



TEACHING FOR STUDENT SUCCESS

Episode 12

Failure is Just a Learning Opportunity: Growth Mindset vs. Economic Disadvantage with Dr. Susana Claro

STEVEN ROBINOW: This is Teaching for Student Success. I'm Steven Robinow. If you want to help your economically disadvantaged students succeed, if you really want to help all of your students succeed, you must listen to Dr. Susana Claro in this episode. Deans and provosts, pay attention. Today we're going to talk about the impact of growth mindset on the academic performance of economically disadvantaged students. While we are going to be talking about a study of 10th grade students in Chile, I want us all to make a direct connection to our students.

So my Teaching for Student Success Wednesday morning research team helped me assemble some numbers. We are going to use Federal Pell Grant awards as a proxy to identify the minimum number of economically disadvantaged students in our colleges and universities. Federal Pell Grants, first offered in 1973, are awarded to undergraduate students who display exceptional financial need and have not earned a bachelor's, graduate, or professional degree.

Now let's run some numbers. We are looking at the number of Pell awards given in any year compared with the number of students enrolled in two-year and four-year colleges and universities, both public and private. Twelve years into the program in 1985, 12% of students received Pell awards. Thirty-five years later in 2020, over 30% of students received Pell Grants. These numbers may or may not surprise you. If they do surprise you, then you probably realize that you may have more Pell Grant recipients in your classes than you would have thought.

The other thing you need to know is that without intervention, these Pell Grant recipients, these economically disadvantaged students who we accepted into our colleges and universities, are more likely to leave the academy than economically advantaged students. While no one expects faculty to solve students' economic problems, we as faculty can significantly impact the academic performance of these

students with a few simple essentially no-cost interventions, interventions for both the faculty and the students.

I am very excited that Dr. Susana Claro has joined me today to talk about her 2016 *PNAS* publication entitled "Growth mindset tempers the effects of poverty on academic achievement," published with co-authors David Paunesku and Carol Dweck. This is an important paper demonstrating that those who did hold a growth mindset were appreciably buffered against the deleterious effects of poverty on achievement, suggesting that helping students achieve a growth mindset may be the single most important thing we can do to help our at-risk students succeed.

Dr. Susana Claro is an Assistant Professor in the School of Government at the San Joaquin campus of the Pontificia Universidad Catolica de Chile in Santiago, Chile. Dr. Claro received her doctorate in the economics of education from Stanford University. Dr. Claro is the co-founder of Fundacion Enseña Chile, an organization that prepares outstanding young professionals to teach in low-income schools and to become long-term agents of change. Dr. Claro has received numerous awards for her work with this organization. Dr. Claro's research focuses on the inequality of opportunities for school-age students. Welcome, Susana. Thank you for joining us on Teaching for Student Success.

SUSANA CLARO: Thank you, Steve, for inviting me. It's an honor to be here and to always—we love talking about growth mindset and all the learning mindsets around. So it's an honor to talk to all of you.

STEVEN ROBINOW: I suspect most listeners are familiar with growth mindset and fixed mindset. But why don't we take a minute just to define those first? Could you define growth and fixed mindsets? And then let's go into the research.

SUSANA CLARO: Great. So mindset, the academic term is implicit beliefs about intelligence. The studies of this type of mindset started with Carol Dweck worried about why some kids were frustrated with challenges and other got fired up. Like, oh, this is very difficult. I'm going to keep trying to do it. And she was like, why are they reacting so differently when their background and their skills are very similar?

She started, as all psychologists do, what are your beliefs? That's where the psychologists first start digging. How is your understanding of different things shaping your actions? And in particular, she realized with her students that the beliefs people have about the nature of intelligence were very determinant in how they reacted to these small challenges or frustrations.

And she realized that people usually would—this is a continuum, but there would be two polars that you could recognize. One is believing that intelligence is fixed. This is the amount of intelligence you have at a certain point. Maybe you could have developed at your early years, but then as we used to be in earlier times, your brain stops growing or stops moving and changing. And this is the intelligence you got. So that's what she calls a fixed mindset. You think your skills are fixed.

And then on the other end is the opposite, is believing that your brain is like a muscle that you can develop. That belief she called malleable view of intelligence and now it's called growth mindset. The more popular term is growth mindset. It's believing that your mind, I mean, your skills can grow.

