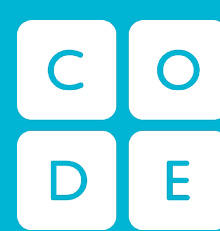


State of Computer Science and ICT education in the United Arab Emirates



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STATE OF COMPUTER SCIENCE AND ICT EDUCATION IN THE UNITED ARAB EMIRATES

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FOREWORD

This report serves as a comprehensive exploration of the United Arab Emirates' commitment to fostering a knowledge-based economy and equipping its citizens with the skills necessary for success in the digital age.

As we stand at the crossroads of the 21st century, the role of Computer Science and Information and Communication Technology (ICT) in shaping the future of nations is more critical than ever.

As we navigate through the contents of this report, we invite policymakers, educators, and stakeholders to reflect on the current state of Computer Science and ICT education in the United Arab Emirates. The insights presented herein are a testament to the UAE's commitment to creating a society where digital literacy and computational skills are not just valued but are integral to its vision of a prosperous and innovative future.

This foreword marks the beginning of a journey through the intricate landscape of the UAE's educational transformation. We hope this report serves as a guidepost for continued innovation, collaboration, and progress in the realm of Computer Science and ICT education.



“WE WANT TO HONOUR THE CONTRIBUTIONS OF CODERS AND PROGRAMMERS SO THAT WE CAN ENCOURAGE FUTURE GENERATIONS OF TECHNOLOGY PROFESSIONALS TO PARTICIPATE IN BUILDING THE FUTURE OF THE UAE.”¹

His Highness Sheikh Mohammed bin Rashid Al Maktoum

Vice President and Prime Minister of the United Arab Emirates and Ruler of Dubai

EXECUTIVE SUMMARY

Marking a strategic shift away from oil and gas dependency, the United Arab Emirates is prioritizing a knowledge-based economy...

...with a substantial budget allocation, USD 2.7 billion in 2023 and USD 2.8 billion in 2024 for education, and a focus on programming and emerging technologies.

This reflects the nation's commitment to transforming its economic landscape and reducing dependency on traditional sectors.

The UAE places a strong emphasis on developing elite tech talent through substantial investments in education, allocating funds to universities and implementing targeted directives to enhance computational thinking. Currently, 24% of the population possesses programming skills, aligning with the UAE National Strategy for Artificial Intelligence. Initiatives like 'UAE Codes Day' and 'One Million Arab Coders' aim to foster coding skills among the youth, contributing to the nation's vision for a digital future.

Results from the online panel survey conducted for the report reveal that 96% of parents believe computer science fosters creativity, problem-solving skills, and structured thinking, while 88% of the UAE public believes that Computer Science opens job opportunities and reduces inequalities.

Ranking 6th globally in the Network Readiness Index for ICT skills in the education system, the UAE showcases remarkable digital proficiency among students and teachers, emphasizing the nation's commitment to fostering a digitally literate society. Furthermore, 86% of the public agrees that offering early-age training in computer science is crucial to avoid missing a strategic opportunity compared to other countries already implementing such programs.

The UAE stands out as one of the few countries where computer science education is mandatory in primary and secondary schools, with 99% of parents whose children are learning computer science expressing a desire for them to continue studying it.



The evolution of the UAE's computer science education, marked by milestones such as the 2015 revision of the Computer Science and Technology Standards (CST) and the 2019 integration of technology subjects under the Computing Creative Design and Innovation (CCDI) curriculum, underscores the nation's strategic and progressive approach to nurturing a technologically skilled future generation.

Moreover, ongoing initiatives, such as the collaborations with Code.org and the Australian Council for Educational Research (ACER) in 2023/24 ensure that the Computer Science curricula aligns with the latest global best practices.

The UAE will continue to sustain its growth trajectory by developing further in areas such as experiential learning, raising awareness about computer science, increasing Arabic content, and teacher specialization, with significant progress being made through initiatives such as the ongoing collaboration with Code.org.

The nation anticipates continuous innovation, enhanced resources, and comprehensive teacher training to solidify its position as a global leader in digital literacy, preparing the youth for the dynamic demands of the 21st century workforce⁹.



OBJECTIVES AND METHODOLOGY

OBJECTIVES

The purpose of this study is to acquire additional information regarding the state of computer science (“CS”) education in the United Arab Emirates. To achieve this purpose, the study considers the knowledge, attitudes, emotional and functional drivers and perceptions of students, parents, and teachers in the UAE.

