

Foto von von bruce mars auf Unsplash

Die verborgene Macht von Worten in der Tech-Bildung



„I‘m blind. Please help!"



„It‘s a beautiful day and I can‘t see it.“

Gleiche Realität.

Andere Worte.

Andere Wirkung.

FERDINAND PORSCHE FERNFH



„Wir sind keine denkenden Maschinen, die fühlen. Wir sind fühlende Maschinen, die denken.“

(Antonio Damasio)

Video von Pixource / Pixabay

Was würden Sie lieber besuchen?

Verteilte Systeme

Wie digitale Systeme zusammenarbeiten?

FERDINAND PORSCHE FERNFH


Video von Coverr-Free-Footage / Pixabay
Worte transportieren nicht nur Informationen. Sie erzeugen mentale Modelle.

FRAMING

nach George Lakoff



Frames sind mentale Deutungsrahmen.

Menschen interpretieren Informationen niemals neutral.
Jede Information wird in einem mentalen Rahmen eingebettet.

WORTE AKTIVIEREN

- Vorstellungen bzw. Bedeutungen
- Sie lenken Aufmerksamkeit
- Beeinflussen Emotionen und Assoziationen

„Steuerlast“

„gesellschaftlicher Beitrag“





Obwohl dieselbe Sache gemeint ist.





Die Worte verändern den **Interpretationsrahmen** bzw. den **Denkrahmen**.



Und genau das passiert auch in der **Bildung**.

Und die spannende Frage lautet:

WELCHE FRAMES ERZEUGEN WIR EIGENTLICH DURCH UNSERE LEHRVERANSTALTUNGSTITEL?

Die Zombie Wörter der Informatik

 Distributed

 Framework

 Architecture

 Optimization

 Advanced

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Sense of Belonging

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Journal for STEM Education Research > Article

The Importance of STEM Sense of Belonging and Academic Hope in Enhancing Persistence for Low-Income, Underrepresented STEM Students

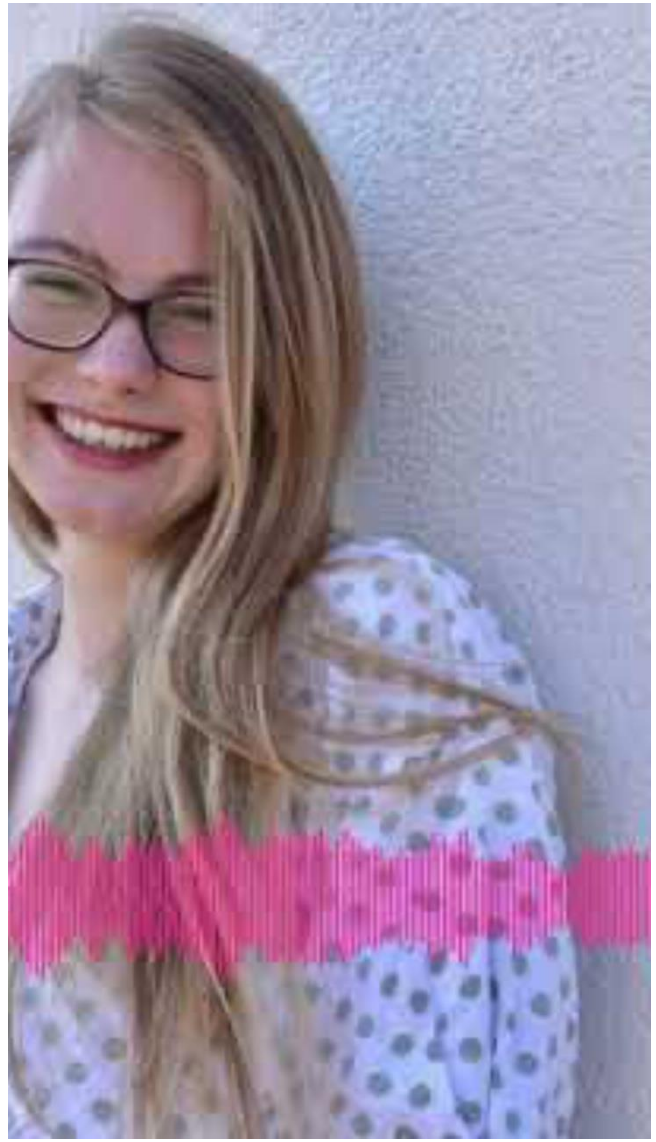
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The Importance of STEM Sense of Belonging and Academic Hope in Enhancing Persistence for Low-Income, Underrepresented STEM Students

Michele J. Hansen; Mathew J. Palakal; Le'Joy White

Journal for STEM Education Research, v7 n2 p155-180 2024

The purpose of this longitudinal investigation was to examine the effectiveness of a comprehensive, integrated curricular and co-curricular program designed to build community, provide academic and social support, and promote engagement in academically purposeful activities resulting in more equitable environments for historically underrepresented, low-income science, technology, engineering, and mathematics (STEM) information technology (IT) students. The study also focused on the role that the sense of belonging and academic hope play in enhancing persistence to degree completion. Program participants had significantly higher persistence rates compared to a matched comparison group. Additionally, STEM-specific belonging and academic hope significantly predicted students' intentions to persist to degree completion in IT. A major finding was that STEM domain--specific belonging was a stronger predictor of persistence than general belonging. Our investigation has implications for the role that cohort-based programs, industry engagement, peer mentoring, proactive advising, undergraduate research opportunities, career preparation, and leveraging need-based financial aid play in ensuring equity in STEM.