So Carol Dweck identified these two types of beliefs of how people understood intelligence. And she realized that students and children reacted very differently depending on these two types of beliefs. So students who showed a fixed mindset usually would get very frustrated with failure or when something became difficult like an exercise. And they were much more likely to quit their trying than those with a growth mindset. They were even less likely to ask help. Even if they probably thought they needed more, they wouldn't ask for help. Because they would tend to hide that they didn't have the skills.

Basically if your intelligence doesn't change and you can't do something, there's no point in doing any effort and keep trying, because nothing is going to change. So this unconscious rationale, because they aren't doing it very consciously, it's implicit beliefs, it's something you don't know you are reacting to, make them hide their failures, avoid situations where they can fail, even though they could learn something new. But because they don't want to be seen as failing, they try to avoid those moments.

And also it's even your own psychology, your own body unconsciously making you avoid situations that are painful for yourself. If you think you can't do something, every

situation that signals you that this is your limit, it's a pain for yourself. So you don't want to keep living that moment all the time. So you are much more likely to quit, to avoid situations of learning. And basically it's like a self-fulfilling prophecy. You end up learning less.

And in the opposite, the other side, those who have a growth mindset tend to, how do you say, interpret a problem or an obstacle as a signal that you need more help, you need to invest more effort, or you need to change strategies. It's more like instead of a message of your limits, it's a message that you have to do something more to put more effort and keep trying. Because it's just a moment in your life. It's not defining yourself. It's just something that is going to change.

STEVEN ROBINOW: Great. Thank you. OK, now that we are all on the same page regarding mindset, let's talk about your paper. Your paper is based on an amazing data set that the Chilean government generates every other year. Every other year, the Chilean government collects a wide range of data about every 10th grader in the country from academic performance data, socioeconomic data, family data, and more. It is a very broad and very rich data set. Questionnaires are sent to the families of over 250,000 students. The government receives over 200,000 responses. More than 90% of schools are represented in this data set. Let's begin with your underlying reasons to undertake this project.

SUSANA CLARO: So there was very little large-scale studies showing what was the relationship between mindset and learning. But also mostly it was super-interesting from my point of view of public policy. How was the need of mindset in different groups of socioeconomic groups? So basically was looking at from a public policy question. Is this important to develop? Is this needed in typically the people, the groups who are more important for public policy or those who are more vulnerable socioeconomically or are from disadvantaged context? And therefore, the government should invest more to ensure equality of opportunity.

So that's how after talking to this friend who suggested this idea to go and try to measure growth mindset at a national level, I went with this PowerPoint to the government to try to sell the idea. We should. This is a very important area of students. We should know whether this is important, this is needed or not in Chile. And this will also allow us to know how this influences learning later.

It wasn't easy, but finally they got convinced. But they accepted me two questions. So I had two items to select. And that's how I started meeting Carol Dweck and we worked on which questions to add. It was actually the first time a mindset was measured at a national scale in the world.

STEVEN ROBINOW: So you've got over 90% of the schools throughout the entire country. Essentially this is a national survey of all the students at that point in time in 10th grade.

SUSANA CLARO: Exactly.

STEVEN ROBINOW: So now tell us about what you learned.

SUSANA CLARO: So the first striking thing for me that I learned was how little growth mindset was in Chile. But still, the people who would disagree or strongly disagree with the idea that your intelligence can't change was very little. In the highest income group, it was about 30%.

So the second thing that I learned was how unequal was the proportion of students entering in a growth-mindset-aligned way. It was very unequally distributed across the socioeconomic sector. So that was a first thing of concern for a public policy perspective. In the groups of lowest family income, they were less likely to disagree with the idea that your intelligence can't change. And in the opposite one, there was 30% more or less and in the lowest income there was 12% only.

So that's a thing to worry about. We don't know why this is happening. It may be they are listening to less growth mindset messages. It may be that they are transferring messages about inequality in general to their own skills. Like oh, there are some things are not going to change and I don't change. Or maybe they have heard very constantly that they aren't good and they are not going to learn.

And this is something that from my time working with this group of teachers was very common to have the stories of my teachers telling us, oh, the parents are telling the kids that they can't learn. And even my colleagues sometimes are telling these kids that they are never going to change from a very early age. So it's very crazy that we

end up believing in ourselves as adults, but we are so wrong because it's so early and there's so much time for the students to change.

