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The Impact of Multiple-Choice and Short-Answer Questions on EFL Learners' Test Performance

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- Literature Review
- Purpose of Study
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Introduction

- ❑ Question types affect students' test performance and can impact on test validity (Bachman, 1990; Cheng et al., 2007).
- ❑ The analysis of MCQ and SAQ question formats can provide useful data about the credibility and reliability of test scores.



Literature Review



Assessment in Communicative Language Teaching (CLT)

- ❑ The materials used during the assessment need to be authentic (Huang, 2016).
- ❑ MCQs do not entirely reflect students' language proficiency and contradict the key concepts of CLT (Huang, 2016).
- ❑ SAQs questions are more applicable for performance-oriented tasks (Alderson, 2000; Kang, 2005).



Assessment of Higher-Order Thinking Skills

- ❑ MCQs usually require recall of factual information and result in one-right answer thinking. (Granville et al, 2004; Mullen & Schultz, 2012).
- ❑ The cueing effect of MCQ format in addition with test-wiseness strategy can hint the examinees towards the correct answer (Masoumi & Sadeghi, 2020).
- ❑ SA questions measure a deeper understanding of the material due to the absence of the guessing factor (Budiyono, 2018).



The Scoring of MCQ and SAQ Items

MCQs

- Checked by an answer key,
- Guessing factor,
- Reliability of the score.

(Granville et al, 2004; Kastner &
Stangla, 2011; Weimer, 2015;
Budyono, 2018)

SAQs

- Checked manually or with rubrics,
- Multiple raters,
- Higher reliability of the score.

(Marvaniya et al., 2018)



Validity and Reliability of Item Formats

- ❑ Productive assessment items have the ability to discriminate between the poor and the stronger students (Granville et al, 2004).
- ❑ MCQs negatively affect the reliability of the assessment tool and can lead to biased results (Rademakers et al., 2005; Moore, 2014).
- ❑ SAQs are more reliable and effortless to score. (McKenna, 2019).



Student Performance on Item Formats

- ❑ SAQ format students require some time to comprehend the question and the production of their answers (Mozaffari et al., 2017).
- ❑ MC format learners are provided with additional cues help them to answer the questions (Famularo, 2007).
- ❑ MC and SA items measure different language skills (Currie & Chiramanee, 2010; Cohen 2012).
- ❑ Combination of two formats can be more effective (Mozaffari et al., 2017; Budiyo, 2018; Masoumi & Sadeghi, 2020).



Purpose of Study

This study aims to determine how the MC and SA question types can affect students' test performance. Specifically, the study investigates whether the learners' proficiency has an impact on their performance of MC and SA question formats, if the constant practice of SAQ items can result on better performance in MC format and overall language test, the study also aims to find out the students' perceptions of SA and MC formats.



Research Questions

1. Does student test performance on MCQ and SAQ formats change depending on their proficiency?
2. How does the systematic treatment with the SAQ format affect students' test performance?
3. What are students' perceptions towards MC and SA question formats?

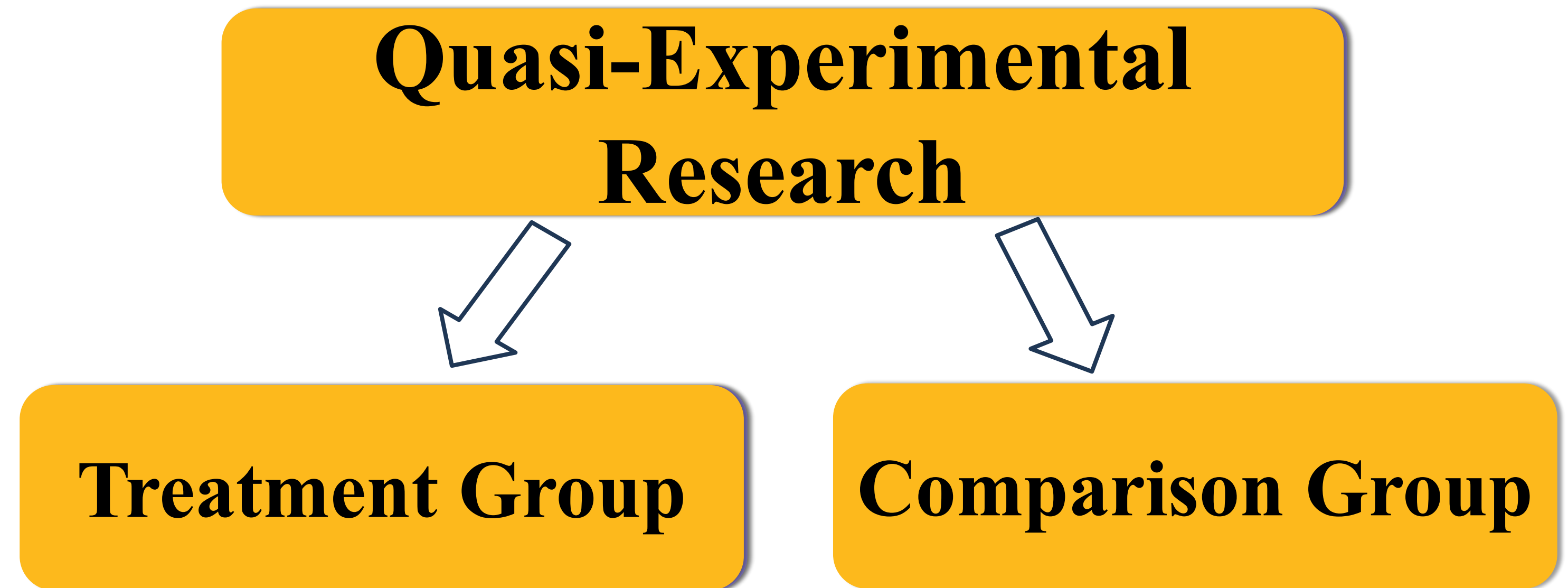


Methodology



Typology

- ❑ Mixed methods research
- ❑ QUAN + qual (combination of quantitative and qualitative research)



Context and Participants

- ❑ Afterschool English program in Yerevan, Armenia
- ❑ Two Low-Intermediate Proficiency groups (19 students)
 - ❑ Treatment Group (10 students)
 - ❑ Comparison Group (9 students)
- ❑ Age: 12-16



Sampling Procedure

- ❑ Convenience sampling method was used to select two groups of Low-Intermediate level.
- ❑ Purposive sampling method was used to select the participants for the interviews that were conducted after the final test.



