice in each scenario. Places 4 large flipchart sheets of paper with a flipchart marker on tables or taped to the wall around the room (can be prepared ahead of time). Participants will get into groups of 4-6 and start at one of the 4 flipchart papers with its accompanying scenario. Groups have 3 minutes at each scenario before rotating to the next. The groups walk around and write their responses to each scenario, building upon and responding to comments made by earlier groups. Once groups have had a chance to respond to all 4 scenarios, they will take a "gallery walk" around for the final 3 minutes to explore what everyone wrote.	Apply what has been learned in the workshop to novel scenarios; make suggestions to boost confidence; consider scenarios from the perspective of an individual experiencing low confidence and from the perspective of a colleague of an individual experiencing low confidence.
5	Group Discussion of Scenarios	The group discusses the scenarios that were considered as part of the Gallery Walk. You might ask the following questions: • Would the advice provided help to mitigate the situation? • Do you disagree with any of the advice? • Do you think you could apply these recommendations to situations that threaten your own or others' confidence?	Consider, as a group, the potential effectiveness of different strategies and pieces of advice; share any relevant personal experiences.

3	Conclusion	Present the key messages provided on the workshop handout(Appendix A).	Summarize the workshop and provide take-home messages for participants.

PRESENTATION STRATEGIES

This workshop is designed for any graduate student who is interested in understanding teaching confidence and ways of boosting it, by introducing the underlying psychology of confidence, based on several empirical findings. It is not designed to be discipline-specific, but may be particularly relevant both to women, especially those in science, technology, engineering, and math, and to ethnic/cultural minorities, both of whom are more likely to experience impostor phenomenon and stereotype threat. The workshop is designed to be highly interactive, and to encourage participants to offer their experiences, knowledge, and opinions in a comfortable environment. Establish a comfortable environment by providing some personal experiences with respect to teaching confidence, and by explaining that questions, comments, and ideas welcome throughout the workshop. Because public speaking is often a confidence-threatening situation for many individuals, having the participants present the phenomena they have become experts on in groups allows individuals to practice public speaking in a less intimidating environment. Strategies to boost confidence differ greatly from individual to individual. As such, the workshop is not designed to give participants specific rules or pieces of advice to follow, but rather to familiarize them with psychological research findings and to encourage them to use these to develop strategies that may be personally relevant.

Encourage participants in groups to be focused during discussions and other activities. Because some individuals attending the workshop may find speaking up or presenting in front of a group intimidating, ensure that the tone for the workshop is welcoming and inclusive by regularly encouraging participants to offer their opinions and by responding positively to any questions or comments raised. Small-group and pair activities will also offer opportunities for students who are uncomfortable in larger groups to participate.

ADDITONAL REFERENCES

Gibson-Beverly, G., & Schwartz, J.R. (2008). Attachment, entitlement, and the impostor phenomenon in female graduate students. *Journal of College Counseling,* 11(2), 119-133.

Huston, T. (2012). *Teaching what you don't know.* Cambridge, MA: Harvard University Press.

Sakulku, J., & Alexander, J. (2011). The impostor phenomenon. *International Journal of Behavioral Science, 6,* 73-92.

Steele, C.M. & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology, 69,* 797-811.

APPENDIX A: Handout

What is confidence in teaching?

Common TA/Teaching Responsibilities		Strategies
1. Grading and assessing student learning		
2. Preparing and giving effective guest lectures		
3. Answering student questions		
4. Using questions effectively		
5. Motivating students		
6. Using technology to enhance learning		
7. Articulating explicit learning objectives		
8. Communicating effectively		
9. Knowing the subject matter		
10. Teaching large classes		

Phenomenon	Strategies
The Spotlight Effect The tendency to think that people _____ about your actions and appearance _____.	
Impostor Phenomenon A tendency to _____ who will be exposed at any point, often due to a _____ one's achievements.	
Stereotype Threat "The experience of being in a situation where _____ based on societal _____ about one's group.	

