

An Evaluation of Math Corps

ANNUAL EVALUATION REPORT



2024-2025



NATIONAL
Science & Service
COLLABORATIVE

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About the National Science & Service Collaborative

We believe partnerships between researchers, AmeriCorps programs, and communities can transform research and practice, leading to sustainable, community-driven solutions. We value a broad and inclusive definition of “collaboration” because improving societal outcomes is maximized when the tools of science, expertise of communities, and resources of AmeriCorps are deployed in a truly collaborative way.

The Center’s portfolio includes projects to evaluate the impact of AmeriCorps programming, projects to advance the existing knowledge base in education, and development projects to bring new and innovative programming to communities across the nation.

<https://nssc.serveminnesota.org/>

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Executive Summary

Math Corps is an AmeriCorps program that provides schools with trained tutors to support math development for students in either Kindergarten through Grade 3 or Grade 4 through Grade 8. Math Corps tutors are trained to implement evidence-based math instruction focused on improving student skills in foundational math content areas related whole and rational number understanding —skills identified by the National Mathematics Advisory Panel (2008) as essential to overall math success. Tutors receive intensive, information-filled training and are supported by a multi-level coaching model that includes site-based and external coaches.

Tutors work with students in pairs or groups of three for 90 to 100 minutes each week. The research-based tutoring interventions are supplemental to the core math instruction provided at each school. External evaluators have conducted numerous rigorous evaluations, and these evaluations show Math Corps has a positive impact on student math skills. Math Corps has been thoroughly reviewed by independent experts at Stanford University's National Student Support Accelerator, Johns Hopkins University's Evidence for ESSA clearinghouse, and the Institute of Education Science's What Works Clearinghouse. In all cases, the program was determined to have the highest possible levels of evidence.

Key Findings from the 2024-25 Evaluation

Math Corps served 17,656 students, delivering over 750,000 tutoring sessions.

In the 17th year of program operation, 686 Math Corps tutors served a total of 17,656 students across 9 states. Tutors delivered 751,550 evidence-based tutoring sessions. Participating students received an average of 43 tutoring sessions across 18 weeks. Coaching observations show program interventions were conducted with high levels of mean fidelity and in accordance with their established evidence base.

87% of students improved their math skills.

Tutors administer a program developed math assessment to identify eligible students and measure student progress. The assessment content aligns with state and national curricular standards related to whole and rational number understanding as well as algebraic reasoning. Seasonal benchmark performance on the assessment shows 87% of students improved their math skills. Additionally, 57% of students improved their performance by at least 20 percentage points, which is associated with a 2-times or greater increase in their odds of meeting grade-level benchmarks.

Tutors and coaches see the positive impact of the program.

When asked in a survey about the impact of the program on students, 98% of tutor and Internal Coach respondents indicated participation in Math Corps had a positive impact on students. Furthermore, 95% of tutors indicated they would recommend serving in Math Corps to others, and 96% of tutors agreed or strongly agreed that Math Corps had a positive impact on them personally.

Math Corps Program Model

Launched in 2008, Math Corps is an AmeriCorps program that provides schools with tutors to support math development for students in grades K



through 8. The theory of change underlying Math Corps is that high-dosage tutoring provided by

AmeriCorps members will help

schools meet the math needs of students and increase the number of students achieving math proficiency by eighth grade.

The Math Corps model aligns with Response-to-Intervention (RTI) or Multi-Tier System of Supports (MTSS), which are two descriptions of a framework for delivering educational services effectively and efficiently. The key aspects of that alignment include the following:

- Data-driven screening decisions identify students who are at-risk for poor math outcomes
- Evidence-based interventions
- Formative assessment
- High quality training in program procedures, coaching, and observations to support fidelity of implementation.

Screening

Math Corps tutors administer a program developed assessment called Mathway to students during three seasonal

benchmark windows. The assessment content aligns with state and national curricular standards related to whole and rational number understanding as well as algebraic reasoning. Mathway is specific to each grade and consists of 23 to 34 items that increase in difficulty. The web-based assessment provides information on overall student performance for program eligibility and can be disaggregated by intervention units for intervention decision-making.

Tutors also administer a fact fluency assessment in conjunction with Mathway. This one-minute multi-skill probe includes basic addition, subtraction, multiplication, and division math facts. Students who score below the fact fluency benchmark of 30 problems correct per minute receive math fact practice during at least one tutoring session each week.

