



#GOALS

Inspiring Future STEM Professionals:

Evaluating the Impact of the #GOALS Live Experience
on Middle School Students' Career Interest

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● Introduction

Context, Significance, & Research Question

Context

- Middle school is a critical developmental window for career interest and postsecondary aspirations.
- Early exposure to career pathways significantly influences educational goals and college enrollment.
- Students from underserved communities have limited access to healthcare professionals and STEM mentors.
- The #GOALS program was developed to bridge this gap through hands-on experiences and mentorship.

Research Question

How does participation in a live #GOALS event influence students' healthcare career interest, STEM self-efficacy, and motivation?



About #GOALS

Go Out and Love Science

Developed by the Ascension Foundation to inspire middle school students from underserved communities to pursue healthcare and STEM careers.

● Research Questions & Study Goals

Goal: Evaluate the impact of #GOALS on middle school students' healthcare career interest, STEM confidence, and future aspirations.

01

Does participation increase healthcare career interest?

02

Does participation increase STEM self-efficacy?

03

Does participation increase confidence in future educational and career success?

04

Does participation improve students' perceptions of healthcare and STEM careers?

● Background & Theoretical Framework

What the Literature Tells Us

- Early exposure to career pathways positively shapes educational aspirations.
- Healthcare workforce diversity improves patient outcomes and access to care.
- Few programs target healthcare career exploration specifically for underserved middle school students, this is the gap #GOALS addresses

How We Explain It: Two Guiding theories

- Social Cognitive Career Theory (SCCT): Career choices shaped by self-efficacy, outcome expectations, and environmental supports.
- Expectancy-Value Theory (EVT): Students pursue careers they value and believe they can succeed in.

Key Constructs Measured

From SCCT:

- Self-efficacy (confidence in ability)
- Outcome expectations
- Environmental supports and barriers

From EVT:

- Career value (does this career matter to me?)
- Expectation of success (can I do this?)
- Motivation to pursue healthcare pathways

Together, these explain how #GOALS influences career decisions.

Multilevel Framework Guiding the Evaluation

Why Do Students Choose Healthcare Careers?

Students' career interests are influenced by multiple levels:

System Level	Policy Level	Program Level	Student Outcomes
Healthcare workforce shortages	STEM initiatives	#GOALS Live Event	Healthcare career interest
Health inequities	Career exploration opportunities	Medical simulations	STEM confidence
Limited role models	School-community partnerships	Healthcare mentorship	College aspirations
Career awareness gaps	Educational resources	Roblox exploration	Self-efficacy & motivation

Key Message:

#GOALS addresses barriers at multiple levels while helping students envision themselves in future healthcare careers.

● Methodology

Study Design: Pre and Post Program Evaluation Design

Pre & Post Surveys

- Administered 2 weeks before and after program participation
- Matched pre-post responses for within-subject comparison
- Structured, school-coordinated setting for consistency

Roblox Game

- Custom healthcare-themed #GOALS Roblox game
- Simulated medical tasks and career exploration activities
- Assessment questions embedded within gameplay

Measures

- Healthcare career interest
- STEM self-efficacy
- Educational aspirations
- Motivation and career confidence

Participants

334

Total Students

Nashville, TN & Baltimore, MD

142

Matched Sample

Completed both pre & post surveys

Gr. 5-8

Grades Served

Underserved communities

Study Sites

Nashville, TN: Haynes Middle School - Grades 6-8 (185 students, 73.4% of enrollment)

Baltimore (North Bend): North Bend Elementary/Middle School - Grades 6-8 (90 students, 68.7%)

Baltimore (St. Ignatius): St. Ignatius Academy - All-boys, Grades 5-8 (59 students, 50%)



● Results: Healthcare Career Interest

In-Game Survey Data (Scale: 1-5 Likert)

Survey Item (In-Game)	Pre-Event	Post-Event	Sig.
I believe someone like me could work in healthcare.	3.50	3.85	*
I can see myself working in a hospital or clinic someday.	3.46	3.93	*
I would feel proud to tell others I was training for a job in healthcare.	3.59	4.08	*

** $p < 0.05$ - In-game data shown; paper-based surveys showed limited sensitivity due to social desirability bias*

Key Findings

- Significant increase in students' confidence in healthcare careers.
- Students demonstrated stronger ability to envision themselves in healthcare settings.
- Increased pride in healthcare professions, a key driver of career identity formation.