Power Posing	

Eison's (1990) Ten Maxims:
1. To feel confident, act confident
2. Examine why you want to teach
3. Learn the characteristics associated with effective teaching
4. Enter each class with specific objectives
5. Teach less, better
6. Use active learning strategies
7. Don't be a perfectionist
8. Be relaxed about admitting it when you don't know something
9. Ask for response from students and colleagues
10. Remember that enthusiasm and energy can carry the day

Confidence scenarios
- Group 1: You are asked to deliver a guest lecture in a course for an instructor who is going away to a conference. Although you know something about the lecture topic, it is not directly within your area of expertise.
- Group 2: A student comes by to ask you some questions before an exam and asks you several questions you do not know the answer to. The student gets frustrated and says she is going to speak to the course instructor.
- Group 3: An undergraduate student comes to you and tells you that he is extremely nervous about the upcoming class presentation he must give and isn't sure what to do about it. He feels like everyone in the class will discover he's not smart.
- Group 4: A female graduate student in your department tells you she spends so much time preparing for each one-hour tutorial she delivers, because she is afraid of appearing ignorant in front of the students. Her research is suffering as a result.

Key messages
- Confidence is something that varies across situations and *can* be increased.
- There are many different psychological biases, such as spotlight effect, impostor phenomenon, and stereotype threat, which can trick us into being less confident than we should be.
- Recognizing that these biases exist and are common (even highly successful people hold them!) can help to boost our confidence.
- Think about what strategies may work for you. Most of all, remember that you deserve to be here.
- Tell other people. If you speak to another graduate student who is experiencing impostor phenomenon, tell them what you know

References

Carney, D.R., Cuddy, A.J.C., & Yap, A.J. (2010). Power posing: Brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Psychological Science,*

Clance, P.R. & Imes, S.A. (1978). The impostor phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy Theory, Research, and Practice, 15.*

Cuddy, A.J.C. (2012, June). Your body language shapes who you are. *TEDGlobal 2012*. Available at: http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are

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APPENDIX B: Group Study Handouts

The Spotlight Effect – Group Handout

Think about being on a stage in a theatre. The stage lights are shining upon you. What are the people in the audience noticing? Is it your blushing cheeks? The crease on your shirt you missed when you were ironing? The slight hint of nervousness in your voice? Or are they wrapped up in their own world?

What is it?

The "Spotlight Effect" refers to the tendency to think that more people notice something about you than they do. Dozens of studies in social psychology have supported this phenomenon.

Research on the Spotlight Effect

In a major study that looked at this phenomenon, researchers had participants do something that was likely to make them self-conscious. In the Appearance study, they had individual participants wear a Barry Manilow shirt in a room full of people. They then had the participant predict how many people in the audience noticed their shirt. Then, they asked the actual audience members to report whether they noticed someone wearing a Barry Manilow shirt. In the Actions study, they had participants advocate for a certain issue in a group. When participants were asked to evaluate their performance and anything that embarrassed them, they estimated that approximately 50% of people noticed negative aspects of their performance. Compare this to the audience members. Just over 20% noticed the Barry Manilow shirt, and fewer than 10% noticed aspects of the individual's performance.

So why do we have this tendency to overestimate? We're the centre of our own universe – we use our own experiences and thoughts about ourselves to evaluate other people's thoughts about us, and we overestimate the extent to which our perceptions are shared by others and are accurate.

Imposter Phenomenon – Group Handout

Most of us, at some point in our academic career, have felt like we don't belong here, like we aren't smart enough, and are an impostor.

This is something many – or most – of us experience in graduate school. Everyone around us is so smart, how are we ever going to attain that level of intelligence and ability?

What is it?

Impostor phenomenon, a phenomenon first characterized by Clances and Imes in the 1970s amongst female academic, refers to the feeling that one is a fraud, and any day now will be exposed.

What are the characteristics?

- Feeling like a fraud.
- Worrying about being "found out".
- Downplaying accomplishments/attributing them to luck.
- Setting unreasonably high standards for oneself.
- Low confidence.

What are the causes?

- A failure to internalize and take credit for our achievements – or to a tendency to attribute our success to external factors. This tendency to attribute success to outside factors and luck and blame failure on internal deficits affects women more than men. Recent findings may suggest that this is what leads more women to leave academia than the desire to have a family-friendly career.
- Being in a high-stakes/demanding career environment, in which intelligence is prized.
- Colleagues may disguise their own feelings of imposter phenomenon. We know everything we don't know, but don't know everything that other people don't know. We only have access to our own self-doubt. It's important to keep in mind that most people try to present their best self, especially in a work place environment. You have access to your self-doubt and lack of knowledge, but not to anyone else's.

