



Mathematics Education Article | 2022

Is Tuition Necessary?

Recent trends show an increasing number of students engaging private tutors to further enhance their learning experience and academic performance. This trend was seen to have grown amidst the Covid pandemic as many turn to additional support to supplement home-based learning from schools.

Is tuition really necessary? Here are some thoughts.



Early Intervention

As the school term progresses, we may sometimes find ourselves expressing frustration or anxiety as the number of queries accumulate. Engaging the help of a personal tutor can come in handy. A tutor not only identifies your learning needs, but is also able to adapt according to your learning styles (refer to our article on Examination preparations). Learning becomes more manageable. You are now well on your way towards going beyond elementary questions to more challenging ones to stay ahead!

According to Carroll's model of school learning (1963)¹, private tuition is expected to be effective as it provides additional learning opportunities beyond a normal school curriculum. This additional time is crucial as it allows for early intervention. This is especially important for subjects like Mathematics, which is a layered subject. Foundations for higher-level topics are often built upon in lower-level topics. Hence, addressing learning gaps early helps ensure a firm foundation is established. This is then easily built upon for future extensions of learning to take place (Heinrich & Nisar, 2013)².

Before you engage a tutor, here are some pointers to consider.



¹Carroll, J. B. (1963). A model of school learning. *Teachers College Record*, 64, 723–733.

²Heinrich, C. J., & Nisar, H. (2013). The efficacy of private sector providers in improving public educational outcomes. *American Educational Research Journal*, 50(5), 856–894.

1. Tutor's qualifications

Finding the right tutor is imperative. To optimize your learning, high-quality instructions and effective pedagogical tools for teaching and learning are key. A tutor's ability to provide such quality teaching depends largely on his/her training and level of experience.

An experienced tutor is better able to adapt according to different student profiles and learning needs. This ensures a more personalized and targeted approach towards each student's unique learning needs. The amassing of a wealth of resources over the years also gives an experienced tutor the flexibility to maneuver through different strategies and tools to close your learning gaps.

An MOE certified and trained tutor is also better suited for preparing you for the examinations. At AlphaOmegaMath, all our tutors are MOE-trained and certified, with many years of teaching experience in schools. They are thus well versed with examination requirements and syllabus focus.

2. Ability to connect

Tuition usually takes place one-to-one or in small groups. The luxury of having more personal time and individualized attention in a tuition setting thus allows for deeper tutor-student bonds to be fostered. Such luxury of time is however often absent in a larger school setting. Strong tutor-student bonds allow tutors to better connect, inspire confidence and encourage you in your learning journey. It also creates a safe space for clarifying doubts on the spot and for voicing out any concerns along the way.

Before engaging your tutor, do read up on the testimonials of his/her current and ex-students to aid you in your selection process. Additionally, at AlphaOmegaMath, we also provide trial lessons for those who are keen to enrol with us. This would allow you to experience for yourself and assess the suitability of our tutors before committing with us in the long term.



The Joy of Learning

Additionally, learning is suppose to be an enjoyable journey! Under MOE's directive, school education seeks to inculcate self-directed learning; where active learning takes place beyond the classroom as students are intrinsically motivated to explore and research on areas of interest beyond what is taught. This inspires lifelong learning and discovery that imbues greater confidence and competence³.

Such self-directedness in learning can only take place however with proper guidance and supervision at the onset. In a large school setting with curriculum time constraints and higher teacher-student ratio, such learning opportunities may be limited. Engaging a private tutor can help promote greater self-directed learning and eventually nurture joy of learning when a student's competency and foundation is well established.

Tutors can also help customize lesson materials and instructional activities base on your preferences, interests and pacing, sparking greater joy in learning. At AlphaOmegaMath, we have also formulated an AlphaOmegaMath Ability Assessment kit (AAA) in line with the latest MOE syllabus to enable you to identify your current Mathematics ability and foundation. This allows our tutors to better formulate follow up actions to further develop and strengthen your competency for lifelong learning.

³ <https://www.moe.gov.sg/news/speeches/20171229-speech-by-mr-ng-chee-meng-minister-of-education-schools-at-the-20th-appointment-and-appreciation-ceremony-for-principals>



Examination Rigour

Finally, it is common knowledge that Mathematics requires practice, practice and more practice. In addition to that, target spotting common examination question types is also a key to acing that Mathematics paper. At AlphaOmegaMath, our tutors regularly keep abreast of recent examination trends and the ever-evolving education landscape and demands, making them well-suited to provide the necessary rigour for examination preparations. Engaging a private tutor also allows for more real time feedback to tackle learning gaps on the spot and provide follow-up strategies.

Reference to Webb's Depth-of-Knowledge Levels⁴, examination rigour for Mathematics is key in extending your overall academic development, as seen in the progression below.

Depth of Knowledge	
<p><u>Level 1 (Recall)</u></p> <p>Q: Write 50% as a fraction.</p> <p>A: $50\% = \frac{1}{2}$</p> <p>Recall: 50% is the same as $\frac{1}{2}$, because 100% is the same as 1.</p>	<p><u>Level 2 (Basic application of skills/concepts)</u></p> <p>Q: What is the cost of a \$20 meal after including 7% GST?</p> <p>A: $\frac{7}{100} \times \\$20 = \\1.40</p> <p>Cost After GST = $\\$20 + \\$1.40 = \\$21.40$</p>
<p><u>Level 3 (Strategic thinking)</u></p> <p>Q: Tom states that a 10% discount after a 10% discount on a \$200 bag is the same as a 20% discount on the same bag. Do you agree with Tom? Justify your answer with relevant working.</p> <p>A:</p> <p>Case 1: Price after a 10% discount after a 10% discount on \$200 $= 0.9 \times 0.9 \times 200 = \\162</p> <p>Case 2: Price after a 20% discount on \$200 $= 0.8 \times 200 = \\$160$</p> <p>$\\$162 > \\$160$</p> <p>Disagree, a 20% discount would result in a bag having a cheaper selling price.</p>	<p><u>Level 4 (Extended thinking)</u></p> <p>Q: A 4 cm by 2 cm by 3 cm cuboid is made up of 1 cm^3 cubes. 6 of the cubes were painted blue and the remaining cubes were painted green and red in a ratio of 1:2 respectively. If 50% of the red cubes were painted purple, find the percentage difference between the number of purple cubes and blue cubes.</p> <p>A: Volume of cuboid = $4 \times 2 \times 3 = 24 \text{ cm}^3$</p> <p>Since each cube has a volume of 1 cm^3, there are 24 cubes.</p> <p>Number of red and green cubes = $24 - 6 = 18$. Number of red cubes = $\frac{18}{3} \times 2 = 12$</p> <p>Number of red and green cubes = $24 - 6 = 18$. Number of red cubes = $\frac{18}{3} \times 2 = 12$</p> <p>Number of purple cubes = $\frac{12}{2} = 6$</p> <p>Percentage Difference between purple and blue cubes $= \frac{6}{24} \times 100\% - \frac{6}{24} \times 100\% = 0\%$</p> <p>OR</p> <p>Since the number of purple and blue cubes were the same, their percentage difference is 0%.</p>

⁴<https://dpi.wi.gov/sites/default/files/imce/assessment/pdf/Forward%20Bloom's%20Taxonomy%20and%20Webb's%20DOK%20Doc.pdf>

With closer guidance and supervision of a tutor and real-time feedback, you can better prepare yourself for the upcoming examinations.

**“Education is not the learning of facts.
It’s rather the training of the mind to
think”**

-Albert Einstein-

Editorial Team

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