KEY OUTCOMES

1. Gain insights into the general population’s understanding of computer science, including its main attributes, associations, and values
2. Understand the attitude, interest, and curiosity towards CS education
3. Identify the main emotional and functional drivers and barriers to learning CS
4. Discover society’s views on the impact and usefulness of CS education
5. Evaluate the importance assigned to CS in terms of education or employability and how it aligns with the UAE’s Vision and Goals

METHODOLOGY

The report methodology is based on qualitative and quantitative studies and primary and secondary data sources



1. QUALITATIVE STUDY

A. Focus groups

- 6 online focus discussions (2h each) with teachers, students, and parents with school aged children (separately)

B. In-depth interviews

- 3 interviews (30 min each) with opinion leaders from the education and entrepreneurial spheres (e.g., university deans, professors, entrepreneurs)



2. QUANTITATIVE STUDY

A. Online panel survey

- Survey (in English) with sample size of 614 parents² with children of ages 6–19 years going to school in the UAE

Questionnaire split:

- Scope of CS as a concept
- Penetration of CS education
- Public opinion on CS learning

A man wearing a white thobe and ghutra is seated at a desk, working on a laptop. He is looking at the screen with a focused expression. The desk is white and has a laptop, a folder with papers, and a pen on it. The background shows large windows with a view of a city skyline. The lighting is bright and natural, coming from the windows.

THE IMPORTANCE OF COMPUTER SCIENCE AND ICT IN THE UAE

The ICT sector plays a pivotal role in shaping the economic and social fabric of highly developed countries. In the United Arab Emirates, ICT is crucial to the ‘We the UAE 2031’ vision³, particularly under its Forward Economy pillar.

This strategy focuses on crafting a dynamic, growth-oriented economy through diversification, with a strong emphasis on ICT, digital economy, and financial technology. It aims to cultivate a society of highly productive human capital with advanced levels of digital literacy and to create an environment conducive to advanced innovation for the future.

BY 2030, AI ALONE COULD CONTRIBUTE AN ESTIMATED 14% TO THE NATIONAL GDP (EQUIVALENT TO USD 96 BILLION)⁵



The most dynamic and competitive economy

Competitive, flexible, and highly productive human capital

An advanced, innovative environment that creates the future

The nation has, therefore, embarked on a journey to reshape its economic landscape. This shift is driven by a strategic move away from a traditional reliance on oil and gas, towards a knowledge-based, technologically advanced economy. In 2019, the digital economy in the UAE contributed 4% of the UAE’s GDP⁴, while by 2030, AI alone could contribute an estimated 14% (equivalent to USD 96 billion) to the GDP⁵.

This upward trajectory is reinforced by significant government investments in ICT. In 2019, USD 9.9 billion was allocated to the sector, leading to a GDP growth of 4.4%⁶.

Anticipating continued growth, a substantial investment of USD 23 billion is earmarked for the sector in 2024⁶. In addition to the economic benefits, investments in areas such as CS help reduce racial, socioeconomic and gender inequalities.

88% OF THE PUBLIC BELIEVES THAT TEACHING CHILDREN COMPUTER SCIENCE OPENS UP JOB OPPORTUNITIES AND REDUCES EXISTING RACIAL, SOCIOECONOMIC AND GENDER INEQUALITIES⁹



THE IMPORTANCE OF STRENGTHENING COMPUTER SCIENCE AND ICT EDUCATION TO DEVELOP ELITE TECH TALENT IN THE UAE

The UAE's investments in education

Recognizing education as a cornerstone in the pursuit of top-tier human capital, the UAE strategically propels itself toward the goals of the Forward Economy and Forward Society pillars outlined in the 'We the UAE 2031' vision. Meeting the demands of an evolving landscape of technological advancements requires a steadfast commitment to cultivating digital skills and innovative systems, fostering adaptability to emerging technologies. This commitment is evident not only in the substantial investment in education but also in the implementation of targeted directives designed to enhance computational thinking among the youth.

The Federal General Budget for 2023-2026, allocated ~USD 2.7 billion for education in 2023 and ~USD 2.8 billion in 2024.⁷ These figures encompass spending on universities as well, reflecting a comprehensive approach to educational investment.