Evidence-Based Interventions

Math Corps is focused on improving student skills in foundational math content areas related whole and rational number understanding —skills identified by the National Mathematics Advisory Panel (2008) as essential to overall math success. The program lessons are mastery-focused across conceptual, procedural, and practical applications. Tutoring is provided through standard-protocol interventions and is complementary to the core math instruction provided at each school.

Tutors serve in schools in either a full-time or part-time capacity. Full-time tutors work with a minimum of 24 students each day while part-time tutors work

with at least 14 students. Tutors deliver 90-100 minutes of tutoring per week to students in pairs or groups of three.

Formative Assessment

The program uses formative math assessments to measure the progress of students while they are receiving tutoring. Tutors deliver a "unit mastery assessment" or a "stop and check" once every 1-2 weeks for every student they are tutoring. These brief assessments determine whether students have mastered skills practiced in tutoring and can move on to new lessons or units that practice additional skills.

Tutors and coaches monitor student progress through lessons and units and make data-based decisions on intervention effectiveness. Students' fact fluency skills are also monitored on a weekly basis using a computer-based application.

High-Quality Training and Ongoing Coaching

Math Corps tutors receive training through an online Learning Management System (LMS). The intensive, information-filled courses on the LMS provide foundational training in the research-based math interventions employed by Math Corps. Throughout the courses, tutors learn the skills, knowledge, and tools needed to serve as math interventionists.

Tutors are provided with detailed manuals as well as online resources that mirror and supplement the contents of the manual (e.g., videos of model interventions and best practices). Both the manuals and online resources are intended to provide tutors with just-in-time support and opportunities for

continued professional development and skill refinement. Additional training is provided throughout the tutors' year of service.

In addition to extensive training, Math Corps provides tutors with multiple layers of supervision to ensure integrity of program implementation. Schools identify a staff member to serve as an Internal Coach, who is typically a math specialist, teacher, or curriculum director, to serve as immediate on-site supervisor, mentor, and advocate for tutors. The Internal Coach's role is to monitor tutors and provide guidance in the implementation of Math Corps assessments and interventions. As the front-line supervisor, the Internal Coach is a critical component of the supervisory structure.

Coaching Specialists, who are either program staff or contracted consultants for Math Corps, provide both tutors and Internal Coaches with expert support on math instruction and ensure implementation integrity of Math Corps program elements.

Both Internal Coaches and Coaching Specialists conduct ongoing monitoring and observation of tutors. During regular coaching sessions, Coaching Specialists and Internal Coaches discuss student selection for service, track student progress for data-based decisions, and observe tutors delivering interventions. The observations allow coaches to build on a tutor's formal training and to help tutors improve their implementation of the Math Corps model.

In addition to these two coaching layers, a third layer consisting of AmeriCorps program support helps ensure a

successful year of AmeriCorps service. Program support staff are Math Corps employees who provide administrative oversight for program implementation to schools participating in Math Corps.

Program Evidence

Several impact evaluations form the core of evidence for Math Corps. These evaluations employed highly rigorous methods and produced statistically significant and practically meaningful results. Specifically, the studies demonstrated that students

Multiple rigorous evaluations show Math Corps has a positive impact on student math skills.

participating in Math Corps had higher year-end performance on both math facts and a comprehensive assessment of math skills.

The Math Corps program has also been thoroughly reviewed by independent experts at Stanford University's National Student Support Accelerator, Johns Hopkins University's Evidence for ESSA clearinghouse, and the Institute of Education Science's What Works Clearinghouse. In all cases, the program was determined to have the highest possible levels of evidence.

For more information on the Math Corps evidence base visit

<https://nssc.serveminnesota.org/ameri-corps-impact/math-corps>.

Math Corps Delivers Over 750,000 Tutoring Sessions

Tutors and Students in 2024-25

Math Corps started in Minnesota in 2008 serving students in Grades 4 through 8. In 2020 the program expanded to also serve students in Kindergarten through Grade 3. Tutors are placed into either the Grade K-3 program and serve in an elementary school or into the Grade 4-8 program and serve in an elementary, middle, or junior high school.

Table 1 displays the number of cities, districts, and schools that had at least one tutor and the number of tutors in each grade level program. A total of 686 tutors served students, with more tutors placed into the Grade 4-8 program than in the Grade K-3 program. Note many schools have tutors in both program levels and are counted in both groups in the below table.