Data Collection

Ethical Considerations

- IRB Certificate
- Confidentiality
- Anonymity

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Data Analysis (Research Question 1)

- ❑ Inter-rater reliability between two raters (Post-test)
- ❑ Correlation between two halves (MCQ and SAQ parts) with split-half method (Post-test)
- ❑ Pearson Correlation Coefficient between the variables (scores on SAQ; scores on MCQ and total score) (Post-test)
- ❑ Mean Percentage difference between the scores on MCQ and SAQ items for low, mid and high proficiency students (Post-test)



Data Analysis (Research Question 2)

- ❑ Mean percentage of the results of the treatment group in all sections (four treatments)
- ❑ Distribution of grades for pre-test and post-test (treatment and comparison groups)
- ❑ Mean of the grades for pre-and post tests (TG and CG)
- ❑ Mean percentage difference between the scores received on MCQ and SAQ items in both pre- and post-tests (TG and CG)



Data Analysis (Research Question 3)

- Cronbach's Alpha reliability coefficient for the Likert Scale survey
- The mean result of students' answers for each question (Likert Scale Survey)
- Recording students' interviews
- Transcribing and coding the data from interviews



Major Findings



RQ1: Does student test performance on MCQ and SAQ formats change depending on their proficiency?

	Treatment Group	Comparison Group
Inter-rater Reliability	86.76	89.22
Mean Percentage Difference of mismatch cases between two raters	19.30	13.50



