

Role of Educational Aaps in Enhancing Speed and Accuracy in Mathematics

Dr. Karanam Mahaboob Vali

Assistant Professor, Department of Education, Aligarh Muslim University Centre, Murshidabad, West Bengal

Abstract: This paper focus on the use of educational apps has the potential to reform the learning involvement, a specific application of app knowledge that resulted from a study looking at how mobile devices are utilised in classroom mathematics. The general use of smartphones and tablets today may help to improve education. Learning was made available through a variety of freely installable software at any convenient time and location. Mathematics was one of the most challenging topics to study in school. Approaching mathematics would become more challenging when blended learning was added as an alternative to traditional face-to-face instruction. Independent learning may lessen the challenges of studying mathematics in this new regular education. Students learned several digital tools within some of the study's apps Word problem solving was made possible by technology's affordances, such as multi-representation, dynamic, and tactile, which characterized learning from traditional instruction in the classroom.

Keywords: Application, face-to-face instruction, Mathematics, software and study's apps.

INTRODUCTION

Education apps are all playing a very prominent role in the intelligence of the students. In modern times technology is changing day by day, this educational is very useful for developing the intelligence of students. Educational aaps: Byjus, Vedantu, un-academy are some of the educational aaps. In this app, programming has been made especially for the intelligence of the students and the arithmetical skills in it have been incorporated in the apps for the students in various ways. Math app advantages kids increase their understanding of math concepts without explaining a problem or coming up with an answer. Each major mathematical topic is explained in math functions in a fun and understandable way. Which maths applications for children are the best? Even after they return to school, the youngsters can continue to learn maths with the aid of these top maths apps.

Find the finest math apps for kids to help your child learn the fundamentals of math, including addition and subtraction, multiplication and division, number sense, fractions, geometry, algebra, and more. Young children will learn number recognition and fundamental addition abilities, while older children can work on algebra and calculus. There is a list of the top math applications for people who enjoy playing difficult math games to keep their minds active as they age.

The math apps educate children about the value of arithmetic in daily life. The Common Core State Standards for Math and some of the apps listed below are targeted at the math domains and standards needed by elementary level, middle level, and high school students. Everybody approaches maths issues in a different way, therefore using traditional teaching methods to

increase comprehension may not be the ideal approach.

Best Math Apps

1. Komodo Math

For children ages 5 to 11, Komodo provides a strong basic in mathematics because it was formed by teachers for families. A customized educational program for your child will be created by an expert mathematical teacher. Each user's starting point in the app is determined by a mathematical tutor, and parents decide on the prizes. Then, to enhance their arithmetic knowledge and skills, kids practice their math skills frequently and in little doses. Since this is the essential foundation for imminent achievement in mathematics, Komodo concentrates on helping students become proficient in arithmetic and mental maths. It guides the student through counting, addition, subtraction, multiplication, including times tables, fractions, decimals, percentages, and many other important ideas.

Age: 5 to 11. Available: Android, iPhone and iPad

2. Rocket Math

The Rocket Math app provides it easy for kids to master their math facts. The Rocket arithmetic Online Game offers a technique to teach kids arithmetic facts so that they may like it, do it well, and do it quickly. It is scientifically intended for success. Playing this game challenges, them to pick up some math facts. Any device, anywhere, at any time of day, can be used by kids to sign in and play.

The basics of 1s through 9s for add, subtract, multiply, and divide, as well as Add to 20, Subtract from 20, Fact Families, and 10s-11s-12s,

are the ten learning tracks that students can be placed into.

Get instant help and corrections – Any time you can't answer a fact in 3 seconds, the problem and answer are given by Mission Control, and you have to prove you've learned it.

Rocket Math is an offshoot of an existing programme for schools designed to increase children's speed and fluency in answering simple arithmetic. Rocket Math believes that students are motivated by seeing their own learning and success. They love learning math facts because it makes doing math much easier. Parent and Teacher dashboards allow you to see the progress of any children or a group of students. Here is the list of four elements in an app that will help your child learn math facts recommended by Dr Don Crawford. Age: 6 to 14. Available: Android, iPhone and iPad.