Table 1. Cities, Districts, Schools, and Tutors by State

State	Cities	Districts	Schools	Tutors*
Grade K-3 Program	135	133	240	286
California	5	5	8	9
Colorado	4	2	5	5
Georgia	1	1	7	14
Michigan	3	2	6	6
Minnesota	103	103	175	201
Mississippi	4	4	14	17
North Dakota	7	7	8	8
New York	2	4	8	17
Wisconsin	6	5	9	9
Grade 4-8 Program	166	156	327	400
California	16	18	46	67
Colorado	12	11	21	27
Georgia	24	11	58	80
Michigan	20	16	31	36
Minnesota	83	85	143	159
Mississippi	3	3	11	13
North Dakota	6	6	7	8
Wisconsin	2	6	10	10

*Defined as having entered tutoring minutes for at least one student in program data management system.

Students are identified as good candidates for Math Corps participation through a two-step process. First, teachers or other school staff recommend students for Math Corps based on student performance or

previous service. Second, tutors administer a program developed math assessment. Students who score below the benchmark target that is linked to future academic success are eligible to receive Math Corps tutoring.

After identifying eligible students, the tutor works with their Internal Coach to select which students will be served based on a number of factors such as the school's schedule and other services

Math Corps tutors served 17,656 students across 9 states.

available to eligible students. Full-time tutors aim to serve 24 or more students each day while part-time tutors work with at least 14 students each day.

Table 2 displays the number of students served by program level in each state. A total of 17,656 students received tutoring during the 2024-25 school year.

Table 2. Students Tutored by State and Program Level

State	Grade K-3 Program	Grade 4-8 Program	Total
California	212	2,003	2,215
Colorado	133	853	986
Georgia	331	2,029	2,360
Michigan	237	997	1,234
Minnesota	5,186	3,743	8,929
Mississippi	377	326	703
North Dakota	165	156	321
New York	364	0	364
Wisconsin	221	323	544
Total	7,226	10,430	17,656

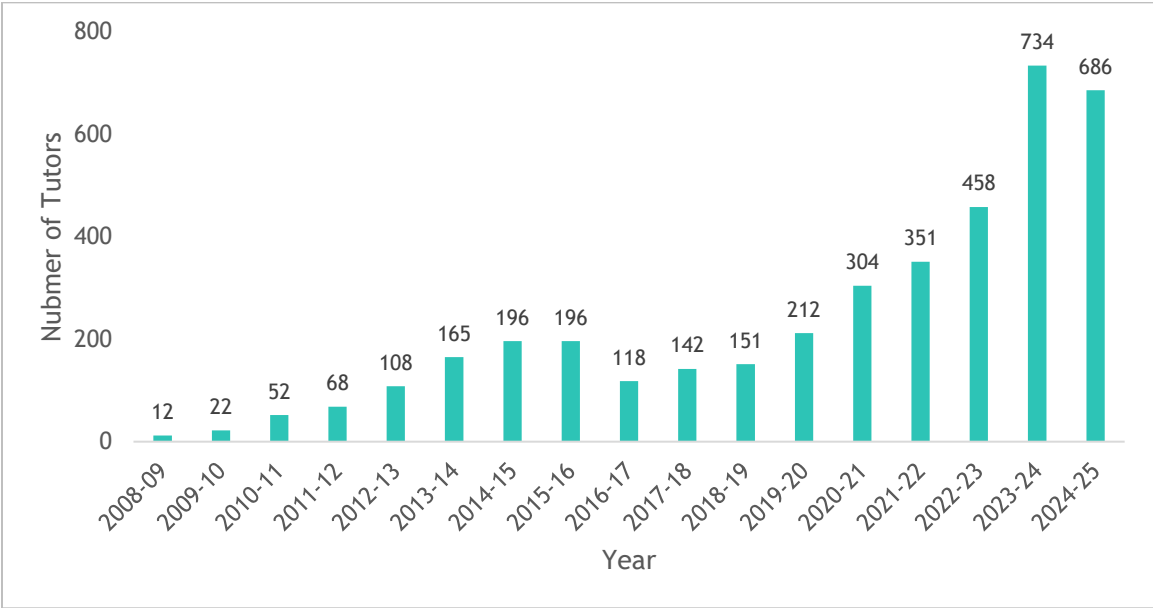
Tutors and Students by Year

Math Corps started during the 2008-09 school year with just 12 tutors serving in one state. The program then grew each year by adding more tutors and states, reaching its peak in the 2023-24 school year with over 700 tutors. The number of tutors serving in any year is based on a

number of factors including federal grants awarded, private funding, and tutor recruitment.

