

# Furthering student mathematics ability in new zealand



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## Primary students lack math ability in New Zealand

### Introduction

Due to the national math instruction system and lack ability in teaching, primary school students between Year 4 and Year 8 student do not have sufficient math capability and have been fallen behind other English-speaking countries in math.

Based on these facts, first, the author will support his opinion by illustrating these phenomena from two aspects: teachers' low math teaching level and students' math deficiently ability.

Second, the author will be analysing the fact and provide some functional approaches which can change the circumstance.

Main idea one:

New Zealand primary students' ability of math have declined apparently between Year 4 and Year 8.

The Education Review Office (ERO) report[.....], found children's confidence and ability to do maths fell between years 4 and 8, a period in which achievement has been "dropping alarmingly for some time," (Redmond, 2018)

It is said that some primary student cannot perform basic calculation, for example, some pupils in grade three cannot get the right answer to "6+6", and many of them may count with their fingers when they enrol in middle schools.

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Today, some elite schools have refused to accept students without capable math capacity, when they are accepted by middle schools, they can use calculators in math course which makes them have fewer opportunities to practice basic math skills. In current workplaces, visualizing and analysing different forms of data has become critical parts in people's jobs, consequently students' basic math ability should be cultivated from primary schools.

Main idea two:

There are two main reasons for this fact which are mentioned above, first one is the national math education system and the second one is the school teaching procedure and teachers' bad teaching capability.

Nearly 20 years ago, a national math education system which is called Numeracy Development Projects (NDP) was rolled out to most of the primary schools, the goal of which is to help pupils improve math ability by professional guidance, there are large amount of materials which are relative to math education in its official website, New Zealand government spent about 70 million dollars on it,

But it has been proved that it is the main cause of primary student's weak math ability. In this system, the basic math ability such as addition, subtraction, multiplication, and division are not emphasized which has held children's math ability back.

In addition, teachers in primary schools of New Zealand lack sufficient math teaching ability. Due to past their math education, most of the primary

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school teachers do not give up obsolete concept of math instruction, which has negative affected math ability, “ Without trying to knock primary school teachers, their proficiency in the subject is absolutely essential for student achievement. You can’t teach maths if you don’t know maths.” (Arthur-Worsop, 2015), some primary school teacher lack of basic math ability, and a few of them have received the competent development training, in addition some teachers instruct dissimilar classes at the same time, which has made them not specialists in math teaching.

Furthermore, usually pupils are grouped according to their math ability in math cause which has been proved by some students who has been enrolled in university. Students who are divided into different groups due to their math capability will decline their eagerness in this subject, then finally made them given up math thoroughly.

Solutions:

In order to improve pupils’ math competence, primary schools and government education department should take some measures to make a necessary alteration, first, one is improving teachers’ skills and changing their teaching methods. The second one is recruiting more professional math teachers.

Firstly, teachers have participated in well-planned and targeted professional learning and development (PLD) in schools, therefore, these schools’ math achievement has been improved.

According to the ERO et al. (Office, 2018), there are two complementary approaches in PLD: initial short-term interventions that focused on identifying students and longer-term designed to improve mathematics teaching school-wide, which are able to help school successfully identified the children who needed additional support in mathematics.

In some schools teachers have been begun to change their teaching styles, such as inquiring teaching module has been introduced to math course classrooms, these instructional ways focus on both content knowledge and teaching practice which has some similarities with PLD.

In addition, teachers need to teach the whole mathematics and statistics curriculum. They have gained the confidence to do this as they grew their knowledge of all the strands and looked in detail at what children should be learning at each of the first three or four curriculum levels.

Furthermore, the implementation of mixed-ability group instruction within an authentic and rich curriculum has been replaced the grouped math teaching way, teachers try mixed-ability grouping for some of the time while they monitored outcomes, over time, teachers see that mixed-ability grouping practices also have benefits for more able mathematicians.

By the above method, teachers find that children in mixed-ability groups have a greater understanding of their learning, are better able to recognize achievement and progress, and know what they have to do to improve.

Moreover, not only teachers have been worked closely with parents, whanau and special mathematics, but also most of the schools that had improved

achievement in mathematics have reviewed and completely changed the way they taught students, even some schools have triggered the need for more extensive PLD.

Secondly, enough professional teacher math teachers can improve math instruction level. Many schools lack enough competent teachers, so one teacher has to teach more than one subject which leads him or her to be incapable to math teaching, all-time math teacher will improve math teaching level, and enhance students' math capacity.

Conclusion:

In conclusion, there are many elements which can affect pupils' math ability, such as changing math education system, improving teachers' capability and teaching method and so on, then government and schools can make some change within the Numeracy Development Projects (NDP) gradually, because math ability has tremendous relative to children's career and lives, so it is necessary to improve their fundamental math skills.

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