3. DoodleMaths

Doodle Maths is a maths programme that supports maths learning in homes and schools. It identifies children's weaker areas in learning and adapts a programme to that child. Designed and optimised for mobile and tablet, DoodleMaths is perfect for learning on-the-go and as a support for homework. It is used both to raise attainment with lower attaining pupils and extend the more able, regardless of special educational needs or language barriers. Its in-built intelligence identifies the strengths and weaknesses unique to each child and constructs a work program specific to their needs.

Designed by maths teachers, Doodle Maths app adapts to meet your child's current ability and knowledge – just like a teacher would. It facilitates frequent practise and provides help and support to learners who are subscribed to the service. Though created in the U.K., DoodleMaths is also aligned to the U.S. Common Core Standards.

Build the maths confidence of your 4-14-year-old with a work programme tailored to their strengths and weaknesses, proven to raise attainment. With every question answered, DoodleMaths learns more about your child's understanding, building a work programme to improve their ability and confidence. You can get involved with your child's maths and help motivate them every step of the way through the parent area of our website and the Parent Connect app. Age: 4 to 14

4. IXL Math

The IXL Math app features wide-ranging, curriculum-aligned math and English content for students between the ages of 4 and 18. Using IXL, your children will learn at their own pace, IXL's adaptive questions automatically adjust to just the right level of difficulty. A wide variety of question types keeps practice sessions fresh and enables all types of learners to succeed. You can practice and answer 10 questions for free in IXL.

With unlimited questions, engaging item types, and real-world scenarios, IXL helps learners experience maths at its most mesmerising! Maths practice is an essential aspect of maths education and this app tightly focuses on making this as productive and efficient as possible. Parents and teachers alike can utilise it to ensure that their children master and remember the maths skills they are taught at school. IXL's dynamic maths practice skills offer comprehensive coverage of the England key stage 1 to 4 curriculum. Age: 3 to 18. IXL Math app is available for Android and iOS (iPhone and iPad) devices.

5. Pre-School and Kindergarten Math

The app uses block modeling to model word problems, and like everyday Math, it uses a variety of algorithms to help students understand our numbering system. This app brings a fun, exciting, competitive platform that can be used by all ages. Age: 3 to 7. Available: iPhone and iPad

6. ANTON- Kindergarten – Grade Five

ANTON is a math practice app with over 10,000 exercises and learning games. The lessons feature high-quality animated videos that are narrated, attractive, and explain the concepts clearly and accurately. ANTON has exercises for all topics in the curriculum.

ANTON teaches kids math topics such as numbers, counting, addition, subtraction, multiplication, division, and geometry. It does this through physics-based games that add a puzzle-solving dimension to the challenge. ANTON describes which parts of the CCSS it meets, which makes it useful for teachers who follow these standards.

ANTON is an app that aims to hit a perfect balance between gameplay and math learning. The app develops kids' intuition and understanding of core math concepts, from kindergarten through grade 5. Age: 5 to 18. Available: iOS, Android

7. Photomath

The Photomath app is accessible at no cost on Android and iOS platforms, offering convenient math problem-solving capabilities through your mobile device's camera. Simply direct your camera towards a math problem, and Photomath will swiftly present the solutions accompanied by comprehensive step-by-step instructions. Recognized as the top mathematics application, Photomath employs augmented reality features to effortlessly derive answers for math queries.

The Photomath app excels particularly in handling fundamental math problems, including algebra. By inputting the problem directly onto the app's screen, users can effortlessly find solutions. This math problem-solving application accommodates various mathematical concepts such as integers, arithmetic, decimals, algebraic expressions, graphs, and more. To cater to a diverse user base, the app supports approximately 36 languages, enabling a large number of people to benefit from its features. Photomath presents elegantly animated calculation steps, akin to a teacher or tutor demonstrating on a chalkboard in real life. Its utilization has led to enhanced student performance across numerous classrooms and schools worldwide. The Photomath app is freely accessible on iPhone, iPad, Android, and web platforms.

