

Selected Findings from the Ed.D. Dissertation Research of Katherine Kendall

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This research investigated several educational stratagems that could influence middle school student's tendency to exhibit a desire towards STEM careers, or Vocational Anticipatory Socialization (VAS) factors. The major research questions were:

1. What are the impacts of specific educational stratagems used in middle schools with regards to STEM vocational anticipatory socialization and career development in middle grade students?
2. How does student usage of the online learning platform Learning Blade affect students' aspirations and vocational interests for a STEM career?

Conclusion #1: Middle Schools are not providing students exposure to STEM career information nor are they facilitating opportunities for students to create their own career aspirational identity towards STEM.

- A unannounced visual inspection of 181 locations in 8 middle schools observed the following:
 - **Only 2% of wall postings contained STEM, college or career messaging;** 74% were rules/policies or inspirational messaging and 24% were blank walls
 - 72% of classrooms had no visible STEM equipment
- **School staff are not providing STEM career awareness**
 - 96% of STEM teachers had no prior work experience in STEM fields
 - 83% of STEM teachers are not or only somewhat confident in giving advice on STEM careers/pathways
 - When school counselors were asked to rate their top 5 job duties, no college, career or coursework counseling tasks were selected

Conclusion #2: Significant differences exist between middle school students who use and those who do not use the online learning platform Learning Blade.

In a quasi-experimental survey of 276 students that used Learning Blade vs. students that did not, students who used Learning Blade (LB Users) had improved STEM vocational aspiration, career development plans and STEM-related interpersonal interactions.

Learning Blade users were more likely to intend to pursue STEM careers:

- LB Users were **59% more likely to be interested in a STEM career** (68% of LB users vs. 43% of non-LB users, $p < .001$)
- LB Users were **84% more likely to want a job that designs or builds things** (74% of LB Users vs. 40% of non-LB Users, $p < .001$)
- LB Users were **140% more likely to respond that they knew what STEM workers do** (41% vs. 17%, $p < .001$)
- LB Users were **23% more likely to want to learn about careers** (82% of LB Users vs. 67% of non-LB Users, $p < .05$)

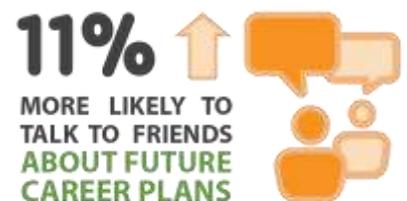
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- Interestingly, there was not a difference between LB users and Non-LB users when asked if science was interesting (61%), indicating that an interest in science alone does not necessarily translate into an intent to pursue STEM careers (schools otherwise comparable in race, gender and free and reduced lunch)

Learning Blade users were more likely to express interest in STEM to others:

- LB Users were **70% more likely to be willing to like to talk about science with others** (52% of LB Users vs. 30% of non-LB Users did not reply “no”, $p < .001$)
- LB Users were **11% more likely to talk with friends about future career plans** (73% of LB Users vs. 65% of non-LB Users, $p < .05$)
- No statistical difference between discussions of math, liking sci-fi books or TV shows, family watching science shows or visiting museums/zoos



Learning Blade users were more likely to believe a STEM career is achievable for them:

- LB Users were **69% less likely to feel that STEM careers take too much schooling** (37% of LB Users vs. 63% of non-LB Users, $p < .001$)
- LB Users were **60% less likely to feel that science is too hard for them** (92% of LB Users vs. 58% of non-LB Users, $p < .001$)



**STUDENTS IN EACH GROUP SHARED COMMON INTERESTS
IN TECH HOBBIES LIKE SCI-FI BOOKS, TV & MOVIES, MUSEUMS, VIDEO GAMES, ETC.**