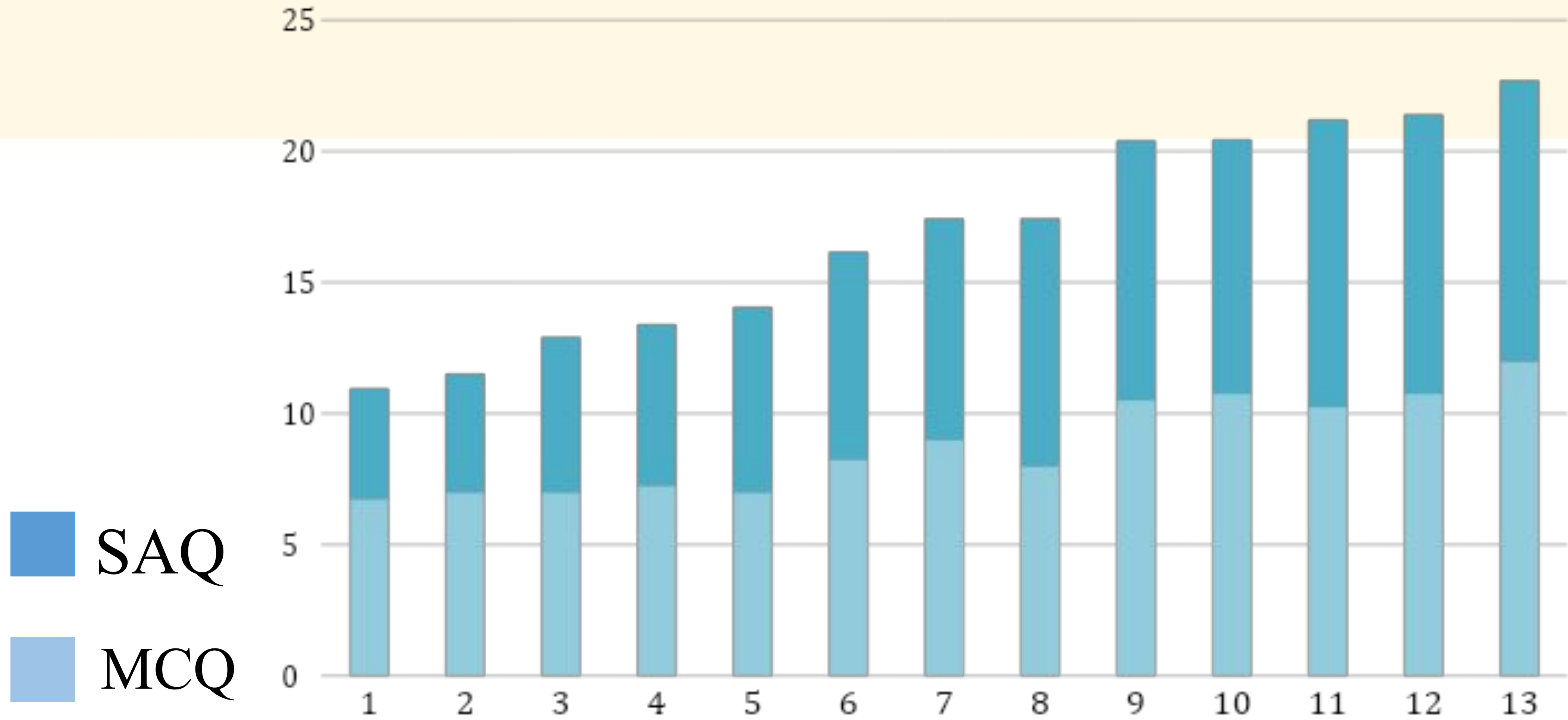


Figure 1: Ratio of students' scores in MCQ and SAQ formats



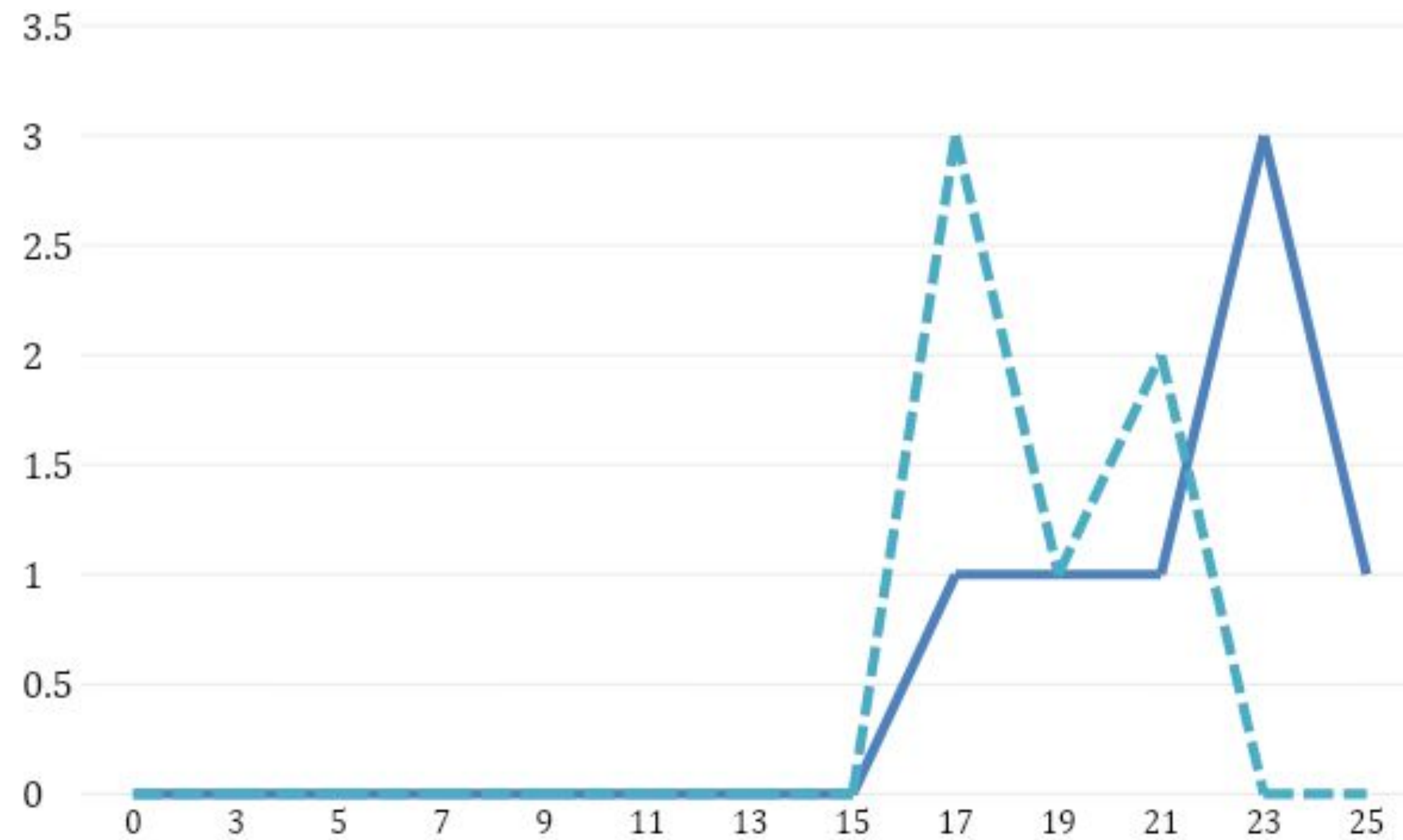
Correlational Analysis and Mean Percentage Difference

	MCQ and Total (r)	SAQ and Total (r)	MCQ and SAQ (r)	Mean % Diff. (MCQ-SAQ)
Low Proficiency	0.72	0.99	0.64	16.40
Mid Proficiency	0.86	0.94	0.65	0.90
High Proficiency	0.81	0.70	0.16	3.8