8. Prodigy

Prodigy stands out as one of the top-notch math apps available for elementary students at no cost. This curriculum-aligned, fantasy-themed math game offers a fun and engaging platform for kids to enhance their essential math skills. Notably, Prodigy is completely free to utilize, providing accessible learning opportunities. The adaptive nature of Prodigy Math Game ensures that activities are tailored to your child's individual strengths and weaknesses. Moreover, an exceptional reporting system keeps parents or teachers well-informed about their children's progress and identifies areas that require further attention, facilitating effective monitoring of skill development. With a wide age range from 6 to 14, Prodigy accommodates students from grades 1 to 8, allowing ample room for growth alongside your child. You can access Prodigy through various platforms, including the iTunes App Store, Google Play, Amazon Appstore, and the web.

9. Splash Learn

The Splash Math app, designed for ages 5-10, offers comprehensive content practice spanning from 1st grade to 5th grade. This versatile platform

caters to all types of learners, allowing students who have completed their grade level to explore advanced topics and those needing a refresher on previous grade skills to reinforce their knowledge. Splash Math dynamically adapts to each child's level, ensuring mastery of math skills at their respective grade levels.

In 1st grade, Splash Math aids children in learning addition facts, subtraction facts, and time. Moving on to 2nd grade, it helps children develop skills in Place Value, Number Sense, Money, and Measurements. For 3rd graders, Splash Math focuses on multiplication facts, division facts, fractions, and geometry. Additionally, 4th graders benefit from Splash Math's support in learning decimals.

One of the standout features of Splash Math is its cross-platform accessibility, allowing kids to seamlessly access the app via desktop or iPad using the same login credentials. Another remarkable aspect is the provision of insightful performance reports presented through a graphical dashboard, enabling parents to identify their child's strengths and areas that require improvement while they engage in practice sessions. The age range for Splash Math spans from 4 to 14, ensuring its relevance for a wide range of students. To access Splash Math, simply download the Splash Learn app on your child's preferred device, be it an iPad, iPhone, iPod, Android device, laptop, or PC.

10. Math Learning Center

The Math Learning Center offers a collection of free apps suitable for various age groups, ranging from pre-K to 7th grade. These math apps serve as valuable tools to help children visualize their thought processes and gain a deeper understanding of mathematical concepts. The app selection includes resources for fractions, number frames, math vocabulary cards, number lines, pattern shapes, math clocks, money pieces, and more.

The Math Learning Center apps cater to different platforms, including iPads, Android tablets, and web browsers, making them a preferred choice for teachers in classrooms with bring-your-own-device (BYOD) policies or mixed-device environments. The age range for these apps spans from 4 to 14, accommodating a wide spectrum of learners. You can access the Math Learning Center apps on various platforms such as iPad, Android devices, and web browsers, ensuring convenient availability for both students and teachers.

11. Play: Adding

Introducing Play: Adding, an engaging math game that allows your child to sharpen their addition and subtraction skills. This feature-rich math app offers an array of exciting elements, including different gameplay levels, badge rewards, and the capability to track learning progress. With comprehensive lessons, interactive exercises, and stimulating quizzes, Play: Adding is designed to actively involve your child and foster a deep understanding of Mathematics. This app specifically targets kids aged 5 to 8, aiming to enhance their numeracy skills.

Inside Play: Adding, you'll discover a variety of captivating exercises and games that provide ample opportunities for kids to practice and reinforce their math abilities. Whether it's addition or subtraction, this app offers an enjoyable and educational experience for young learners.

Play: Adding is available on iPad and Windows platforms, ensuring accessibility across different devices and operating systems. So, equip your child's learning journey with this math app to promote their mathematical proficiency and engagement.

