INTRODUCTION

CODING AND PROGRAMMING.

Technology has grown much faster than everything else. All the technology is developed because of coding and programming. Coding and programming hold a vital role in development. It also includes developments from small projects to big projects.

Learning coding is significant as it builds your skills in programming online, gain a better understanding of how websites and apps are designed and developed.

Below are some of the topics related to **CODING** and **PROGRAMMING**

AI and ROBOTICS

This aids to discover the capability of robots and their impact on society, and understand how artificial intelligence (AI) is changing the way we live and work.

PYTHON

This is an easy to learn, powerful programming language. We introduce the reader informally to the basic concepts and features of the python language and system.

JAVA

Learn about this programming language and its significance, which helps a person to move easily from one computer system to another

WEB DEVELOPMENT

Explore different areas of this in-demand field. Build your knowledge as a developer today

WEB ANALYTICS

Learn about the role that analytics play in websites, digital and social media, the techniques that are used and why they are important.

EXCEL

Get a great introduction to excel and its multiple uses

- Many more

WHY LEARN CODING AND ROBOTICS?

1. CODING BOOSTS PROBLEM-SOLVING SKILLS

Coding is, without a doubt, one of the most straightforward ways for children to boost their problem-solving skills.

Someone with well-honed problem-solving skills weaves disparate skills such as creativity, emotional intelligence, research skills, collaboration, and decision-making into a cohesive and effective response.

In a programming context, coders are constantly asked to problem-solve. They practice all but requires them to break issues down into more manageable sub-problems, then progress through an iterative process of identifying, prioritizing, and implementing solutions. Thus, children start honing their problem -solving skills as soon as they take their first coding challenge.

One 2013 study conducted on five- and six-year-olds found that when children participate in programming environment, they have “opportunities to develop mathematical concepts, problem -solving and social skills.” Moreover, the researchers noted that the study’s young participants often enjoyed their learning experience and were engaged in the age-appropriate programming games and activities provided for them.

That said, the benefits provided may vary according to age and relative cognitive development. For example, another study conducted with four to five-year-olds, noted that its participants demonstrated increased non-verbal cognitive abilities, but showed no statistically difference in their problem-solving skills.

This research indicates that even if your child doesn’t want to go into coding as an adult, establishing a practice of coding early in life will nevertheless help them build highly transfer0able cognitive skills.

2. CODING IMPROVES COMPUTATIONAL THINKING

One 2014 study found that coding games may help boost middle schooler’s grasps on computational learning. Children can begin by solving puzzles on paper, continue on game boards, and ultimately complete their solutions on computers. Through this process, learners can be guided through increasingly complex algorithmic thinking activities that are built from tacit knowledge and excitement about game play.

This particular study concluded that engaging in computational thinking activities, children gained a better understanding of algorithmic thinking patterns. This improved grasp could translate well into mathematical pursuits and bolster a child's problem-solving skills. These gains can have a clear positive impact on their performance as students, and in the long run as professionals.

3. CODING ENCOURAGES PERSISTENCE

Computer science is one of the few professional's disciplines where its entirely acceptable to be near-constantly failing. Not only is failure immediately recognizable- ie, a program "breaks", and doesn't work as intended- but success literally cannot be achieved until errors are handled. Even the most straightforward programs require a coder to understand a set of problems and solve them: otherwise, the code won't run as intended.

The most successful people in life are not those who shy away from failure, but rather those who view it as a helpful signal.

When children begin programming, they come to learn that failure is transient, and doesn't have to be frustrating or a progress-stopper. Even small successes can provide the encouragement kids need to push through issues in their programming. Over time, this perseverance can bolster a child's grit- and serve as one of the most important indicators of their future educational and career success.

Coding helps your child develop a growth mindset: a philosophy where one's ability to learn can be improved upon, adjusted as needed, and stand firm against demoralizing failures.

4. CODING TEACHES CREATIVITY

Experts suggest that kids should learn to code. As a practice, coding positions developers as "creators" or "world builders" within programming environment- by definition, the discipline requires creative thinking and experimental mindset.

With programming, kids are constantly prompted to experiment. Once they understand basic functionalities, they can continually ask themselves, *what if I tried this? Would that work?*

Computers provide feedback, which further encourages young coders to find workable solutions to whatever challenges they face. Age-appropriate coding projects prompt children to tell stories, animate characters, and develop unique programs, which empower them to combine their logical and systematic thinking with creative, artistic and intuitive learning.

5. CODING HELPS TEACH DIGITAL LITERACY

Children need to know technology, in other words, they should be digitally literate. Technology surrounds us; it supports our work, facilitates communication, enables social connectivity, and upholds nearly every industry in the economy. In the modern world, being able to understand and engage with technology isn't just good to have- it's a necessity for navigating an increasingly digitized society.

Digital literacy, generally speaking, refers to a person's ability to understand and engage with technology in a thoughtful meaningful way. Topics such as internet safety, cyberbullying, digital footprints, and online ethics all fall under the purview of digital literacy.

For example, digital-literate children can research topics online, find relevant information, and then think critically about the sources they identified. From there, they can formulate their own opinion and, if one is needed, a response. They can also manage their digital presence and communicate with others via online channels.

All online communication is facilitated via coded programs; such as games, like Minecraft, allow users to code their own features. It seems reasonable to think that programming will become a necessary literacy in its own right, as much as navigating a social media platform or internet research ever was.

It seems best for parents to encourage their children to get ahead of the curve by learning to code early.

6. CODING IS A CAREER BUILDING SKILL

The importance of programming cannot be understated in our economy, which is now overwhelmingly driven by technology.

Not all employers require their developers to obtain a four-year degree; many are so strapped for talent that they welcome anyone with the necessary skills and working potential.

Kids should code even if they aren't interested in becoming full time developers; they can still benefit professionally from learning a coding language or two. Programming savvy is valuable,

regardless of your child's educational background or job interest. In some cases, it may even be the capability that ultimately boosts them above their job market competitors.

The biggest hurdle is mastering the first programming language - but once they do, they will be well positioned to learn different languages, frameworks, and technologies later on life.

7. CODING IMPROVES CONFIDENCE AND COMMUNICATION SKILLS

Most software programmers work in teams and collectively strive to achieve development goals.

As the researchers write: "enhancing performance experiences requires integration of soft factors, such as communication, team spirit, team identity, and values, into the overall development process.

Sure; coding doesn't need to be a group endeavor but it provides excellent context for collaboration. Enrolling your child in a programming class could be a great way to develop their team building and communication skills. - and having well-tuned communication skills empowers children to navigate social environments, collaborate with others, perform well academically, and achieve their goals.

Most importantly, kids learn how to develop confidence and a healthy self-image. A coding project teaches your child that any problem is solvable, obstacle can be overcome with repeated creative effort and teamwork.

FINAL THOUGHTS.

Its safe to say that coding is one of the most constructive hobbies for your child to adopt, especially since it can help them develop persistence, communication, creativity, and higher-order thinking.

Yes, learning to code also sets your child up for potentially lucrative career opportunities, but it offers children much more than that. A modern parent can't go wrong by encouraging their child to program. Start with the resources available and introduce your child to developmentally appropriate programming today.