“IN AN ERA WHERE DIGITAL FRONTIERS ARE EXPANDING AT AN UNPRECEDENTED PACE, EQUIPPING OUR CHILDREN WITH ROBUST COMPUTER SCIENCE SKILLS, INCLUDING CODING AND AN UNDERSTANDING OF GENERATIVE AI, IS NOT JUST AN ASSET—IT’S A NECESSITY. AS WE BUILD THESE DIGITAL SKILLS IN OUR YOUTH, WE EMPOWER OUR WORKFORCE, ENSURING OUR COUNTRY’S COMPETITIVE EDGE IN A WORLD WHERE TECHNOLOGY IS THE UNIVERSAL LANGUAGE OF PROGRESS.”

Ali Al Mansoori

Group Chief Human Resources Officer at e&



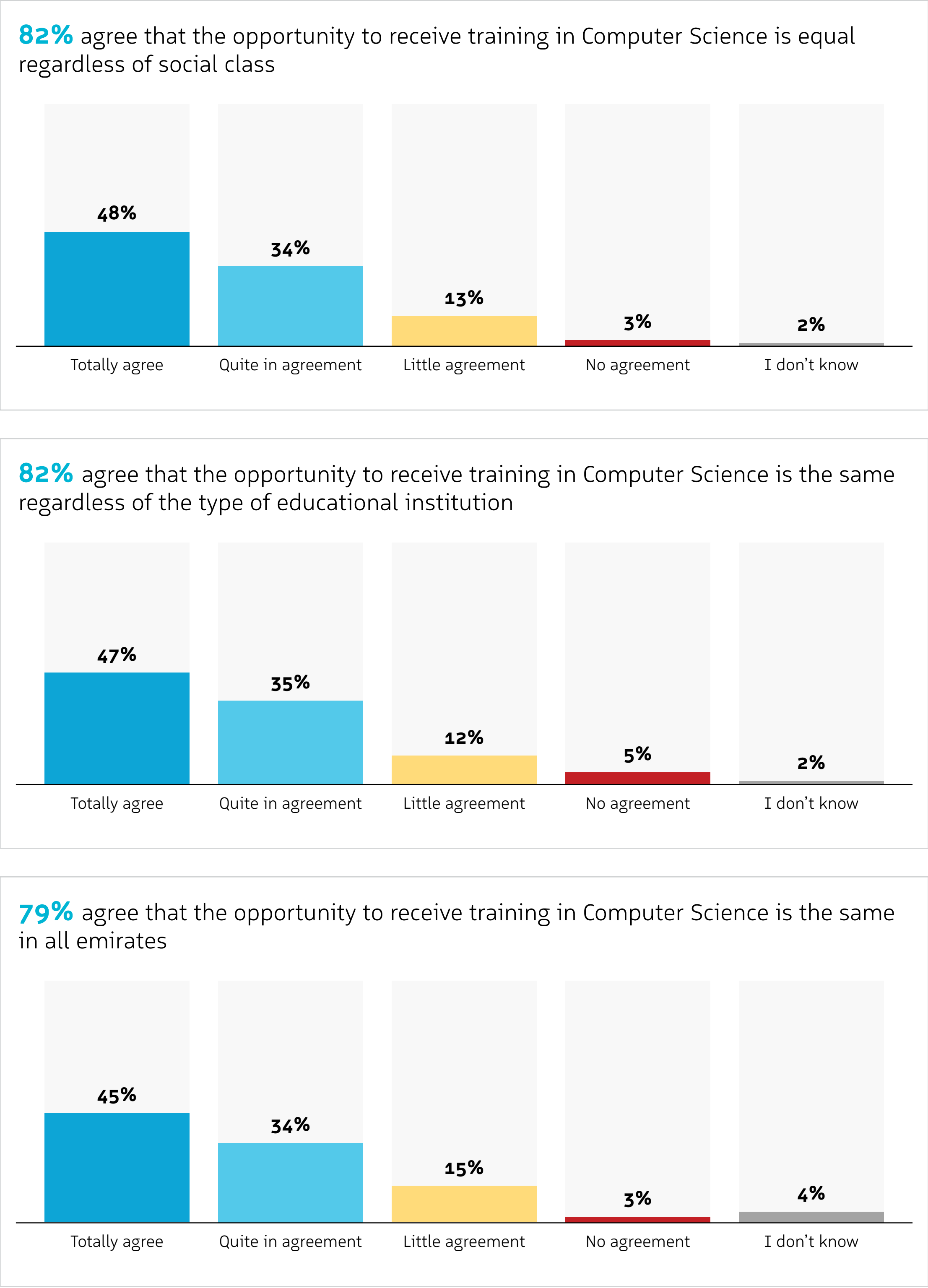
UAE's commitment to enhancing education through ICT and programming initiatives