STEVEN ROBINOW: So that's an interesting disparity right there that at the high end of the spectrum, at the high end of the economic spectrum, 30% believe in growth mindset and it's 12% for those most disadvantaged. So that's a separate question that'll be interesting some other time to learn about. We'll come back and talk about that in the future. But now that you know that, you can still control for that and understand the impact. So please proceed.

SUSANA CLARO: So finally, our key question was what was the relationship between learning and mindset? And here for learning, we have test scores. We can discuss that test scores aren't the best instrument to know how much you know. But these have been developed for years and years until they are very strong, very robust. So with all the errors, we saw a very strong correlation between mindset and learning.

And when we separate this by socioeconomic background and we start controlling by everything we have starting for your school, starting for your parents, your previous learning and in grades and how many books you have at home, how many adults live with you, et cetera, and the family income, of course. And even the poverty concentration in the school. So how many peers with certain conditions you have.

So what we find is that if you have a growth mindset, you have a better score than your peer with a fixed mindset. And what was striking is the amount of the size of the gap between those who have a growth mindset and who have a fixed mindset. It was so big that some students with a growth mindset in the lowest income level had better scores than those in the eighth decile of family income. So that was really, really striking to see.

STEVEN ROBINOW: Yeah. I want to focus on that for a second. So I may even, if I can legally do this, put figure one on our website.

SUSANA CLARO: Sure.

STEVEN ROBINOW: So I think that is amazing. Figure one is amazing showing that those students in the lowest socioeconomic group, if they have a growth mindset, they are performing as well as students in the eighth economic decile, students that are economically advantaged. This figure also shows that within each economic range or decile, students with a growth mindset dramatically outperform students with a fixed mindset. The gap between those with a growth mindset versus a fixed mindset is amazing. Very significant, very impressive. Impressive not necessarily in a good way.

SUSANA CLARO: Yeah. Sadly. It's sad. It's really sad. And you know that there's something that we haven't published yet, but we followed these students two years later when they do what is equivalent to Chile the SAT. It's the admission test for the university. And we see again that in average the students who have a growth mindset scored better in this test than those peers in the same classroom who have the same teacher. And controlling by their initial level of math, they had better scores in this test than those with a fixed mindset in the same class. Everything else equal. Controlling by all these rich set of socioeconomic and gender.

STEVEN ROBINOW: Ah, gender is another question. Yeah, that's fascinating.

SUSANA CLARO: And what also is fascinating is that even if they started with the same score in 10th grade, you would think in 10th grade everything is lost. Whoever had the score is going to—there's not much you can do for the admission test, the university admission exam, the college admission exam. But there's still difference after a while. And what predicts this difference is the mindset of the students.

STEVEN ROBINOW: The mindset situation persists. These issues that have been measured in 10th grade are showing that those with growth mindset score significantly better on standardized tests than those of fixed mindset. These are 10th graders. And what do you think about these results? Are they relevant for university students? Of course you've tested two years later at admissions now. I didn't know that. And so at least students coming in, you're seeing the same thing. Standardized tests, students with a growth mindset are performing better than those with fixed mindsets and otherwise matched situations. What do you think the implications are for students in the higher education system around the world?

SUSANA CLARO: Yes. Well, I can tell you first that I teach public policy and education in general. So we have to teach a little bit of causal analysis, et cetera. And every time I

do the introduction of my class when you show the program, et cetera, I give a talk about growth mindset and basically the possibilities students still have of changing and how they are in this period of their life that their brain is especially plastic. And they can play a big role in how the skills that they end up having at the end of the semester, because their brain is so plastic and there's so much opportunity that they still have.

So I'm convinced that this is very important for the students both to know the facts themselves, the science, but also for them to realize that I believe that. So if they fail at the beginning of the year, of the semester, I'm not judging them and I'm not saying you don't have the skills for this class. But that I'm convinced that they have plenty of skills to keep developing what they need. So this has been studied not by me but by David Yeager and Paunesku, my co-author, and of course Carol Dweck in college. Also Greg Walton.

So they have started to mix the idea of growth mindset, communicating the belief that their brains are changing and can change even more during the class during this quarter, to the students, but also the idea that they need to feel that this teacher believes this. So there's this sense of community, a sense of belonging. But every time they do these experiments and the study that I was telling you from University of Texas, Austin.