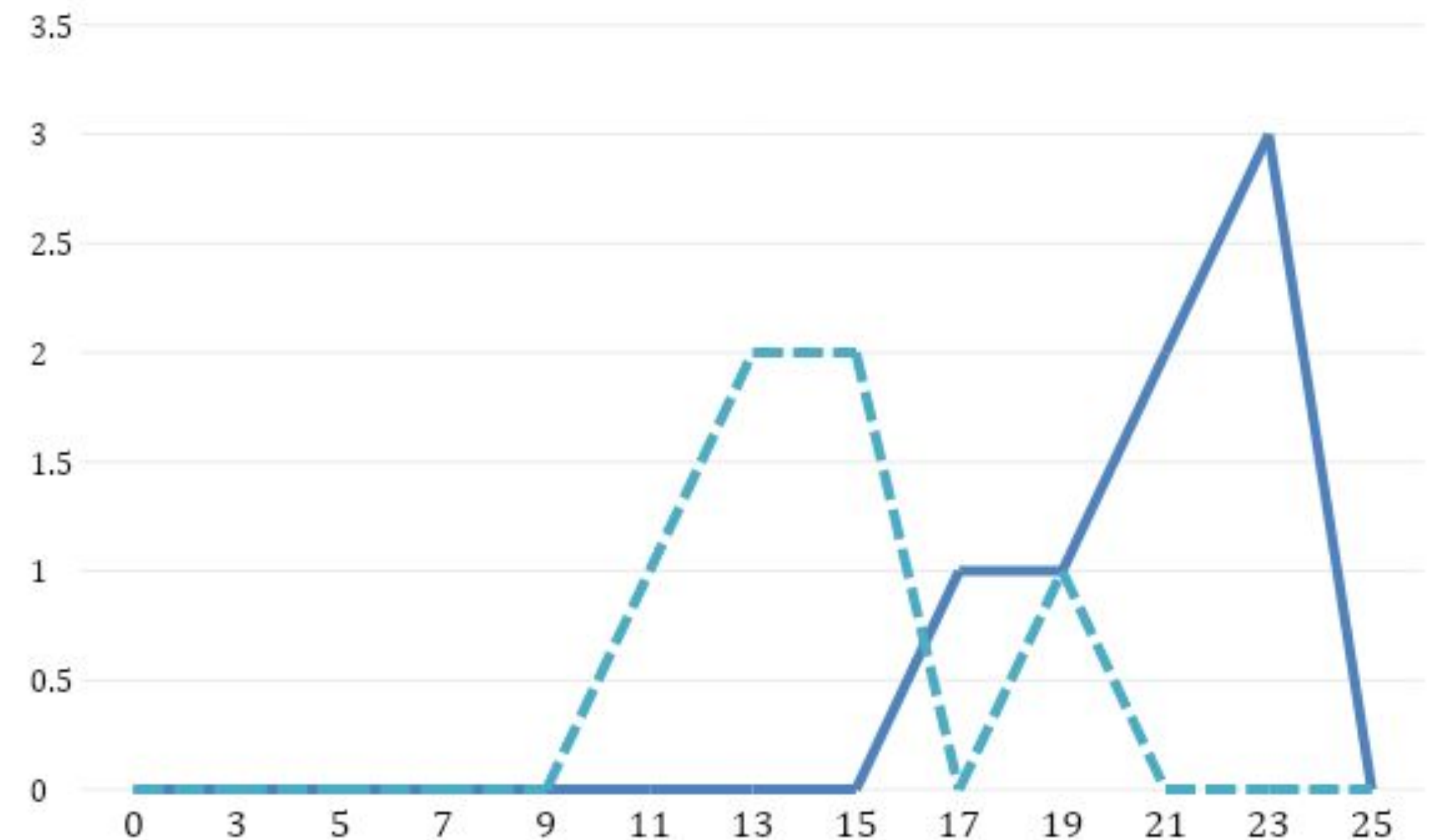
RQ2: How does the systematic treatment with the SAQ format affect students' test performance?

Figure 2: Distribution of scores in midterm test for treatment and comparison groups



Treatment Group

Figure 3: Distribution of scores in final test for treatment and comparison groups



Comparison Group



Figure 4: The differences on test performance of treatment and comparison groups on midterm and final tests

