



LEARNING IS POSSIBLE: Can Technology Successfully Support Differentiation?



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Introduction

In classrooms today, around the world, we have a huge diversity within the student communities. This diversity includes different cultures, religions, economic backgrounds, as well as different learning abilities. Where one student might excel in the mathematics curriculum, he/she may lag behind in the english language curriculum. Today there are students in the classroom that have dyslexia, dyscalculia, dyspraxia, Attention Deficit Hyperactivity Disorder (ADHD), Attention Deficit Disorder (ADD) and a number of other learning differences. Each of these students needs to be able to access the curriculum. A student with dyslexia cannot read and write as well as other students and therefore teachers need to put actions/plans in place to address their difficulties.

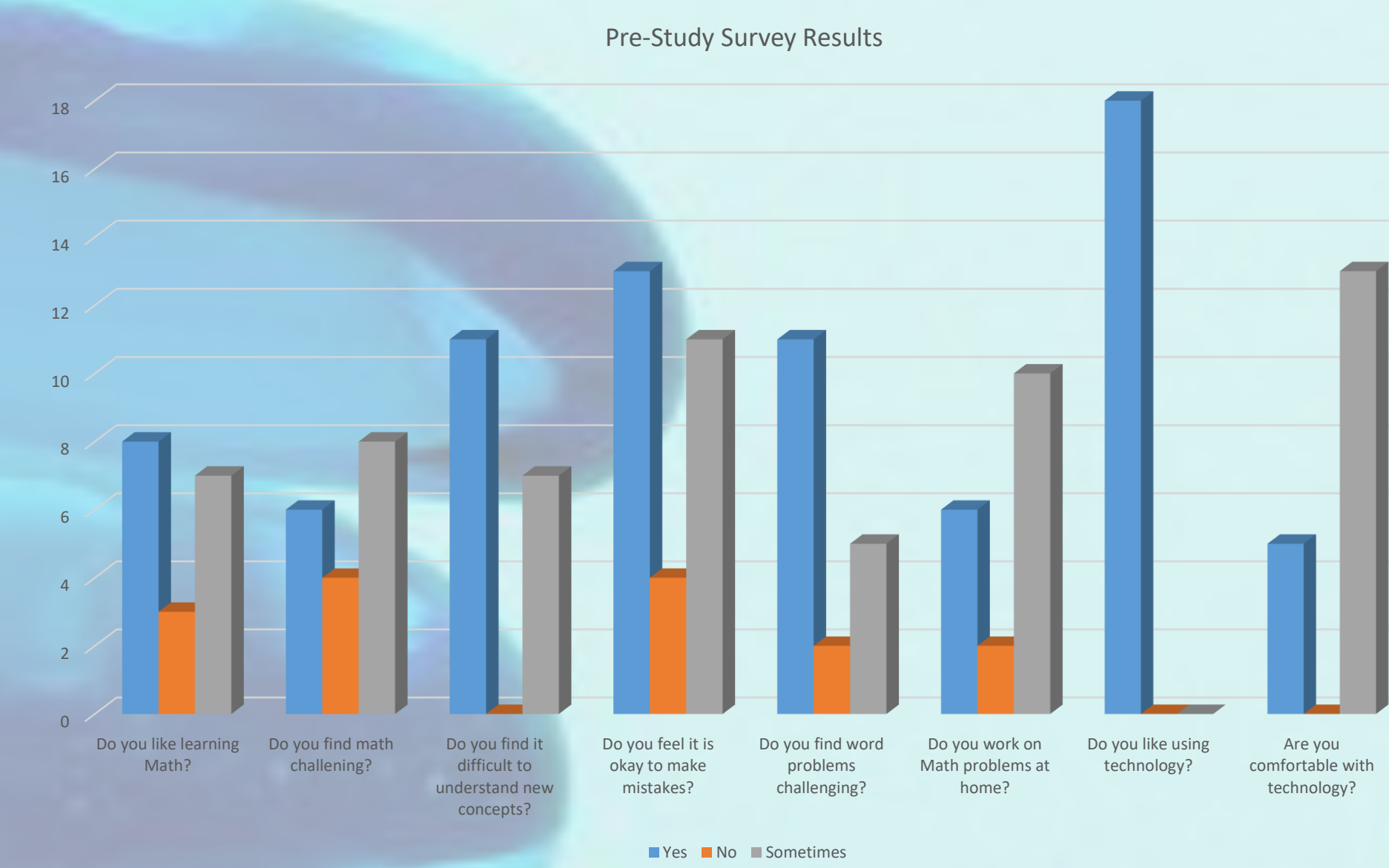
Materials and methods

This study came about due to the need for differentiation within a mathematics classroom and the understanding, and recognition, that technology has become a significant and extremely important aspect of society's everyday life. The idea of integrating the two of them, mathematics and technology, while still ensuring that a secure differentiation program remains in place, that will allow all students to access the curriculum and make progress, is imperative. In order for this integration to be successful, there needs to be an implementation model that would integrate the two, but still allow the teacher to focus on specific different needs within the classroom. There are many resources available for supporting specific learning needs or for providing additional support for current learning, however a specific model must be put in place to ensure that an integrated program is beneficial. Models such as Blended Learning, or the Flipped Classroom Model, are effective as they still allow teachers the ability to assess the learning, build on the learning, and even extend the learning.