The UAE is placing a strong emphasis on programming and the integration of emerging technologies in education. As of 2022, a notable 24% of the UAE population possesses the skills to write computer programs using a programming language.⁸

87% OF THE PUBLIC BELIEVES THAT PROVIDING EARLY-AGE TRAINING IN COMPUTER SCIENCE IS CRUCIAL FOR ADDRESSING THE SHORTAGE OF TALENT IN HIGH-DEMAND PROFESSIONS⁹




Figure 1: Public consensus on equal opportunities for learning Computer Science across social class, school type, and emirate⁹



BASE: ALL RESPONDENTS; N=614
ROUNDED PERCENTAGES

This focus on programming is a critical part of the UAE National Strategy for Artificial Intelligence. This strategy not only aims to incorporate AI-based educational tools and content into academic curricula but also highlights the pivotal role of programming in education to establish the UAE as a frontrunner in the AI domain.¹⁰



83% OF PARENTS BELIEVE INTEREST IN COMPUTER SCIENCE IS ASSOCIATED WITH BEING A COMPUTER ENTHUSIAST RATHER THAN BEING GENDER-RELATED⁹

Furthermore, the UAE government has implemented several initiatives to support the growth of coders in the UAE such as UAE Codes Day, One Million Arab Coders, and CodersHQ, all aiming to develop coding skills in the youth.

UAE Codes Day, inaugurated in 2021 and celebrated annually on October 29th, commemorates the launch of the region's first e-government in 2001¹¹.



This day serves a dual purpose. firstly, it aims to bolster the UAE's global appeal as a destination for talented coders, showcasing the country's commitment to nurturing and attracting top coding talent. Secondly, it seeks to position the UAE as a premier incubator for digital talents, emphasizing the nation's achievements in coding and its aspiration to be a global hub for innovation and cutting-edge digital solutions.¹¹



The **One Million Arab Coders** initiative has an overarching goal of cultivating a generation of digital experts. The program offers a spectrum of trainings and certifications, ranging from basic digital literacy to advanced tracks like app development, machine learning, and data analysis. This comprehensive approach ensures that the youth can fluently speak the language of the future — code, with top performers earning up to USD 1 million.¹²



Coders HQ is a dedicated initiative designed to support and enable coders, coding communities, and coding enthusiasts, thereby playing a key role in strengthening the UAE's digital economy.¹³

It aims to:











- Build the region's strongest coding community
- Have the highest coders per capita in the world
- Connect the coding community to the best opportunities¹³

THE EVOLUTION AND STATE OF COMPUTER SCIENCE AND ICT EDUCATION IN THE UAE

The UAE’s standing in ICT skills and Computer Science education rankings

The UAE ranks 6th globally in the Network Readiness Index for ICT skills in the education system, exemplifying the remarkable digital proficiency of its students and teachers.¹⁴ This achievement highlights the nation’s commitment to fostering a digitally literate society.

Table 1: Top 10 countries ranked in the Network Readiness Index for ICT skills in the education system (2023)¹⁴

COUNTRY	NRI RANK
 FINLAND	1
 SWITZERLAND	2
 SINGAPORE	3
 QATAR	4
 INDONESIA	5
 UNITED ARAB EMIRATES	6
 IRELAND	7
 KINGDOM OF SAUDI ARABIA	8
 NEW ZEALAND	9
 AUSTRALIA	10



The qualitative study conducted for this report⁹, which included focus groups with teachers from various school systems, reveals that acquiring programming skills positively impacts learning across various subjects by enhancing problem-solving skills, and fostering creative and critical thinking.

Learning programming empowers students to input equations and convert them into code, resulting in the enhancement of their problem-solving skills and a deeper understanding of algorithms, benefiting students studying mathematics. Additionally, as programming instruction is predominantly delivered in English, it contributes significantly to enhancing the students' comprehension of the English language. Finally, the skills cultivated through programming, including problem-solving, creative and critical thinking, and project creation, also directly benefit students in science-related subjects.⁹

Examining the potential for growth in education at lower levels in the UAE, the findings find resonance in the PISA scores. Conducted triennially by the Organisation for Economic Cooperation and Development (OECD), PISA evaluates 15-year-olds in reading, mathematics, and science, where the UAE has emerged as the leader in the MENA region.