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IES Institute of Education Sciences

Social Belonging Interventions

Intervention Report | Supporting Postsecondary Success Topic Area

WHAT WORKS CLEARINGHOUSE™
January 2022

NCEE 2022-005
U.S. DEPARTMENT OF EDUCATION

A Publication of the National Center for Education Evaluation at IES

Large numbers of students who enroll in college do not complete a degree. Yet, earning a college degree is one of the primary pathways for economic success and is increasingly required for good jobs and high wages.[1] *Social Belonging* interventions for college students aim to reduce the impacts of negative stereotypes that may burden students in underrepresented groups and affect their persistence in college. Examples of such groups are racial or ethnic minority groups, women in engineering, and first-generation college students. There are different variations of *Social Belonging* interventions but they all have in common a goal of influencing students' sense that they could be successful within a college setting.[2]

This What Works Clearinghouse (WWC) report, part of the WWC's Supporting Postsecondary Success topic area, explores the effects of *Social Belonging* interventions on postsecondary students' academic achievement, progressing in college, and college enrollment. The WWC identified 14 studies of *Social Belonging* interventions. Seven of these studies meet WWC standards. The evidence presented in this report is from studies of the impact of *Social Belonging* on postsecondary students in less advantaged or underrepresented groups–including Asian, White, Black, Hispanic, first-generation, and female students–in both public and private postsecondary settings.

What Happens When Students Participate in *Social Belonging* Interventions?[3]

The evidence indicates that implementing *Social Belonging* interventions:

- **has inconsistent effects on academic achievement**
- **has inconsistent effects on progressing in college**
- **may result in little to no change in college enrollment**

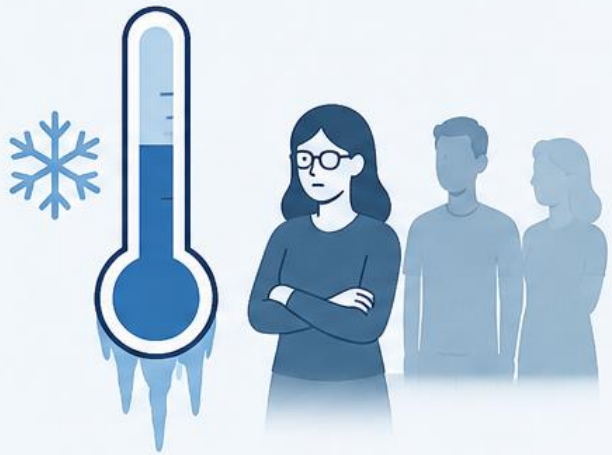
Findings on *Social Belonging* interventions from seven studies that meet WWC standards are shown in Table 1.

The table reports an effectiveness rating, the improvement index, and the number of studies and students that contributed to the findings. The improvement index is a measure of the intervention's effect on an outcome. It can be interpreted as the expected change in percentile rank for an average comparison group student if that student had received the intervention.

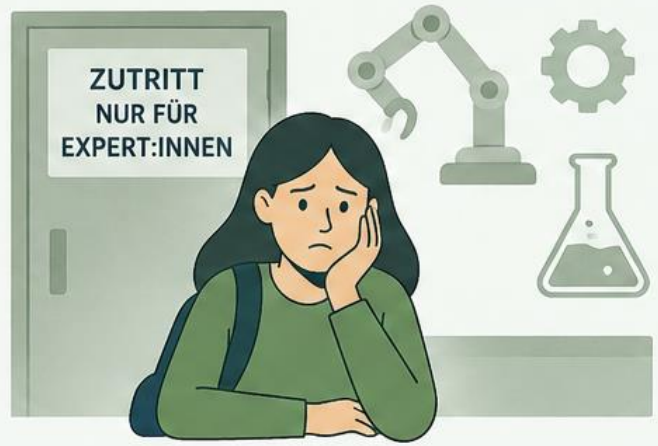
Table 1. Summary of findings on *Social Belonging* interventions from studies that meet WWC standards

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In der Literatur findet man häufig den Begriff des **„Chilly Climate“** in STEM-Fächern.



Viele Studierende berichten, dass sie technische Disziplinen als **wenig einladend** wahrnehmen.



Gerade Frauen und andere unterrepräsentierte Gruppen berichten häufiger von **Unsicherheit** hinsichtlich ihrer Zugehörigkeit.

(Springer Nature)





Die Frage lautet also:

Welche Signale senden wir aus?

?



Ambient Belonging



Raum A	Raum B
Dunkel.	Menschen.
Star-Wars-Poster.	Projekte.
Motherboard.	Gesellschaftliche Wirkung.
Nerd-Klischee.	Teamarbeit.

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❌ Verteilte Systeme

↓

😐

❌ Digitalisierung von Geschäftsprozessen

↓

😴

✅ Systemverbünde & Kooperation

↓

🤔

✅ Digitale Zukunft gestalten

↓

🚀

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Meine These

Worte

↓

Frames

↓

Erwartungen

↓

Wahrgenommene Zugehörigkeit

↓

Interesse

↓

Entscheidungsverhalten

FERDINAND PORSCHE FERNFH

tech she likes

Zwischen

„Verteilte Systeme“

und

„Wie das Internet zusammenarbeitet“

liegen nur wenige Wörter.

Manchmal aber eine ganze Zielgruppe.

FERDINAND PORSCHE FERNFH