Figure 1 displays the number of tutors who served each year of the program. 686 tutors served in 2024-25, the second most tutors serving in any year in the program's history.

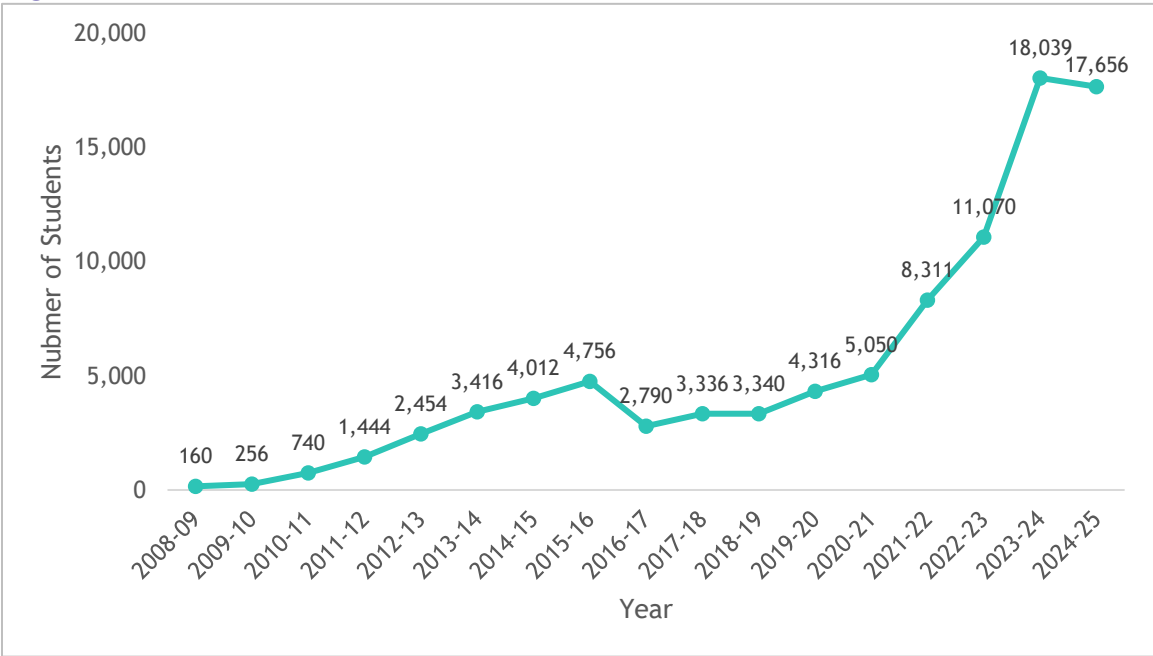
Figure 1. Tutors Serving by Year



The number of students served varies by program year based mostly on the number of tutors serving, but is also impacted by the types of tutors serving (i.e. full-time or part-time) and the frequency of students exiting or graduating from the program.

Figure 2 displays the number of students who were tutored each year of the program. 17,656 students were tutored in 2024-25. Note the number of students served in 2019-20, 2020-21, and 2021-22 were significantly impacted by the COVID-19 pandemic.

Figure 2. Number of Students Tutored by Year



Tutoring Sessions

Tutors in the grades K-3 program strive to work with each student on their caseload for 20 minutes each day, five days per week with tutoring delivered in pairs. Tutors in the grades 4-8 program work with students for 90 minutes per week in pairs or groups of three students. Tutors record each student's daily minutes in the online Math Corps Data Management System.

Table 3 shows the total number of tutoring sessions and the average number of sessions and weeks of tutoring students received in each program level. Math Corps tutors delivered a total of 751,550 tutoring sessions, with students averaging 43 tutoring sessions across 18 weeks.

Math Corps tutors delivered over 750,000 tutoring sessions.

Table 3. Tutoring Dosage by Program Level

Program Level	Students Tutored	Total Tutoring Sessions	Average Tutoring Sessions per Student	Average Tutoring Weeks per Student
Grades K-3	7,226	337,563	46.7	16.0
Grades 4-8	10,430	413,987	39.7	18.6
Total	17,656	751,550	42.6	17.5

Tutor Fidelity

Coaching Specialists and Internal Coaches complete a fidelity checklist for each intervention they observe during coaching sessions. The checklist includes the important steps for accurate implementation such as introducing the lesson and modeling how to complete problems. After completing an observation coaches enter the number of checklist items that the tutor delivered correctly into the online Math Corps Data Management System. The percent fidelity is then

calculated by dividing the number of items delivered correctly by the total number of items.

