

# RESEARCH ON STRATEGIES IN CLASSROOM TEACHING TO ENGAGE GIRLS IN STEM EDUCATION

Qin Li<sup>a</sup>, Liang Qianmin<sup>a</sup>, Yang Wen<sup>a</sup>, Li Baoping<sup>a</sup>, Ren Qingcao<sup>a</sup>

Contact Author: Li Baoping (libp@bnu.edu.cn)

<sup>a</sup> Faculty of Education, Beijing Normal University, 100875, China

## THEME:

Engaging students in STEM education

## BACKGROUND AND AIMS

Although girls can achieve grades in STEM subjects as good as boys, sometimes even better than boys, girls are less likely to persist to STEM-related majors and careers (Witherspoon & Schunn, 2022). Gender stereotypes in classroom may be one of the most important factors to explain the underrepresentation of women in STEM-related areas (Brotman & Moore, 2008). What's more, gender gaps are becoming deeper in upper elementary and middle school. Therefore, early interventions may help shed the light on how to encourage girls to engage in STEM-related areas in the long run.

## METHODOLOGY OR PROCESS(ES) UNDERTAKEN

Based on previous studies, we adopted a lot of practical strategies to create a friendly and inclusive classroom atmosphere for students, especially for girls. These strategies include grouping students by gender, employing gender-neutral experience, offering students opportunities to do hands-on experiments, encouraging discussion, making connections between knowledge and social life and providing positive feedback.

This study was conducted among students in Grade 3 of a primary school in Shenzhen, Guangdong Province. Two classes, 46 students respectively, were randomly selected as experimental group and control group for teaching practice. Specifically, after putting these strategies into practice, researchers used questionnaires and interview method to analyze whether these strategies can help alleviate the negative influence of gender stereotype.

## RESULTS AND CONCLUSIONS

Strategies used in the classroom seemed effective. The results of interviews showed that girls preferred to be grouped by the same gender and feel "science is not only for boys" by making connections between knowledge and social life. They also expressed an improved learning experience when getting relatively equal attention from their teachers. The results of questionnaire showed that students in experimental group disagreed with some statements related to gender stereotypes such as "Boys are more active in thinking than girls".

Although strategies proposed in this study also have some limitations, it is a promising start and attempt to help solve the problems deeply rooted in STEM education and careers.

## REFERENCES

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