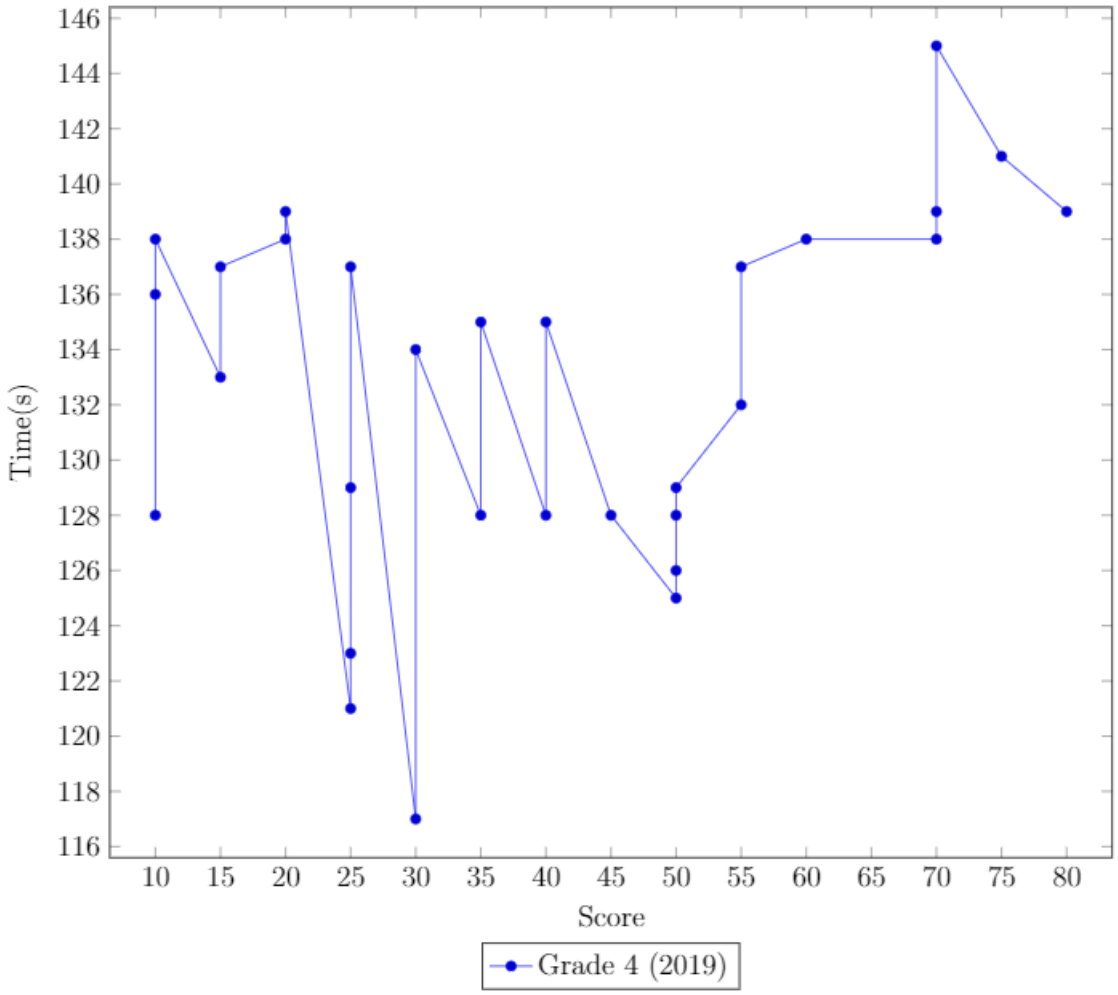
Sean Borg MSD 6.3B
Project

Final Report

During the sessions that took place both quantitative and qualitative data was gathered. The quantitative data was obtained by recording the score achieved by each child and their time taken to achieve it. The results obtained were plotted into three line graphs, one line graph for each class. The qualitative data was gathered through multiple ways. The teacher who was in charge of the sessions was asked to observe the behaviours the children showed when playing the game and to take photos throughout the sessions. The photos taken were only of the 2019 sessions, as the boys who played the game in 2020 did so from home since the schools were closed due to Covid-19. She was also asked some questions about the overall experience once all the sessions were concluded.

Quantitative Data



This graph shows the level the grade 4 students of 2019 are at in fractions. It reflects that their understanding of the subject isnt very strong. Once the children were asked questions on the subject that did not mirror the questions on the text book they struggled to answer them.