Table 4 displays the total number of fidelity checks completed and the average intervention fidelity by grade level program. Coaches completed nearly 5,000 fidelity checks during their coaching observations. Tutors averaged about 95% fidelity, indicating interventions were delivered in alignment with their evidence base.

Table 4. Intervention Fidelity

Program Level	Total Checks Collected	Average Fidelity
Grades K-3	2,201	94.9%
Grades 4-8	2,736	94.6%

Students Improve Math Skills

Student Performance on Mathway Assessment

Participating students take the program developed Mathway assessment during three seasonal benchmark windows. A student's performance on the assessment allows the program to measure the student's growth during the year.

Table 5 displays Mathway assessment data for participating students who received 6 or more weeks of Math Corps

tutoring. Overall, 87% of students demonstrated growth in their math skills, indicating an increase in their likelihood of meeting grade-level benchmarks. The last column shows 57% of students improved their Mathway performance by at least 20 percentage points, which is associated with a 2-times or greater increase in their odds of meeting grade-level benchmarks.

87% of students improved their math skills.

Table 5. Mathway Growth for Participating Students

Grade	Number of Students with Two Benchmarks	Percentage Making Growth	Percentage Making 20 Percentage Point Growth
Grades K-3 Total	5,930	93.2%	75.4%
Grade K	1,188	94.6%	79.1%
Grade 1	1,431	90.9%	74.6%
Grade 2	1,672	95.0%	81.0%
Grade 3	1,639	92.3%	67.5%
Grades 4-8 Total	8,674	82.1%	44.5%
Grade 4	2,861	89.1%	60.1%
Grade 5	2,758	78.4%	31.7%
Grade 6	1,355	82.1%	44.3%
Grade 7	961	77.1%	42.9%
Grade 8	739	75.6%	34.1%
Total	14,604	86.6%	57.0%

Note: Includes students with at least two Mathway scores and 6 or more weeks of tutoring.

Student Performance on Fact Fluency Assessment

During the three seasonal benchmark windows participating students in Grades 1 through 8 take a one-minute fact fluency assessment to track student progress on basic math fact skills and determine if students should receive fact fluency support during tutoring. Table 6 displays the average fact fluency score

collected before tutoring begins, the final score of the program year, and the percent of students improving their fact fluency skills. Overall, 71% of students improved their fact fluency performance, with the average student improving their score by 3.5 items correct during the one-minute assessment.

Table 6. Fact Fluency Average Growth

Grade	Number of Students with Two Scores	Average Initial Score	Average Final Score	Average Growth	Percent Making Growth
Grade 1	801	1.6	3.2	1.5	63.3%
Grade 2	1,394	3.3	5.8	2.5	70.7%
Grade 3	1,406	3.5	6.7	3.2	71.4%
Grade 4	2,644	5.1	9.1	3.9	73.9%
Grade 5	2,530	7.5	11.8	4.3	74.2%
Grade 6	1,231	9.7	13.6	3.9	69.0%
Grade 7	856	11.0	14.3	3.3	67.2%
Grade 8	653	12.0	15.0	3.0	64.8%
Total	11,515	6.3	9.8	3.5	71.0%