86% OF THE PUBLIC AGREES THAT OFFERING EARLY-AGE TRAINING IN COMPUTER SCIENCE IS CRUCIAL TO AVOID MISSING A STRATEGIC OPPORTUNITY COMPARED TO OTHER COUNTRIES THAT ARE ALREADY IMPLEMENTING SUCH PROGRAMS⁹

The nation's strength in STEM-related subjects is evident, with private schools in Dubai achieving global recognition — ranking 14th in science, 13th in reading, and 9th in mathematics in 2022¹⁵. This marks a significant leap from the 38th global rank in mathematics in 2009, showcasing the UAE's dynamic progression in education. To accelerate this upward trajectory, the UAE needs to continue investing in innovative initiatives that align with its rapid growth in STEM, to cement its position as a global leader in digital literacy and ICT education.

“IN RESPONSE TO THE EVOLVING AI LANDSCAPE, OUR UNIVERSITY REVIEWED EMPLOYABILITY SKILLS, INTEGRATED AI INTO THE CURRICULUM, AND EXTENDED AI COURSE ACCESSIBILITY TO STUDENTS. WITH A STRONG PUSH FOR TEACHING ADVANCED PROGRAMMING METHODS, WE’VE EMBRACED CHANGE WHILE ENSURING AN ETHICAL USE OF AI.”