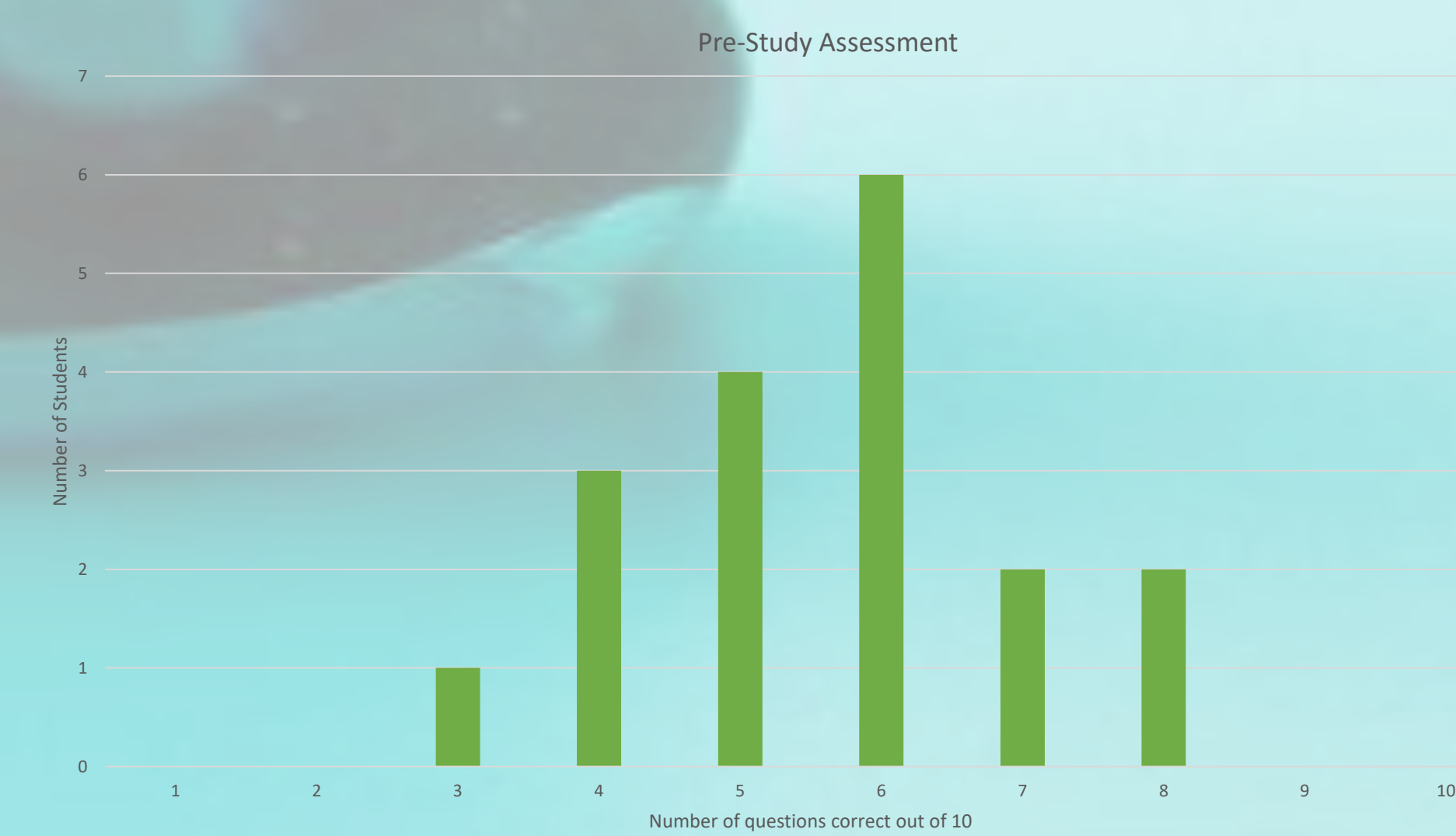
Results

Pre- Study Survey

The teacher began with a basic survey to understand what the students' opinions were towards both mathematics as well as mechnology. The Survey consisted of eight basic questions and the teacher was able to gather data from that survey.