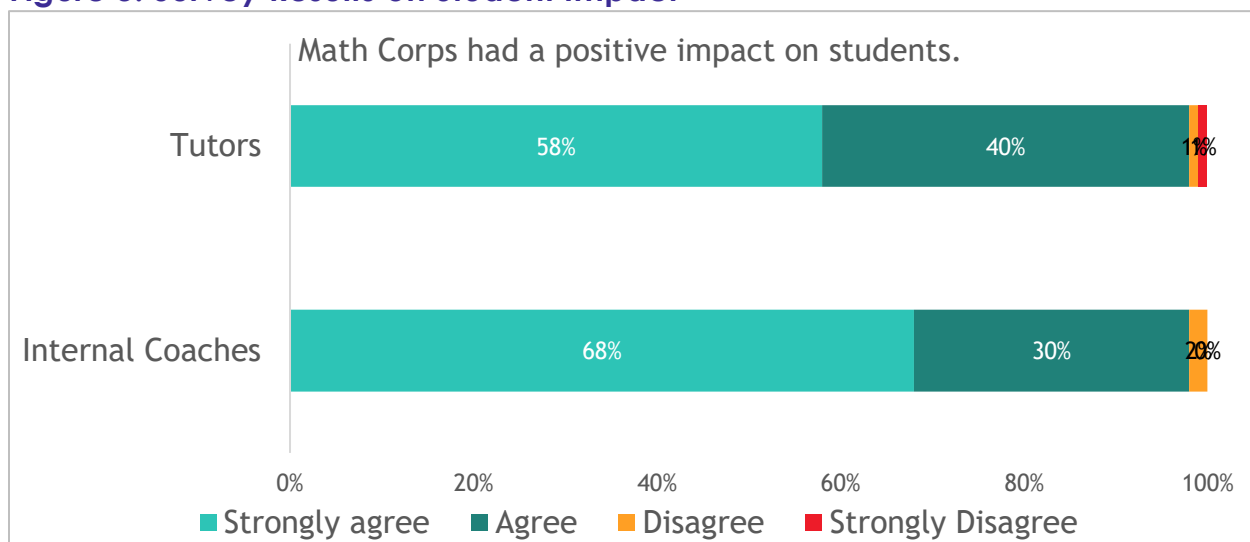
Note: Includes students with 6 or more weeks of tutoring.

Perceptions of Student Performance

In the spring of each program year Math Corps evaluators distribute an online survey to tutors and Internal Coaches. The survey asks a wide-range of questions regarding their experience with Math Corps and potential impact of the program. Figure 3 displays the percentage of respondents who agreed or disagreed that Math Corps had a positive impact on students. The survey results are notably positive with nearly all respondents agreeing or strongly

agreeing that Math Corps had a positive impact on students.

"It is so great to provide support for students who need it and otherwise would not get as much direct instruction time. It supports our teachers in that way, too."
– Math Corps Internal Coach

Figure 3. Survey Results on Student Impact

Note: Coaches were asked to agree or disagree with the statement "Partnering with the program(s) has had a positive impact on my site's primary beneficiaries (e.g., students)" while tutors were asked "My service has had a positive impact on the primary beneficiaries of the program (e.g., students)."

Math Corps Service Positively Impacts Tutors

Service Experience

While supporting student math growth is the primary goal for the program, Math Corps also strives to provide tutors with an overall positive experience. As previously described, Math Corps evaluators distribute a survey to tutors in the spring of each program year. The survey asks tutors a series of questions on their experience in Math Corps and the impact the program had on them, their students, and their school. Survey results are used to evaluate the program's impact on the tutors themselves.

Figure 4 shows that 95% of tutors would recommend serving as a member of Math Corps, with the majority of these respondents indicating they would definitely recommend the program. These results suggest tutors had a highly

positive experience while serving with Math Corps.

The survey also asked tutors if serving in Math Corps had a positive impact on them personally. Figure 5 shows that 96% of tutors agree or strongly agree service had a positive impact on them, demonstrating the positive personal impact of serving.

"I think serving with AmeriCorps is life-changing. For myself it really put in perspective what I would want to do for the rest of my life. It helped me to recognize the skills that I have."
- Math Corps Tutor

Figure 4. Tutor Satisfaction

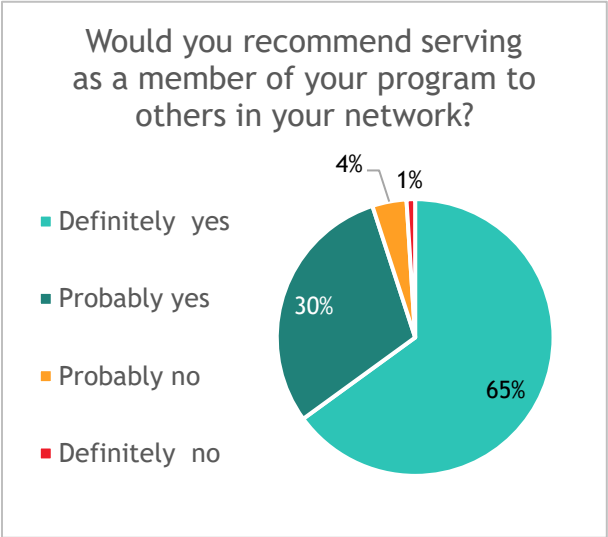


Figure 5. Impact on Tutor

