

Pre-school maths education requires an urgent rethink - expert

The massive change our world has experienced these past two years, and the fact that the future will be very different from anything we have come to know, means that it has become crucial that the way we think about teaching and learning in the pre-school phase is reconsidered, an education expert says.



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“Understanding how students learn, what is relevant and how we can make the necessary connections, is vital if we are not only going to prepare students for what they may face in the future but also if we are going to develop them as self-confident,” says Lynda Eagle, academic advisor: early years at AdvTech.

She says students must be ready and prepared to solve problems that they may encounter in future – problems that may look very different to those we would have faced in the past – and that they must be empowered to adapt, manipulate and change situations, to be creative and innovative and contribute to their communities in a positive and beneficial manner.

“Mathematics is one of the areas that we encounter in our everyday lives. It plays a vital role in the way the world works but it also appears to, in many cases, conjure up fear, anxiety, and avoidance from a young age,” says Eagle.

“We, therefore, need to ask why this is so, and the answer may be the way in which we approach and teach mathematics - particularly during the younger years. By shifting practices – by understanding how children learn, observing them while they play, tapping into their interests, making meaningful connections, and building a creative, problem-solving culture, we can prepare them in a positive way for future learning in mathematics and life in general,” she says.

Making sense of how maths works

Eagle says that while it is important to build robust connections between number and quantity, it is equally important to help students make sense of how mathematics works, how it is connected to other areas and to develop spatial awareness.

“We need to situate mathematics within the real world, and provide students with plentiful and meaningful opportunities where they are able to hypothesise, explore, experiment, investigate and discover – where they learn through situations and the manipulation of objects in a concrete way in order to build their understanding and to make those all-important connections.”

Of utmost importance is for parents and teachers to be patient, and give students not only the opportunity to explore and experiment in the mathematical space but also the time they need.

“We need to recognise that they also learn at their own pace and in their own way and that this process cannot be rushed, and shortcuts cannot be taken – particularly in mathematics education. This is required if we want students to approach problem-solving in a positive and creative manner throughout their education journey – where they can fail and try again and where there is not just one way of doing something or just one outcome. This is needed if we want students to be able to reason and apply what they have learned and understood in different ways and for different purposes or reasons,” Eagle says.

“Teachers will do well in adopting a strategy where they get to know the students and introduce the concepts in mathematics that are so important in a meaningful and concrete manner, while connecting concepts not only through man-made materials, examples and situations but also by linking them to mathematics in nature, real-life and the arts. Just as in life, recognise that building positive relationships always leads to more successful outcomes, and in future hopefully also the creation of spaces in which mathematics is celebrated.”

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