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Understanding the Impact of Peer-Led Workshops on Student Learning

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Abstract

As students we often wonder why some subjects are easy to understand and requires not much effort in terms of re-reading the material, for us to grasp what it entails. One subject seems to remain elusive and uneasy for a vast majority of learners at all levels of education; that subject is Mathematics, it is one subject that most learners finds difficult even after doubling the amount of time spent on studying the material. My intention is to explore ways to make Mathematics easier for other students using feedback from students enrolled in NSF mathematics peer leading workshops, and use these data feedbacks to simplify student learning.

In order to design a simplified approach to learning, I will be applying learning theories such as Polya's Problem Solving, Tuckman's Team Development Model, Vygotsky's Zone of Proximal Development (ZPD) to name a few, in the peer-led or CO group workshops. The impact of the application of the aforementioned theories shall be used in analyzing how learners respond through observation. To gather reliable data, learners shall be asked through two surveys; first of which will be conducted at the middle of the semester, because by then learners and peer-leaders will have had enough sessions to thoroughly provide assessment that can be used to form a baseline. The second survey shall be conducted at the end of the semester and the data used in comparison to the former for forming a conclusion on the impact of peer-led workshops. Questions I intend to answer are: what are the obstacles students perceive hinders them from learning mathematics; and ways in which peer-led workshops might help students overcome such obstacle(s). Thoughts and suggestions offered by students will also be considered for application with future students.

Upon completion, I hope the limitations of the data sample can be overcome by been reduplicated in other colleges outside CUNY, for a more comprehensive approach that can simplify students learning in Mathematics and the influence of peers in learning any challenging skill or subject. The implications of this study are that mathematics doesn't have to be difficult and can even be as easy or easier compared to other subjects.

Introduction

Peer-led team learning (PLTL) is a group learning that has gained popularity at undergraduate level. PLTL in mathematics involves peer leaders engaging and assisting groups of students in mathematical problem solving. The study has been influenced by several theories such as: Polya's Problem Solving, Tuckman's Team Development Model, and Vygotsky's Zone of proximal development (ZPD). A purpose of this study is to examine the effect of the peer-led workshops on student learning and more specifically the student perception of how they have improved during one semester of participating in PLTL.

Methodology

Data was collected based on a ten (10) question (paper & online) survey, which was administered in the middle of the semester (prior to the midterm examinations), and towards the end of the semester. The survey was sent to twenty one (21) students--11 male and 10 female students— of MAT 1275: on College Algebra and Trigonometry. All of the students responded submitting their survey responses online. Students were encouraged to give an objective feedback, and offer comment and observations.

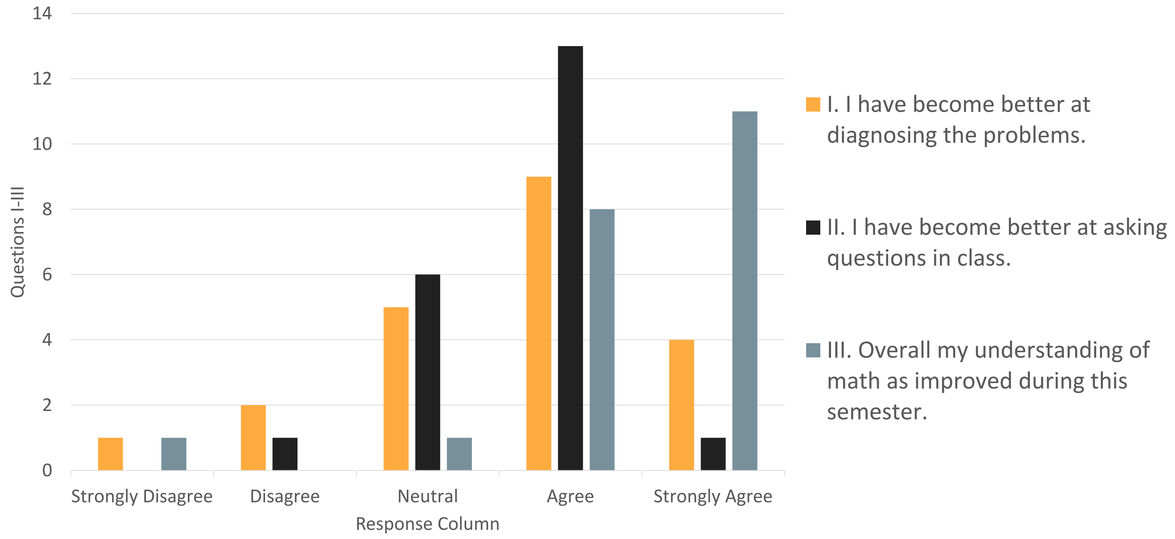
Survey Results

Table 1 below summarizes all survey responses by questions:

