# INCREASING 9TH GRADE STUDENTS’ PROFICIENCY IN MATHEMATICS: A GAP ANALYSIS OF A PRIVATE SCHOOL IN GHANA

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## PURPOSE

To conduct a gap analysis to examine the root causes of the low percentage of 9th grade students at the institution’s achievement on the BECE mathematics examination.

## METHODS

### STUDY QUESTIONS

- **What are the knowledge, motivation, and organizational challenges for mathematics teachers to use effective instructional practices to teach the 9th grade students for them to pass with a grade of C or higher on the BECE examination?**

- **What are the potential knowledge, motivation, and organizational solutions for mathematics teachers to use effective instructional practices to teach the 9th grade students for them to pass with a grade of C or higher on the BECE examination?**

- **How can the mathematics teachers be evaluated to determine if they are using effective instructional practices to teach the 9th grade students in order for the students to pass the BECE examination?**

## RESULTS

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Motivation</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of factual knowledge on the principles of effective instructional practice (25% have mathematics degree)</td>
<td>Lack of self-efficacy (SE) in using technology to teach mathematics effectively (78%)</td>
<td>Lack of adequate professional development on effective instructional practices (33%)</td>
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<tr>
<td>Lack of procedural knowledge of using effective instructional practices to teach mathematics (50% use concrete materials, 37% give students problems and discuss)</td>
<td>Teachers have a high self-efficacy in using effective instructional practices (89%)</td>
<td>Work with peer support groups (33%) Observe and share with each other (44%)</td>
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<tr>
<td>Teachers know how to reflect on their own effectiveness in teaching mathematics (100% evaluate their teaching effectiveness)</td>
<td>Enjoys teaching mathematics (100%) Considers him/herself as a “master” mathematics teacher (89%)</td>
<td>Do not have adequate classroom supplies (22%) Supportive administration (89%)</td>
</tr>
</tbody>
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## LITERATURE REVIEW

- Increase in growth of STEM occupations
- Mathematics Achievement in the International Context
- Teachers impact on student achievement
- Effective instructional practices in Teaching Mathematics

## SOLUTIONS

- **Change recruiting strategies**
- **Provide comprehensive professional development courses**
- **Provide teachers the opportunity to work with coaches/mentors**
- **Establish professional learning communities**
- **Provide adequate classroom resources**

## FUTURE RESEARCH

- Examine other stakeholders
- Conduct study at multiple institutions