Prof. Abbas Amira

Dean of the College of Computing
and Informatics in the University of Sharjah

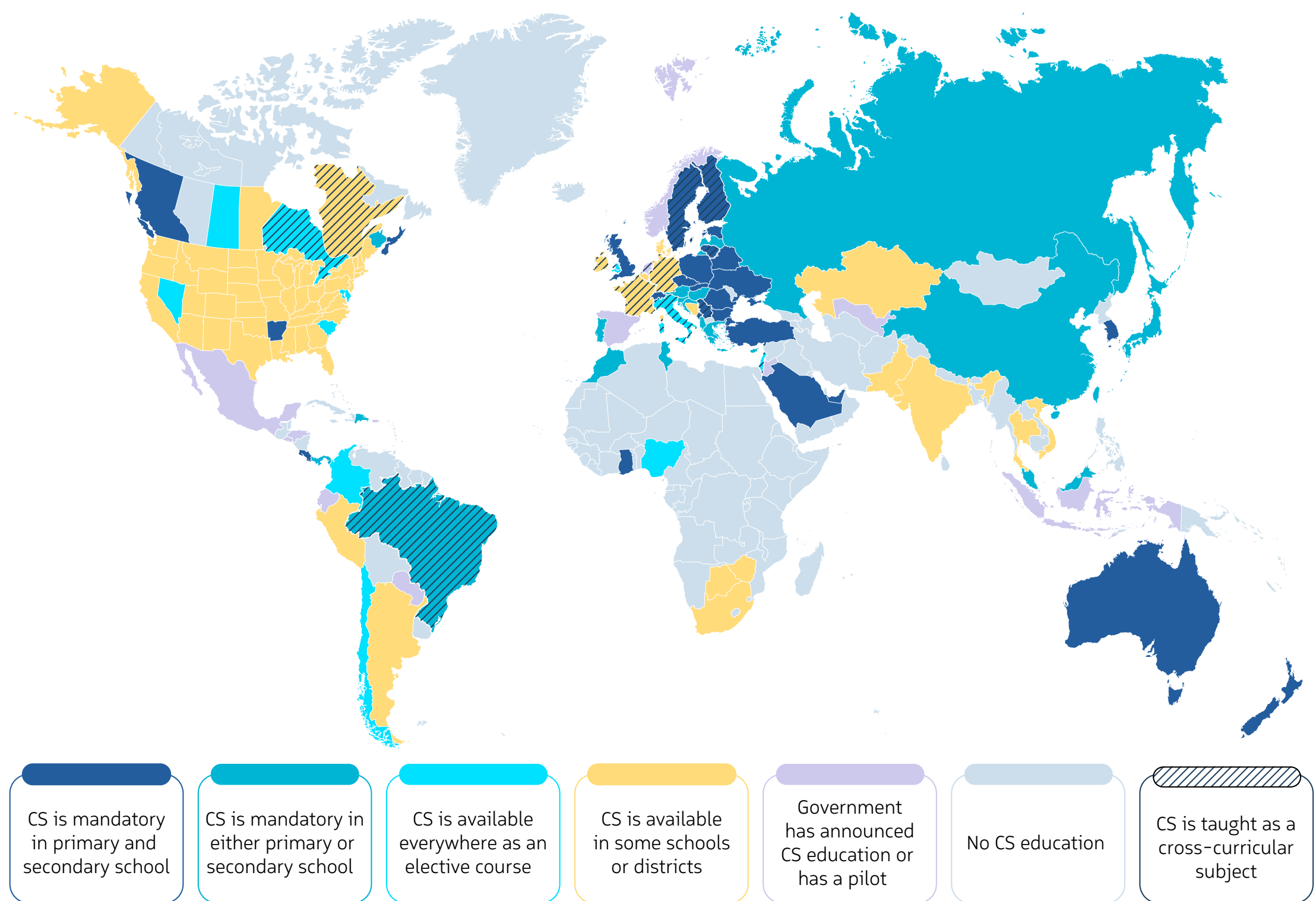


كلية الحوسبة والمعلوماتية
COLLEGE OF COMPUTING
AND INFORMATICS





Figure 2: State of computer science education around the world¹⁶



UAE is one of the few countries where Computer Science education is mandatory during primary and secondary school, underscoring the nation's dedication to assuming a leadership role in CS education.

**99% OF PARENTS
WHOSE CHILDREN ARE
CURRENTLY LEARNING
CS WANT THEIR KIDS TO
CONTINUE STUDYING IT⁹**



The Ministry of Education maintains a continuous effort in refining their Computer Science and ICT curriculum, aligning it with best practices observed globally.





Key milestones in the evolution of Computer Science and ICT education in the UAE





The development of the United Arab Emirates’ computer science education system is a story of strategic progression and innovation, marked by milestones that reflect the nation’s unwavering commitment to nurturing a technologically skilled future generation.

Some of these milestones include the 2015 revision of the Computer Science and Technology Standards (CST), the 2016 introduction of technology-focused subjects like Design and Technology (DT) and Creative Design and Innovation (CDI), and the 2019 integration of the technology subjects under the Computing Creative Design and Innovation (CCDI) curriculum.

Moreover, ongoing initiatives, such as the collaborations with Code.org and the Australian Council for Educational Research (ACER) in 2023/24 ensure that the Computer Science curricula aligns with the latest global best practices.¹⁷

2015 - The Computer Science and Technology Standards (CST) revision

CST emphasizes alignment with globally recognized standards such as those developed by the Computer Science Teachers Association (CSTA) and the International Society for Technology in Education (ISTE). The CST was revised in 2015 to comprise of learning objectives tailored around four key domains¹⁸ (legacy domains that have since been revised):

1. **Digital Literacy and Competence (DLC):** Demonstrate proficiency in the use of computers and applications, as well as an understanding of the concepts underlying hardware, software, operation, and connectivity. 
2. **Computational Thinking (CT):** Demonstrate the ability to use technology for research, critical thinking, problem solving, decision making, data representation, and creativity. 
3. **Computer Practice & Programming (CPP):** Demonstrate the ability to write computer code for problem solving, accomplishing certain tasks, and decision making. 
4. **Cyber Security, Cyber Safety & Cyber Ethics (CCC):** Demonstrate the responsible use of technology and an understanding of ethics and safety issues in using electronic media at home, in school, and in society. 



As depicted in the table below, the total number of periods in the CST curriculum increases with each grade cycle. The computer science curriculum for Grades K–5 (legacy grade cycle that has since been revised to K–4) in the UAE prioritizes fundamental knowledge and skills, particularly within the Digital Literacy and Competence domain. Grade 1 introduces students to basic ICT tools, keyboarding skills, and safety, integrating programming and computational thinking through various activities, including gamified learning on the Code.org platform. By Grade 5, these concepts are further developed, incorporating presentation skills and video editing, utilizing MIT Scratch for block programming projects.¹⁸

Grades 6 to 10 introduce more complex programming concepts with Grade 10 students transitioning to text-based programming languages like Java, building on the skills developed in earlier grades.¹⁸