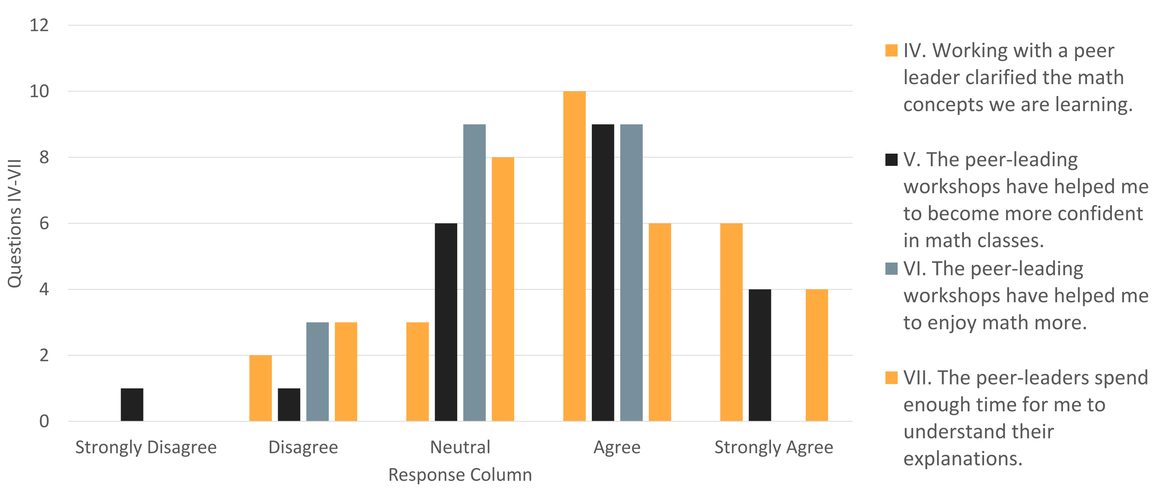
Response / Questions	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %
Better at diagnosing problems	4.8	9.5	23.8	42.9	19
Improvement in asking questions	0	4.8	28.6	61.9	4.8
Overall understanding	4.8	0	4.8	38.1	52.4
Impact of peer-leaders	**0**	**9.5**	**14.3**	**47.6**	**28.6**
Impact of peer-leaders on confidence	**4.8**	**4.8**	**28.6**	**42.9**	**19**
Interest in math.	0	14.3	42.9	42.9	0
Time spent by peer leaders.	0	14.3	38.1	28.6	19
Finding own errors	0	4.8	19	57.1	19
Increased interest	0	9.5	33.3	47.6	9.5
Overall peer-leader impact	**0**	**9.5**	**33.3**	**19**	**38.1**