● Results: STEM Self-Efficacy & Confidence

In-Game Survey Data (Scale: 1-5 Likert)

Survey Item (In-Game)	Pre-Event	Post-Event	Sig.
I feel confident I can do well in a job that helps patients.	3.49	4.13	*
I feel confident doing experiments or solving health-related problems.	3.69	4.04	*
Do you believe you can get into college?	4.29	4.54	*
Do you believe you can achieve your dreams?	3.73	4.38	*

* $p < 0.05$

Highlight: College Aspiration

4.29 → 4.54

"Do you believe you can get into college?"

- Meaningful gains in confidence to help patients and solve health problems.
- Belief in college access and achieving dreams both improved significantly.
- #GOALS is building students' confidence in their own future potential.

● Results: Importance of Science & Future Careers

In-Game Survey Data (Scale: 1-5 Likert)

Survey Item (In-Game)	Pre-Event	Post-Event	Sig.
Do you like science?	3.97	4.39	*
Learning math and science is important for my future.	4.20	4.25	-
Do you think your actions made a difference for people?	3.87	4.28	*
I like trying things that are difficult because I learn more.	3.64	4.32	*

** $p < 0.05$ - Not statistically significant*

Key Findings

- Increased interest in science.
- Greater belief that their actions can positively impact others.
- Increased willingness to take on challenges and learn from them.
- Stronger motivation and growth mindset toward future learning.

● Paper Survey vs. Game Based Assessments

Table 1: Internal Consistency - "Did you play the #GOALS Roblox game?"

True State	Response	# Students	Avg. Rating
No	Yes	15	3.87
Yes	No	14	3.57
No	No	12	4.58



#GOALS Roblox Game Environment

Key Findings

- In-game assessments showed larger, more consistent gains than paper surveys.
- Game environment may reduce 'please the adult' bias, yielding more authentic student responses.
- Game-based assessment tools show strong promise for evaluating student attitudes at scale.

● Why #GOALS Matters

Why Does This Work Matter?

For Students

- Builds confidence in STEM and healthcare careers
- Increases awareness of educational pathways
- Provides exposure to healthcare professionals

For Communities

- Expands opportunities for underserved students
- Strengthens future healthcare workforce pipelines
- Promotes diversity and representation in healthcare professions

For Education

- Demonstrates the value of experiential learning
- Combines mentorship, hands-on activities, and technology
- Provides a scalable model for career exploration

Key Takeaway

#GOALS helps students believe that a future in healthcare is possible, achievable, and meaningful.



Conclusions

Healthcare Career Interest:

Significant increases in students' interest and ability to envision a future in healthcare settings.

STEM Self-Efficacy:

Measurable gains in confidence - including belief in college access, helping patients, and achieving dreams.

Game-Based Assessment:

Roblox in-game data produced stronger, more consistent results - game-embedded measures may better capture authentic attitudes.

Program Promise:

#GOALS offers a promising, scalable approach to early career exploration through experiential, immersive learning.

Recommendations & Future Work

- 01 Continue longitudinal tracking to assess long-term educational and career outcomes.

- 02 Evaluate long-term impact of #GOALS on actual enrollment in healthcare and STEM programs.

- 03 Expand and further develop Roblox-based engagement and assessment tools.

- 04 Explore scalable models for healthcare career pathway programs in additional cities.

- 05 Improve survey reliability and reduce social desirability bias through mixed-method and game-based instruments.

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