The project required the teacher to divide the 4th grade class into five clearly defined student groups. These groups were set-up according to the students' Mathematical abilities, with a focus on 'fractions', and was based on a pre-assessment given to the students prior to the study. The assessment included 10 questions on fractions.



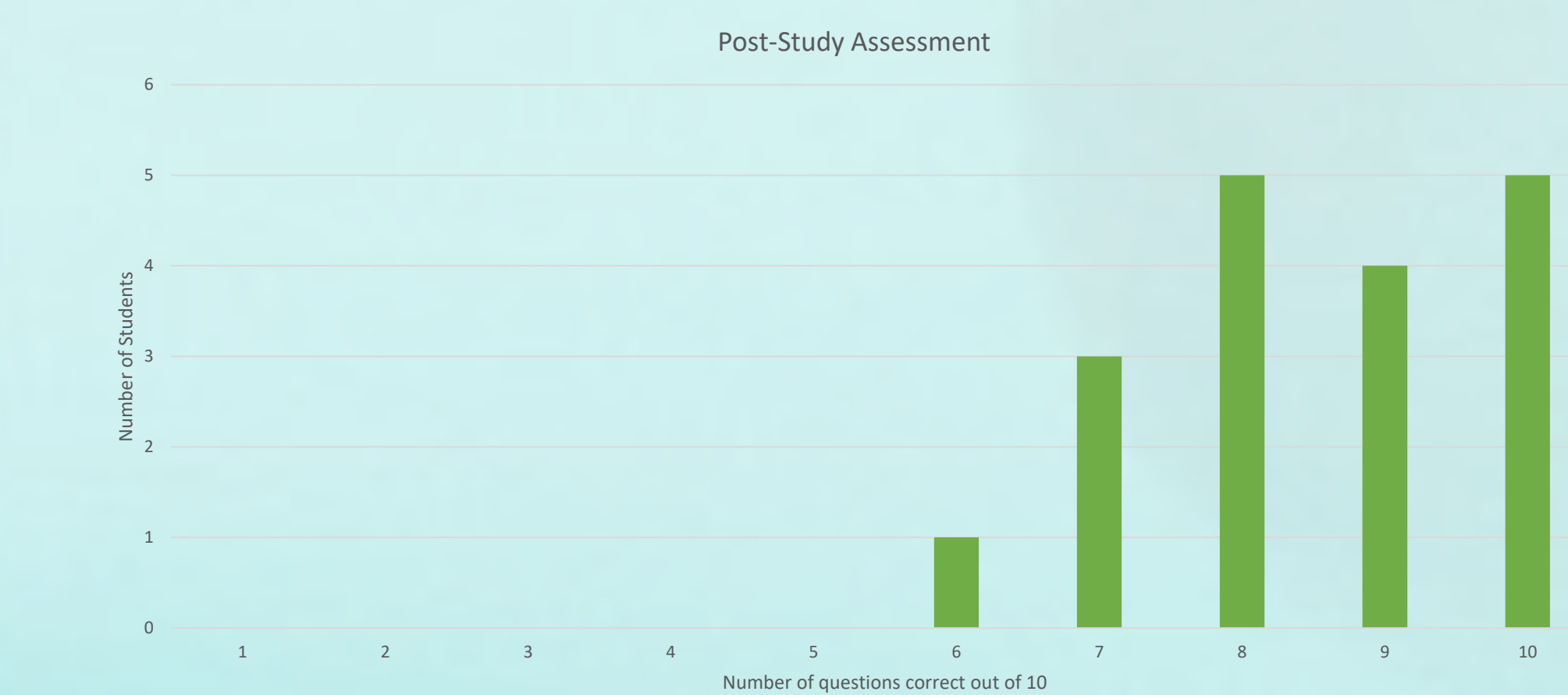
Since there would always be one group of students working directly with the teacher, she would be able to focus on that specific group. This allowed the teacher to target the specific curriculum needs of the students.

Post- Study Survey

Following 2 weeks of the teacher using the Blended Learning Model in the classroom, positive results were evident. At this stage the Post-survey was conducted, and its results were compared with the initial survey results to see if the student responses were any different.



A Post-Study Assessment, with another ten questions involving fractions was performed by the students, and although there were still a few students who did not complete all the questions correctly, they were able to identify the errors.



When comparing the Pre- and Post-Assessment results, it is evident that many of the students had a more concrete understanding of the math concept taught.



Conclusions

With the combination of technological tools and a blended learning model, successful differentiation was possible. Each student was able to access the learning in a way which gave them the ability to gain a clearer understanding of the content.

This study demonstrated that it is possible to challenge those 'more-able' students without increasing the work load, the 'less-able' can achieve those same learning goals and, through the use of a blended learning model, the teacher can effectively ensure, and monitor, the progress of all the students.

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