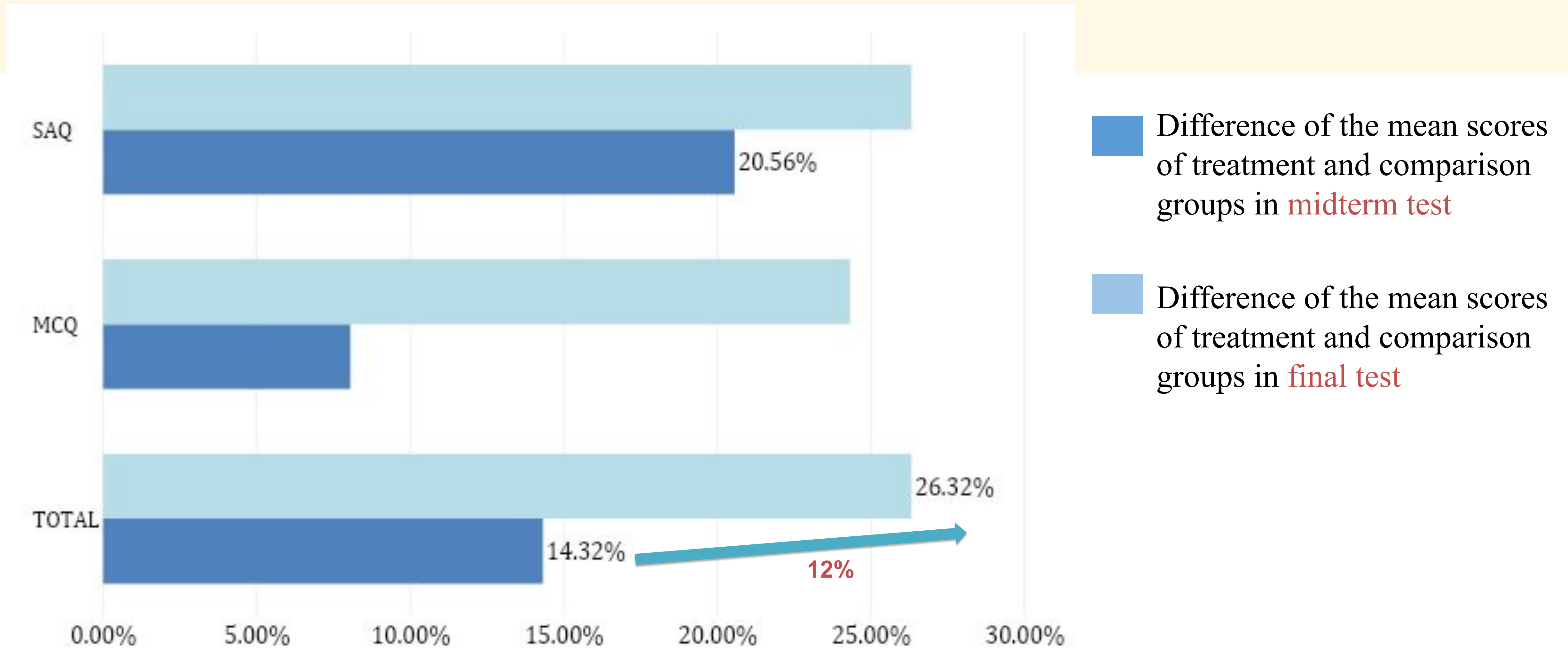


Figure 5: The performance of treatment group on four treatment tasks

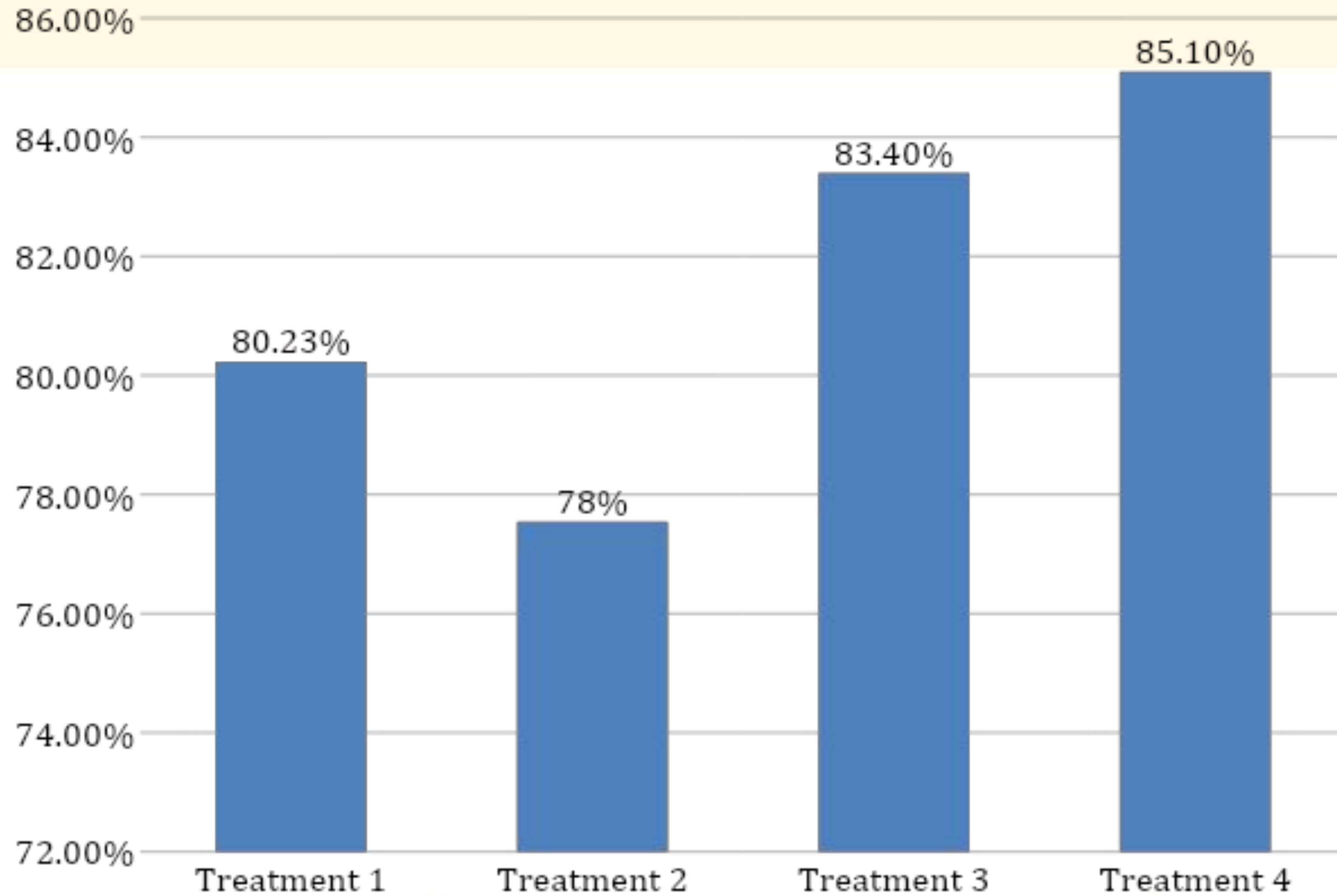


Figure 6: The performance of treatment group in listening, reading, grammar and vocabulary sections.