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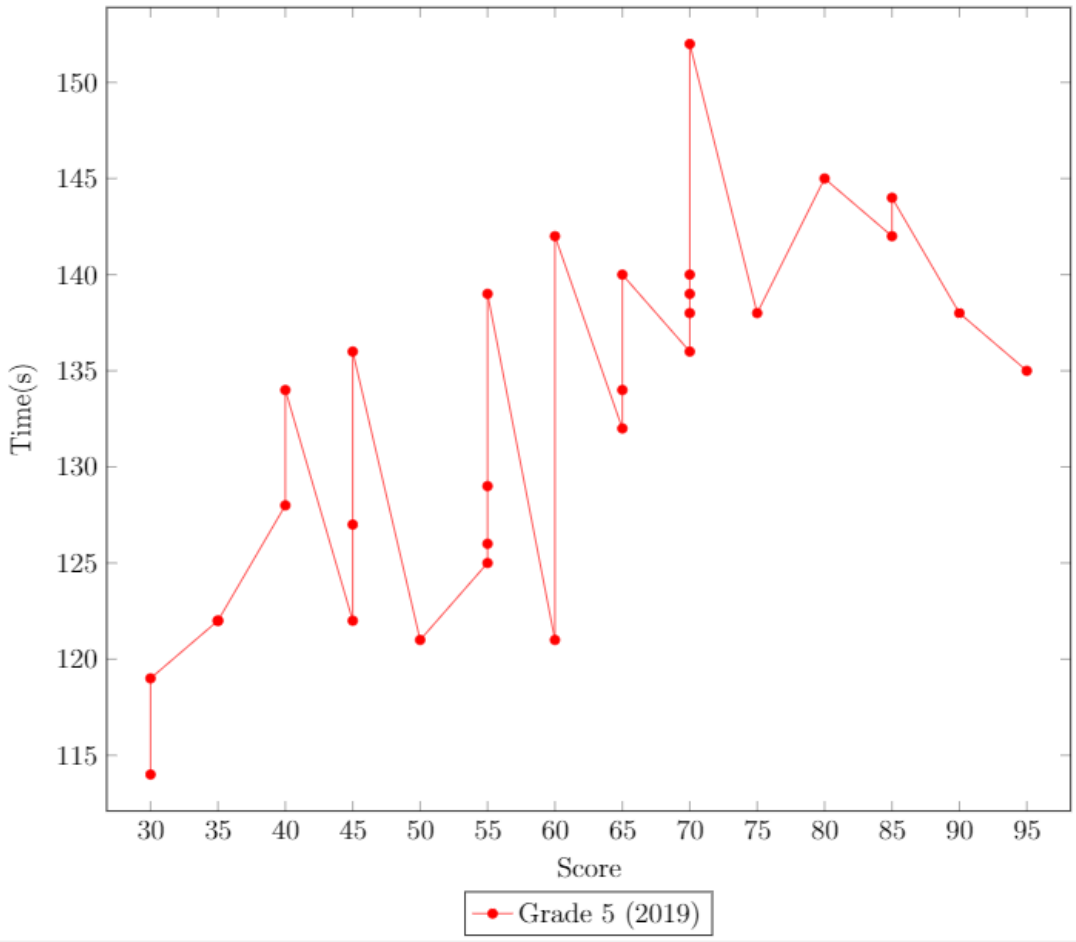
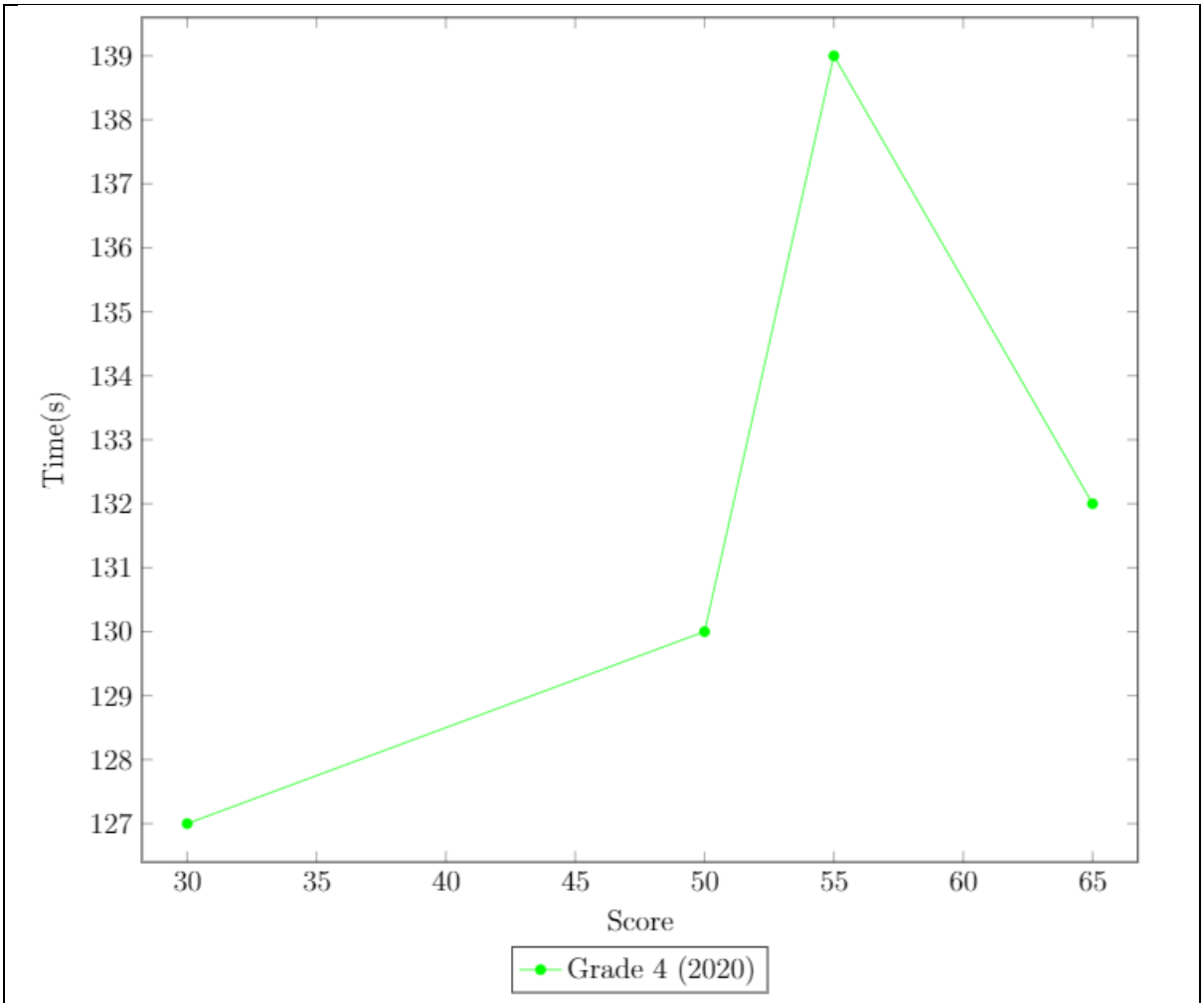