This is still something experienced by highly successful people. Maria Klawe, a CS prof and president of Harvey Mudd college, recently wrote an article about impostor phenomenon on Slate that is worth reading. Even a highly successful person like this still experiences impostor phenomenon.

Stereotype Threat – Group Handout

Consider women in STEM fields. Why women are underrepresented in STEM fields has been a question researchers in a number of different fields have been trying to solve for quite a while now. There's no evidence that women's abilities in these areas are inferior to men's – from a young age, girls perform as well as or better than boys.

But look at the kinds of things our society typically tells girls. Beauty is prized over intelligence. All of this both contributes to and reflects a stereotype that girls aren't as good at math as boys. Being exposed to this belief, and certainly holding it oneself can threaten abilities.

What is it?

Stereotype Threat is the experience of being in a situation where **one faces judgment** based on societal **stereotypes** about one's group. Stereotype threat (ST) is a bias that typically affects women and certain minorities.

Why does it happen?

Individuals can become so concerned about conforming to the stereotype, that this consumes much of their cognitive resources. The general idea is that when we're in a situation where a negative stereotype is salient, we feel pressure to avoid conforming, which leads to anxiety and preoccupation causing underperformance, or to withdraw from the task altogether.

Research on Stereotype Threat

In a study that looked at ST, men and women took a math test. The participants were either told that gender differences were found on this test, or that no gender differences were found. So in the first case, women should feel some stereotype threat – their gender is expected to perform worse. In the other case, they don't have any situational information that suggests they should feel stereotype threat.

When participants were told that there were gender differences, women performed much worse and men performed much better than when no such threat was presented, and the two genders performed essentially equally. Simply priming a negative stereotype can facilitate the positively-stereotyped group, and can undermine the performance of the negatively- stereotyped group.

Based on data from Spencer, Steele, & Quinn, 1998
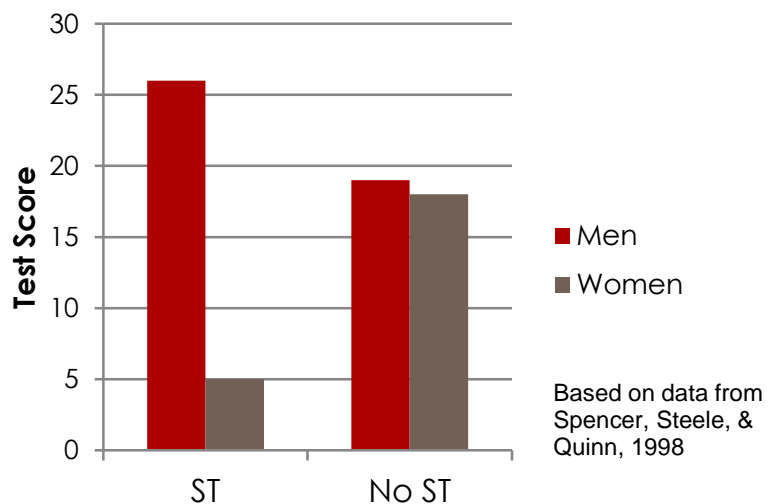
Power Posing – Group Handout

We know that when we're self-conscious or lacking confidence, we tend to make ourselves small. When we feel powerful and confident, we spread out, and we take up more room. This is something we have in common with many other species.

The short lesson here is that your body language and posture tell others a lot about your confidence. Just spreading your feet out a bit when you're standing at the front of a classroom can make you look more confident.

But, interestingly, your body also speaks to your mind. Orienting your body in a more confident posture can trick your mind.

What is it?

Power posing is the idea that, when we adopt a confident or powerful pose, our brain chemistry changes, making us really feel more confident.

Research on Power Posing

Amy Cuddy at Harvard had participants sit in either high power or low power poses. She took blood samples before and after the pose. Those sitting in high power poses showed a spike in testosterone (the "power" hormone) and a decrease in cortisol (the stress hormone). Conversely, the low power pose participants showed a decrease in testosterone and increase in cortisol.