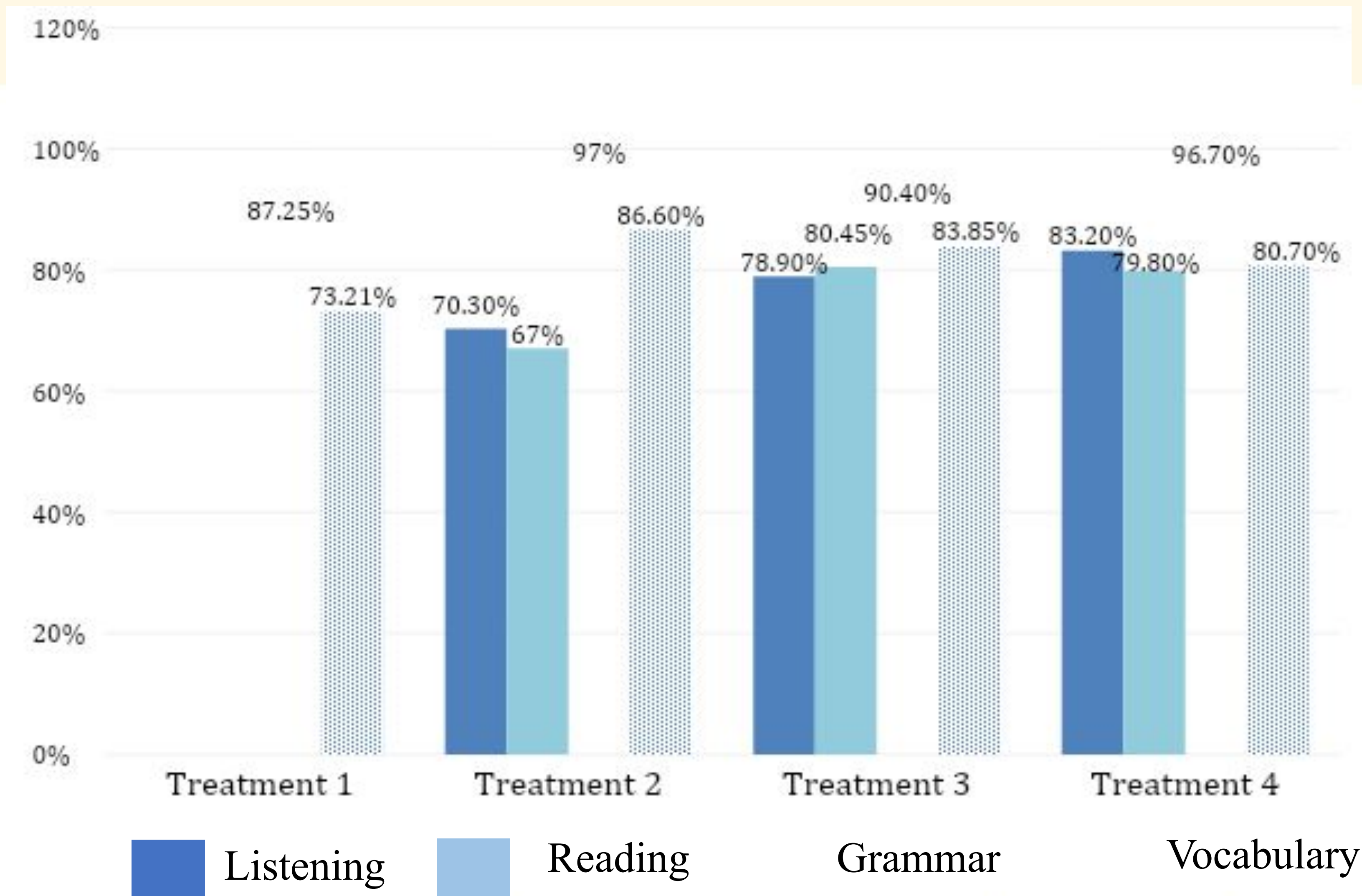


Figure 7: The performance of the groups in SAQ format of the final test

Figure 8: The performance of the groups