Table 1

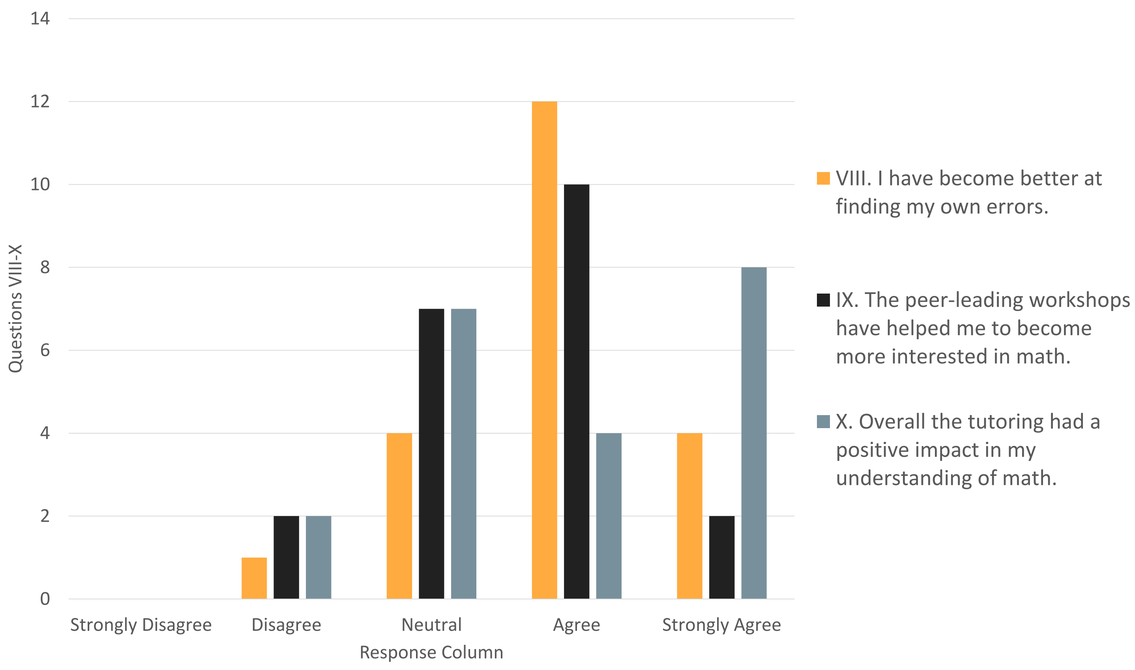
Analysis: MAT1275 survey response Questions I-III



Analysis: MAT1275 survey response Questions IV-VII



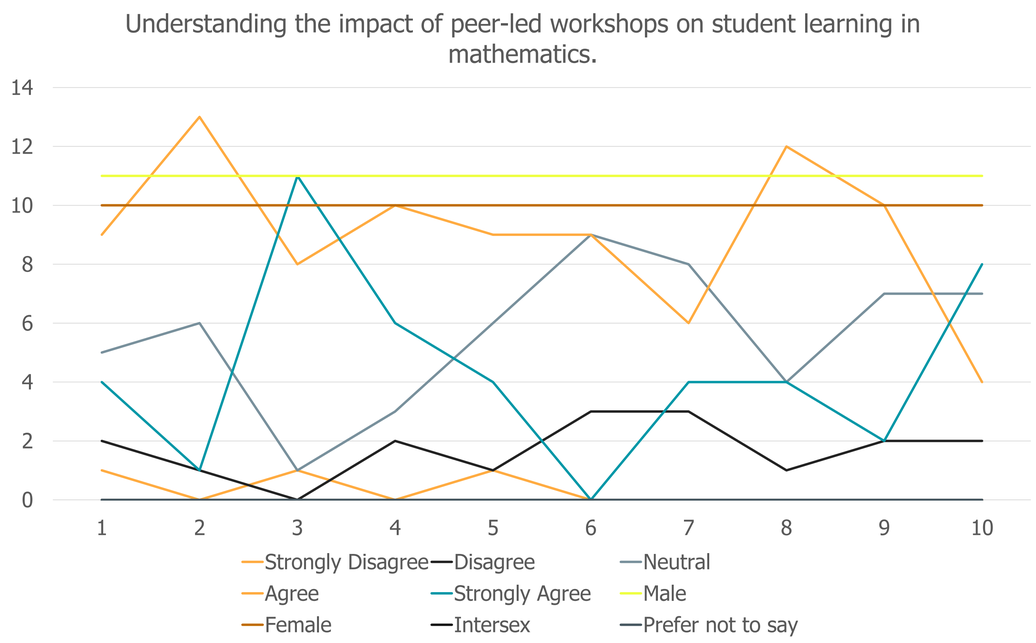
Analysis: MAT1275 survey response Questions VIII-X



Conclusion

Improvement to the learning process is to be considered, but it is imperative that peer-leaders and tutee's understand that – for any learning to be effective, students also need to make a commitment to learning that subject by studying. While the data is too small to make a generalize conclusion the following can be said:

- ❖ Students are more confident in mathematics as a result of peer leaders involvement.
- ❖ Peer leaders have a positive impact in students mathematics understanding.
- ❖ Overall peer-leaders are effective in clarifying mathematics to students in MAT1275.
- ❖ Most students report that they have become more interested in mathematics.
- ❖ Peer-leaders --through clues and hints--are able to help students build confidence.
- ❖ A strong correlation exists between having a peer-leader and not having one based on the strong linear relation (r - value) of 0.85 obtained as shown below.



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