Outreach and student motivation in the K-12 STEM field. Teachers’ roles and the connection between industry and school.

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Research Problem:
In this study the central research question is: how can we use outreach activities as effective as possible to support the vision enthusing students for STEM and a career in STEM and to give the students a complete picture of possibilities in STEM?

Summary:
Today’s technology-driven society demands more and better trained STEM students, who have not only acquired the relevant knowledge, but have also mastered 21st century skills. This has been reason for the industrial and corporate world to take initiative in closely interacting with the educational institutions to develop in-field activities: Outreach. As there is little research about the motivational aspect of Outreach, we will focus on the research question: How can we use outreach activities as effective as possible to support the vision enthusing students for STEM and a career in STEM and to give the students a complete picture of possibilities in STEM?

Through descriptive and analytical research of multiple cases in both the US and the Netherlands we will search for correlations between characteristics in materials and teacher’s behavior and a higher motivation and more STEM-career orientation. Cluster analyses will lead to motivation profiles for students and their STEM-career orientation. Also, by setting up a longitudinal study, we will provide insight in the level of long-term effects of the Outreach activities. This can ultimately result in a blueprint for teachers, schools and the industry on how to successfully implement Outreach activities.