in MCQ format of the final test

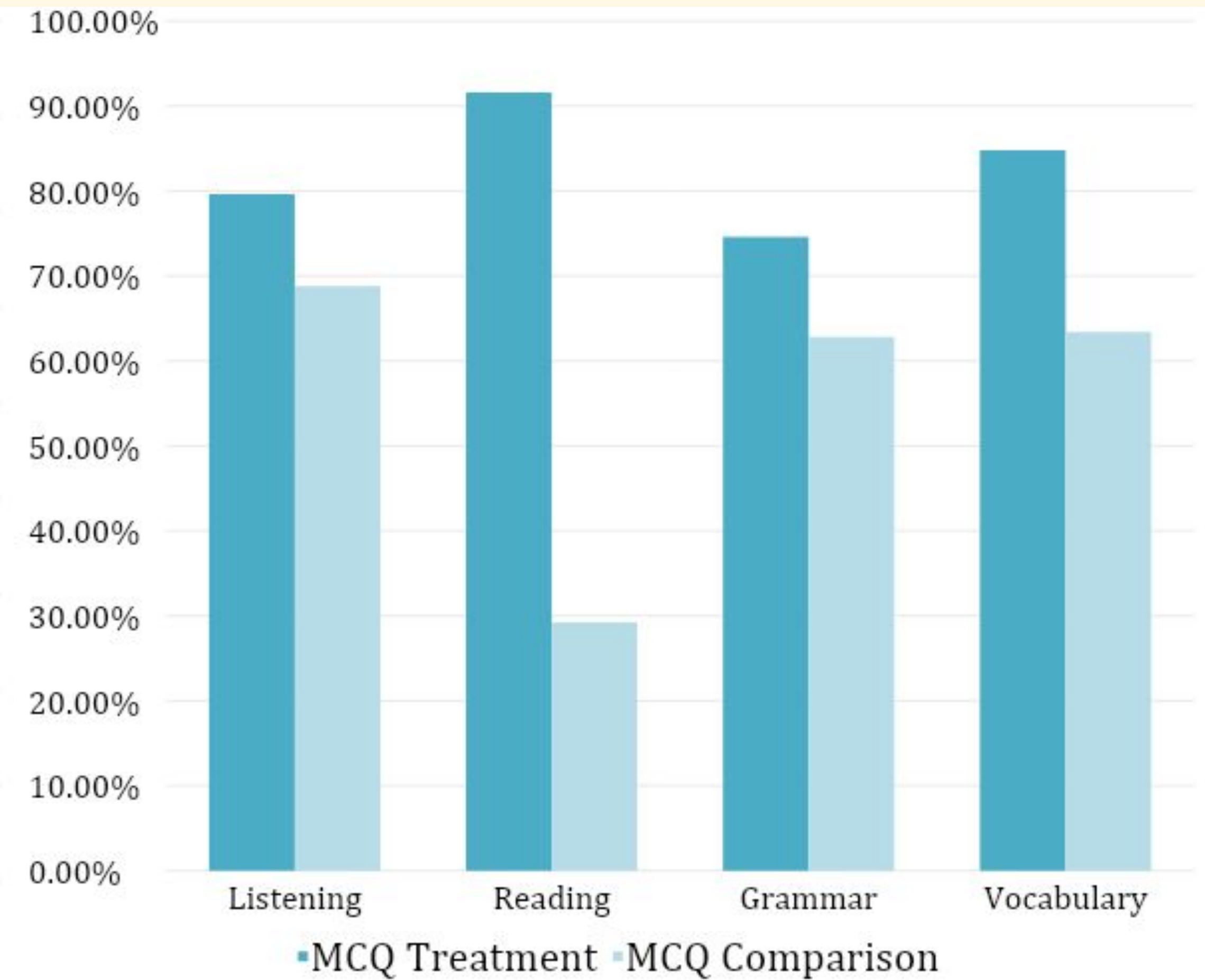
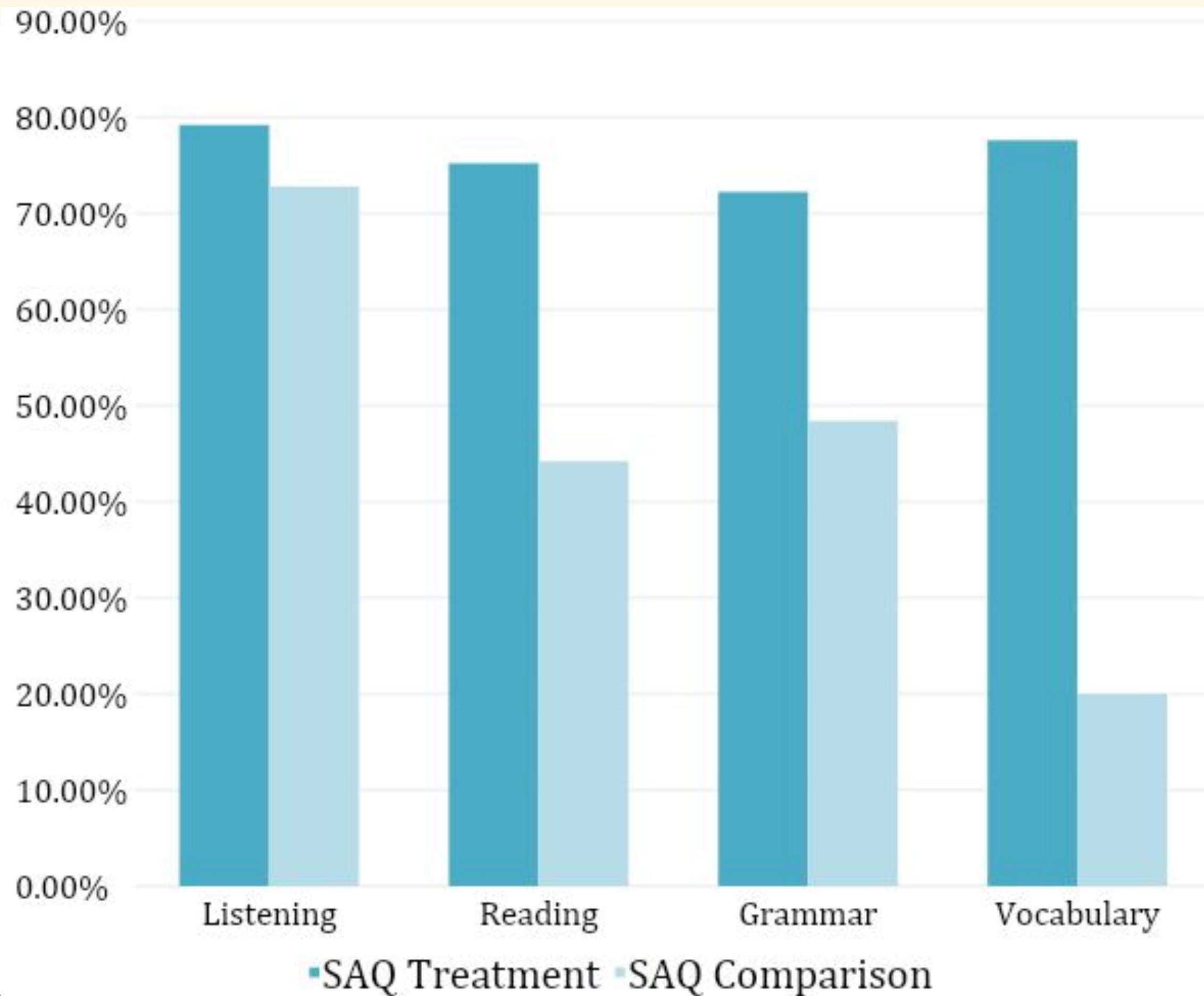
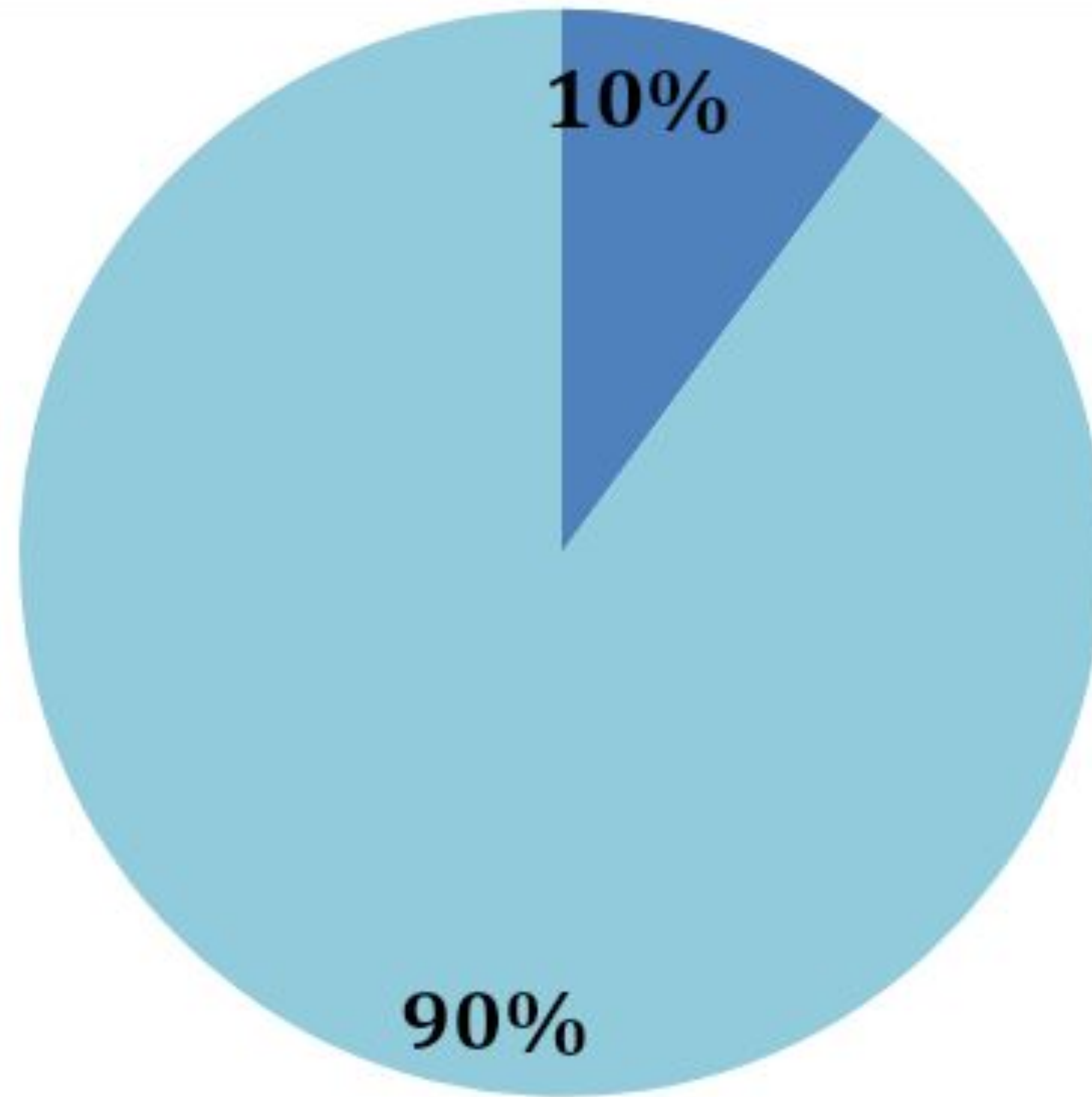