Table 2: Number of periods per domain and grade cycle¹⁸
(legacy domains and grade cycles that have since been revised)

DOMAIN	GRADE K–5 (H)	GRADE 6–9 (H)	GRADE 10–12 (H)	GRADE 10–12 ADVANCED (H)	ROUNDED TOTAL (H)
DIGITAL LITERACY AND COMPETENCE	19	12	9	14	54
COMPUTATIONAL THINKING	5	6	16	33	59
COMPUTER PRACTICE & PROGRAMMING	5	8	28	33	73
CYBER SECURITY, CYBER SAFETY & CYBER ETHICS	20	18	17	17	72
ROUNDED TOTAL (H)	48	44	70	97	258

2019 – The development of the Computing Creative Design and Innovation (CCDI) curriculum

In 2019, the Computing Creative Design and Innovation (CCDI) curriculum was developed to advance digital transformation through digital literacy skill development. This curriculum integrates technology-focused subjects introduced in 2016, such as Design and Technology (DT) and Creative Design and Innovation (CDI), with Computer Science. The curriculum puts emphasis on the domains of Computer Science, Engineering Principles and Systems, Design and Innovation, Sustainability, and Visual Communication.¹⁷

The framework’s core is its adaptability across different educational levels, enhancing skills in areas like computational thinking, problem solving, and creativity through hands-on projects and activities.

96% OF PARENTS BELIEVE COMPUTER SCIENCE FOSTERS CREATIVITY, PROBLEM SOLVING SKILLS AND STRUCTURED THINKING⁹



“AS A COMPUTER SCIENCE TEACHER, I’VE OBSERVED THE CCDI CURRICULUM MAKE A REAL DIFFERENCE FOR STUDENTS. IT GOES BEYOND DIGITAL LITERACY, FOSTERING HOLISTIC DEVELOPMENT. IN MY CLASSROOM, IT’S NOT JUST A CURRICULUM; IT’S A PRACTICAL PREPARATION FOR THE CHALLENGES OF THE 21ST-CENTURY WORKFORCE.”

Gibran Ahmed

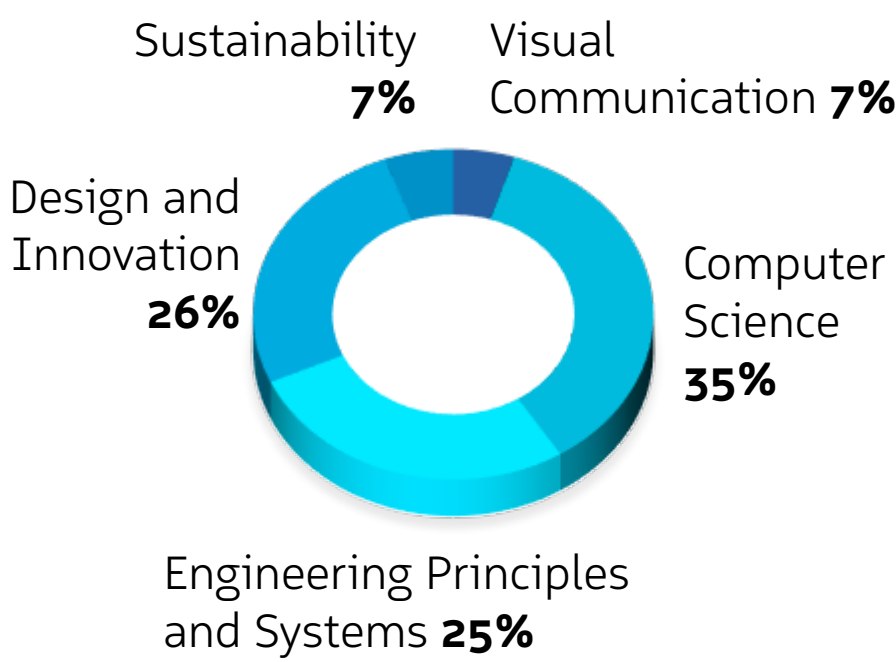
Head of Computer Science at
Amity International School Abu Dhabi