And now they are expanding the study in different community colleges across the US. They find this thing that for those students, especially those who were more likely to fail or with lower skills at the beginning, they react differently and they start having learning or feeling less stressed or different type of outcomes. When we have studied it, it's been with a very small intervention.

And the idea of a teacher that is reminding these two students and especially when you have failed in the test, the teacher sits with you, the professor sits with the college student, and say, look, you failed this test, but I know you can do better. I know you can develop the skills eventually. Let's see what you're doing so you can actually reach the goal of developing these skills. Because I know you have the biology possibility. But your brain is able to develop these skills. So this is very encouraging for students. They feel much more motivated to work. It's amazing how they react.

STEVEN ROBINOW: So let me briefly summarize. Your research of over 200,000 10th graders shows that growth mindset can buffer the negative impacts of economic

disadvantage on academic performance. Now you have alluded to other research that shows that if higher education faculty have a growth mindset, at least about students, and the students have growth mindset, together they can overcome the challenges of previous situations in which students would have continued to fail. It also appears that students need to feel that the faculty believes that students can improve and that through this they'll feel a sense of support and community in the classroom.

So that's today's takeaway. So your research on 10th graders really does appear to transition to apply to college students as well. So let me close the interview by asking for a personal story. I'd like to know your story, a story that transformed you from being an engineering student in your class, the top engineering student in your class, and took you into public policy with an interest in student success, particularly those economically disadvantaged.

SUSANA CLARO: Yeah. That's true. We used to research things that are personally connected in some point. So I studied civil engineering, as I told you. And I was the first one of my cohort four years in a row. And this is a cohort of 700 students, most of them male. We were 30% female only. You would think that my own belief should be that I could learn anything. But instead as I advanced in the career, I became more and more fixed mindset. But I didn't know, but I became afraid of failing. Because I had this standard to maintain. I was the first.

And for me, getting to learn about psychology and how the psychology of learning basically how you can boycott yourself with these fears and this belief that your skills are set and that failing is a message of your limits. When I read how those beliefs can boycott you, I identified and I realized that all of the kids should not be—I mean, their potential should not be trapped by a belief that it's just in our hands to change. It's so handy. There's so many obstacles in people's lives, the socioeconomic inequality. Systems that replicate inequality and opportunities aren't available for everyone.

But this particular thing, it's in the hands of the teachers, the adults that work with the students in college like the professors with their students. And it's so cheap. It's something that it just takes you explaining, repeating, and showing the students that really this is possible and failing is just a learning opportunity. It's information. It's not your limit. So that's why it moved me so much to keep working on this and start raising evidence. Hopefully that can convince other professors and teachers and parents about this.

STEVEN ROBINOW: Well, I think with your research, you've certainly brought the message home I'm sure to the Chilean government. To do the study has got to have had an impact. We haven't talked about how your country has responded to that, but I'm sure that the country is responding well to that message.

SUSANA CLARO: There's a lot of work to do still in my country. But now it's permanently in the survey.

STEVEN ROBINOW: So every two years, so now this is something they're going to continue to measure. So that's wonderful. So they value the message that you're bringing to them, which is going to impact hundreds of thousands of lives every year now. That's fantastic. So all the kids. Really millions of lives.

SUSANA CLARO: I hope. I love how teachers get very enthusiastic when they realize that this is—they put a name for something that they already were trying to convey to students.

STEVEN ROBINOW: That's wonderful. Congratulations. Susana, I want to thank you so much for the time you spent with me today. I look forward to your future work on mindsets, connections to socioeconomic situations and mechanisms to minimize the negative impacts of impoverished environments. You're doing so much to help students around the world. That's really great. Susana, thank you again so much for your time. This has really been a wonderful discussion and I've enjoyed getting to meet you.

SUSANA CLARO: Thanks to you for the invitation. It's a pleasure to be here.

STEVEN ROBINOW: For more information about Dr. Susana Claro, her research, and favorite books and papers, please go to our website, teachingforstudentsuccess.org. Thank you for spending time with us today. Please share our podcast and website with your friends. We love hearing from our listeners. Please contact us through our website. If an episode has impacted your teaching, please send us a note and let us know what episode impacted you most, what you have done in your classroom, and how it has impacted your students.

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