Understanding the Impact of Peer-Led Workshops on Student Learning

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Understanding The Impact of Peer-Led Workshops on Student Learning

Afolabi Ibitoye - Mentors: Dr. Nadia Kennedy, Prof. Armando Cosme

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.

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 mathematics 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:

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree %</th>
<th>Disagree %</th>
<th>Neutral %</th>
<th>Agree %</th>
<th>Strongly Disagree %</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. I have become better at diagnosing problems.</td>
<td>4.8</td>
<td>9.5</td>
<td>23.8</td>
<td>42.9</td>
<td>19</td>
</tr>
<tr>
<td>II. I have become better at asking questions in class.</td>
<td>0</td>
<td>4.8</td>
<td>28.6</td>
<td>41.9</td>
<td>4.8</td>
</tr>
<tr>
<td>III. My overall understanding of math as improved during this semester.</td>
<td>4.8</td>
<td>9.5</td>
<td>14.3</td>
<td>47.6</td>
<td>28.6</td>
</tr>
<tr>
<td>IV. Working with a peer leader clarified the math concepts we are learning.</td>
<td>0</td>
<td>4.8</td>
<td>28.6</td>
<td>41.9</td>
<td>9.5</td>
</tr>
<tr>
<td>V. The peer-leading workshops have helped me to become more confident in math classes.</td>
<td>0</td>
<td>4.8</td>
<td>28.6</td>
<td>41.9</td>
<td>9.5</td>
</tr>
<tr>
<td>VI. The peer-leading workshops have helped me to enjoy math more.</td>
<td>0</td>
<td>4.8</td>
<td>28.6</td>
<td>41.9</td>
<td>9.5</td>
</tr>
<tr>
<td>VII. The peer-leading workshops have helped me to become more interested in math.</td>
<td>0</td>
<td>4.8</td>
<td>28.6</td>
<td>41.9</td>
<td>9.5</td>
</tr>
<tr>
<td>VIII. The peer-leading workshops have helped me to become more interested in math.</td>
<td>0</td>
<td>4.8</td>
<td>28.6</td>
<td>41.9</td>
<td>9.5</td>
</tr>
<tr>
<td>IX. The peer-leading workshops have helped me to become more interested in math.</td>
<td>0</td>
<td>4.8</td>
<td>28.6</td>
<td>41.9</td>
<td>9.5</td>
</tr>
<tr>
<td>X. Overall the tutoring had a positive impact in my understanding of math.</td>
<td>0</td>
<td>4.8</td>
<td>28.6</td>
<td>41.9</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Table 1

Analysis: MAT1275 survey response Questions I-III

Analysis: MAT1275 survey response Questions IV-VII

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.

Understanding the impact of peer-led workshops on student learning in Mathematics.

Acknowledgments

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References