12. Zap Zap Kindergarten Math

Zapzapmath, an educational math game, is thoughtfully crafted by experienced teachers, parents, and gamers to offer elementary school students (K-6) a captivating and effective approach to learning math. With its games-based format, Zapzapmath serves as the perfect companion throughout a child's early mathematical education, making the learning process engaging and enjoyable.

Within the app, you'll find a variety of interactive Math Games for Kids that stimulate and captivate young learners, with over 15 million questions answered to date. Zapzapmath boasts an extensive collection of over 150 math lessons, providing ample opportunities for practice. These lessons align with comprehensive curriculum standards, ensuring they mirror State Standards and cover the necessary topics. All of these features come together to create a game-based ecosystem that fosters enjoyable math learning for preschool, kindergarten, and elementary school children.

Zapzapmath caters to children aged 4 to 12, spanning a wide range of developmental stages. The app is available for both Android and iOS devices, offering flexibility and accessibility across different platforms.

Engage your child in the world of math learning with Zapzapmath, where education meets entertainment, empowering them to develop strong math skills while having fun along the way.

13. Sumaze Primary

Sumaze Primary presents a delightful educational math puzzle game designed specifically for learners aged 4 to 7. This engaging app serves as an ideal platform for children to develop their mathematical abilities and foster forward-thinking skills. Through a series of captivating puzzles, Sumaze Primary incorporates various mathematical concepts such as arithmetic, addition, subtraction, odds and evens, doubling and halving, pattern recognition, and more.

What sets Sumaze Primary apart is the seamless integration of game mechanics and mathematical challenges. The game cleverly intertwines the player's math and thinking skills as the foundation of gameplay, resulting in a cohesive and immersive experience. This level of thoughtful design is regrettably rare among math game apps, making Sumaze Primary stand out from the rest. The app is available for Android, iPhone, and iPad, ensuring accessibility across multiple platforms. With Sumaze Primary, young learners can embark on a math-filled adventure that not only entertains but also enhances their mathematical proficiency and critical thinking abilities.

14. Timeland: Calendar and Clock

Timeland is an app that teaches children the concept of time. The features include a child-friendly calendar and clock to teach the concept of everyday activities as well as display how time moves on. This application is designed for children aged 3 to 7 and comes in a number of different languages. Timeland is a good app that can be used by young children with their parents or unsupported once the timelines have been set up. The ability to access the calendar to a specific date is ideal to map out events for the child on a particular day such as their birthday or a week leading up to an event such as a holiday. Age: 3 to 7. Available: Android, iOS

10 tips for choosing the best math apps for kids

1. Identify Learning Goals: Determine the specific math skills or concepts you want your child to work on and find apps that align with those goals.
2. Age Appropriateness: Consider the age range for which the app is designed. Choose apps

that match your child's developmental stage and math proficiency level.

3. Educational Content: Look for apps that offer a comprehensive and well-structured curriculum, covering a range of math topics and concepts.
4. Engaging and Interactive: Choose apps that provide interactive features, engaging gameplay, and visually appealing graphics to keep your child motivated and interested in learning.
5. Skill Progression: Ensure that the app offers a progression of difficulty levels or adaptive learning to cater to your child's individual learning pace and challenge them appropriately.
6. Clear Instructions and Feedback: Opt for apps that provide clear instructions and immediate feedback to help your child understand and correct their mistakes.
7. Appropriate Challenge: The app should strike a balance between being challenging enough to promote growth and skill development, but not too difficult to discourage or frustrate your child.
8. Learning Support: Look for apps that offer additional learning support, such as tutorials, hints, or explanations to help your child when they face difficulties.
9. Parental Controls: Check if the app provides parental controls or settings to monitor your child's progress, adjust settings, or limit screen time.
10. Reviews and Recommendations: Read reviews and recommendations from other parents, educators, or reputable sources to get insights into the effectiveness, educational value, and user experience of the math apps you're considering.