Figure 9: The ratio of attempted and not attempted SAQ items in the final test for the comparison group



• Not attempted • Attempted



RQ1: What are the students' perceptions towards MC and SA question formats?

Survey Results

Comparison Group

- MCQs are easier and faster to answer than SAQs
- MCQs check the understanding of material better
- SAQs reveal the language gaps
- MCQs are more authentic

Treatment Group

- MCQs and SAQs are easy and fast to answer
- SAQs check the understanding of material better
- SAQs reveal the language gaps
- SAQs are more authentic



Interview Results

MCQs

- Require less time to answer
- Allow to evaluate and compare the options
- Enable to guess the answer
- Limit the choice of the answer

SAQs

- Enable to express ideas and thoughts
- Require more time to think
- Do not allow to guess the answer



Limitations and Delimitations



Limitations

- The number of students
- Limited time for the treatments
- Duration of the study

Delimitations

- Context
- Participants' proficiency level



Pedagogical Implications and Recommendations



Pedagogical Implications

- ❑ Combine MCQ and SAQ formats in the language tests to get more valid and reliable results.
- ❑ Include more questions of short-answer format to assess students' knowledge because:
 - ❑ Shows the students' language performance in real-life context
 - ❑ Eliminates the guessing factor
 - ❑ Require different skills to answer the question
 - ❑ Provides more insightful feedback on students' achievements
 - ❑ Reveals gaps in students' knowledge
 - ❑ Eliminates cheating
- ❑ Include rubrics for the assessment of SAQs to increase the objectivity of the scores



Recommendations

- Conduct a research for a longer time
- Increase the number of participants
- Include different proficiency levels (such as Low Intermediate, Intermediate, Upper Intermediate and Advanced)
- Add the number of treatments
- Use different instruments for the study (apart from pre-and post-tests)
- Examine how the constant practice of SAQ affects the students' performance on MCQ format in different sections (listening, reading, grammar, vocabulary)
- Include other question formats
- Conduct the study in public schools



Conclusion

- ❑ The students' test performance is more dependent on their proficiency rather than on the question format.
- ❑ The constant practice of the short-answer questions can positively affect students' test performance.
- ❑ The combination of both formats can provide the teachers with additional feedback about students' achievements on the course.
- ❑ The students feel comfortable with MCQ and SAQ formats and they believe that both question types should be included in the language test.



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Questions & Comments