This graph shows the level the grade 5 students of 2019 are at in fractions. It reflects that their understanding of the subject is stronger than that of the grade 4 class, this confirms that once students are exposed to more variety on a difficult maths topic they start getting a better understandig of the topic. Although they showed a better understanding of the topic, they still did not have a complete grasp on the concept as they also struggled in the last level and regularly needed prompts from the teacher to answer the questions.



This session was carried out differently to the others due to Covid-19 shutting down the schools. It was done online through video calls. The graph mirrors that of the grade 4 class from the previous year.

Qualitative Data

The teacher took photos during the sessions when interesting behaviours were noticed. Interesting behaviours in this case refer to competitiveness, teamwork and focus. All these behaviours were shown, and photos are displayed in my dissertation blurring out all faces. Next the teacher answered my questions regarding her experience in the sessions. The feedback was mostly positive, she also said that she would use educational games like this in future lessons. The constructive feedback given was about some levels being too short and spelling mistakes she noticed.

Relation to other studies

Both the qualitative and quantitative data collected in this study mirror findings obtained in the studies I discussed in my literature review.

In Bulgar(2003) Children's sense-making of division of fractions the authors findings talk about how in the right environment children were able to solve mathematical problems through logic and co-operation with their peers. This is shown in my study, there even are photos confirming this with children working together to solve a problem.

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In Hasemann (1981) On Difficulty With Fractions the authors findings show how children don't have such a good grasp on the concept of fractions when they have been taught the subject through repetitive drilling, this is also mirrored in my study.

In Wang, Yin-Jian, Hui-Fang Shang, Paul Briody, et al. (2011) Investigating the impact of using games in teaching children English, The findings show that the games significantly increased the students motivation in the class room. This was mirrored in my study where the teacher involved in the sessions confirmed that this was the case as the children involved seemed much more focused and motivated than they would usually during a classroom lesson on fractions.

In Nasier, Emilie A., Wendy E. Wright, and Robert M. Capraro (2003) Teaching Fractions: Strategies Used for Teaching Fractions to Middle Grades Students The findings show that since the students only learned fractions through repetitive drilling they did not show a concrete understanding of the topic, this was exactly the case with the students trying out my game for my dissertation. This is also confirmed by Hasemann(1981).

In Randel et al. 1992 the author finds that children are more focused and motivated when playing an educational game on a topic rather than that same topic being taught in class. Again this was mirrored in my study by the comments made by the teacher who was in charge of the sessions. She said that the children are much less enthusiastic when working on fractions in class than they were during these sessions.

References

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