Study: Less-privileged women more likely to succeed in STEM fields

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(PhysOrg.com) -- Researchers and educators have long tried to encourage young women to consider science, technology, engineering and mathematics, or STEM, as career fields in an effort to address the shortage of females in those areas. Two University of Kansas professors have published a study showing that ability alone simply isn't enough for women to excel in the STEM fields, and that how far women are from privilege makes a much bigger difference.

Barbara Kerr, Williamson Family Distinguished Professor of Counseling Psychology and Research in Education; and Karen Multon, professor and chair of psychology and research in education, published the study in the *Journal of Psychoeducational Assessment*. The study examines "distance from privilege," or the idea that how far young women perceives themselves from ideal socioeconomic, geographic, educational and various other variables can determine how likely they can be to persist in education and careers in the STEM fields. Two methods for measuring where women view themselves in relation to ideal places of power and privilege were also developed.

"We're trying to understand how to keep young women in college in STEM," Kerr said. "Once they are in the field, how do we keep them there? We find over and over that women who do persist have had to overcome many barriers."

The researchers have found that ability alone is not enough to predict whether a young woman will succeed in STEM. It is an important

variable, Kerr said, but research should also consider a number of other social variables and take a subjective look at what may stand in the way of success. Developing a tool that can accurately measure distance from privilege can greatly benefit gender equity work and help develop a model for identifying women with the potential to persist in the field.

“A standardized instrument measuring all important facets of privilege may make it possible for STEM studies to both describe more accurately the subjective experience of girls and women as well as to identify those who could benefit from specialized interventions to enhance persistence,” the authors wrote.

To develop and test a distance from privilege tool, Kerr and Multon surveyed young women at a Midwestern and Southwestern university and a Southern, traditionally black college to ensure a heterogeneous sample. They asked the students dozens of questions in three specific areas: access to resources, which measures a person’s access or lack thereof to resources coinciding with privileged status; perceived privilege status, which measured cultural and personal characteristics perceived as providing or prohibiting status; and protective factors, which examine an individual’s ability to survive and thrive in the face of obstacles.

Using a “ladder system,” the respondents were asked to mark on a representation of a ladder where they viewed themselves: at the top, most ideal place in society, at the bottom or somewhere in between. The young women indicated where they perceived themselves in areas relating to geography, gender, race/ethnicity, physical attractiveness, ability and disability, intelligence, sexual orientation, social class, religion and a number of other factors.

The findings developed and validated two ways for measuring distance from privilege, a common barrier for women in STEM. One, access to

resources, showed social capital and economic resources as major predictive factors. The finding supported a commonly held sociological belief.

“Having money is not the same as having beneficial social connections, and for many less privileged women, scholarships and other support for their education may not, by themselves, provide the necessary social networks that can support and encourage persistence in college and in STEM fields,” Kerr and Multon wrote.

Another factor, distance from privilege status, provided a solid measure of individuals’ perceptions of privileged status and shows that students do often internalize society’s value of gender, race, geographic origin, sexual orientation, religion, social status and other factors.

Kerr has presented their research in identifying talent and helping women persist in STEM to the National Science Foundation and hopes to continue studying distance from privilege in predicting ability in other areas. Both researchers say distance from privilege has potential to affect many areas of study.

In addition to the focus on increasing the number of talented women in STEM, Multon said, “I plan to examine the impact of distance from privilege for those who are leaders in their fields, especially women.”

“My overall goal is to identify and develop talent,” Kerr said. “I’ve taken on looking for talented women. We think this isn’t just important in women, though. We suggest social scientists don’t just use demographic variables as a stand-in for a number of other variables that can provide a better picture of people who can be successful.”

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