CONCLUSION

Educational apps can play a significant role in enhancing speed and accuracy in mathematics. These apps can be designed to provide interactive and engaging activities that help students practice and reinforce their mathematical skills. Here are some ways in which educational apps can help:

Practice: Educational apps can provide students with opportunities to practice math problems in a fun and interactive way. This practice can help students build fluency and improve their speed and accuracy in solving math problems.

Immediate Feedback: Educational apps can provide immediate feedback to students on their

math problems. This feedback can help students identify their mistakes and correct them quickly, which can help them improve their accuracy.

Personalized Learning: Educational apps can be designed to adapt to each student's level of proficiency. This allows students to work at their own pace and receive personalized instruction that is tailored to their individual needs.

Gamification: Educational apps can gamify math learning by turning it into a fun and engaging activity. This can motivate students to practice more and improve their speed and accuracy.

Visualizations: Educational apps can use visualizations and animations to make math concepts more concrete and understandable. This can help students develop a deeper understanding of math concepts, which can improve their accuracy.

Overall, educational apps can provide a fun and engaging way for students to practice and reinforce their math skills. By using these apps, students can improve their speed and accuracy in math, which can help them succeed in their academic and professional pursuits.

REFERENCES

1. Chmiliar, L. "Improving learning outcomes: the iPad and preschool children with disabilities." *Front Psychol.* 8 (2017):660.
2. Condie, R. and Munro, B. "The Impact of ICT in Schools- A Landscape Review." *Coventry: Becta.* <http://dera.ioe.ac.uk/1627/> (2007).
3. Gray, P. "Free to Learn: Why Unleashing the Instinct to Play Will Make Our Children Happier, More Self-Reliant, and Better Students for Life." *New York, NY: Basic Books* (2015).
4. Gulliford, A. and Miller, A. "Raising educational achievement: what can instructional psychology contribute?." *Educational Psychology Topics in Applied Psychology*, eds N. Frederickson, A. Miller, and T. Cline (Hove: Taylor & Francis) (2015): 83–108.
5. Haßler, B., Major, L. and Hennessy, S. "Tablet use in schools: a critical review of the evidence for learning outcomes." *J. Comput. Assist. Learn.* 32 (2016): 139–156.
6. Kagohara, D. M., van der Meer, L., Ramdoss, S., O'Reilly, M. F., Lancioni, G. E. and Davis, T. N, et al. "Using iPods and iPads in teaching programs for individuals with developmental

- disabilities: a systematic review.” *Res. Dev. Disabil.* 34 (2013): 147–156.
7. Khoo, E. “Chapter 13: iPad-supported learning and development for a child with mild cerebral palsy,” in *Apps, Technology and Younger Learners: International Evidence for Teaching*, eds N. Kucirkova, and G. Falloon (Abingdon; New York, NY: Routledge Press). (2017).
 8. Melhuish, K. and Falloon, G. Looking to the future: M-learning with the iPad. *Comput. N.Z. Sch.* 22 (2010): 1–16.
<http://www.otago.ac.nz/cdelt/otago064509.pdf>
 9. Outhwaite, L. A., Gulliford, A. and Pitchford, N. J. “Closing the gap: efficacy of a tablet intervention to support the development of early mathematical skills in UK primary school children.” *Comput. Educ.* 108(2017): 43–58.
 10. Pitchford, N. J. and Outhwaite, L. “Chapter 9: Apps teaching early maths skills,” *Apps, Technology and Younger Learners: International Evidence for Teaching*, eds N. Kucirkova, and G. Falloon (Abingdon; New York, NY: Routledge Press) (2017).

Source of support: Nil; **Conflict of interest:** Nil.

Cite this article as:

Vali, K.M. "Role of Educational Aaps in Enhancing Speed and Accuracy in Mathematics." *Sarcouncil Journal of Education and Sociology* 2.6 (2023): pp 1-6.