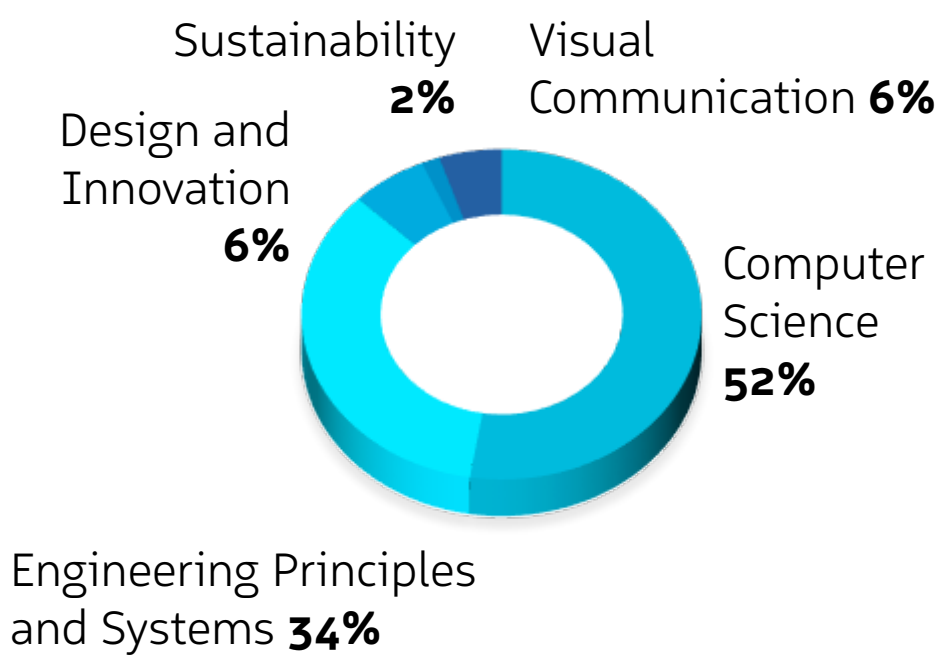
The weight assigned to Computer Science fluctuates within the curriculum as the student moves up through different grade cycles, with students of the Advanced 9-12 grade cycle covering roughly double of the CCDI curriculum of the 9-12 grade cycles.¹⁷

Figure 3: Weight assigned to Computer Science across grade cycles¹⁷

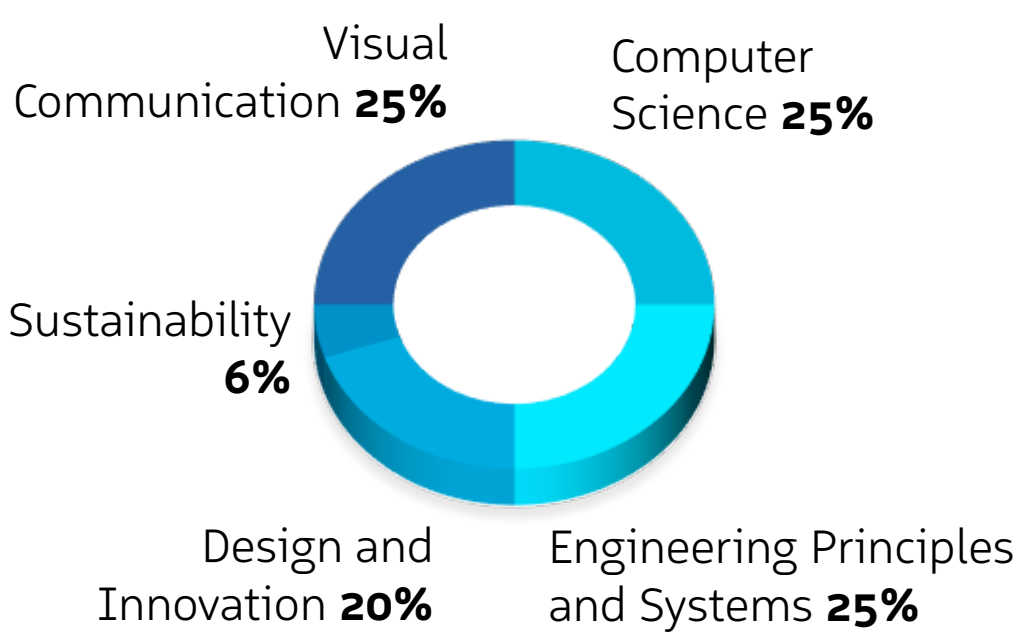
GRADES K-4



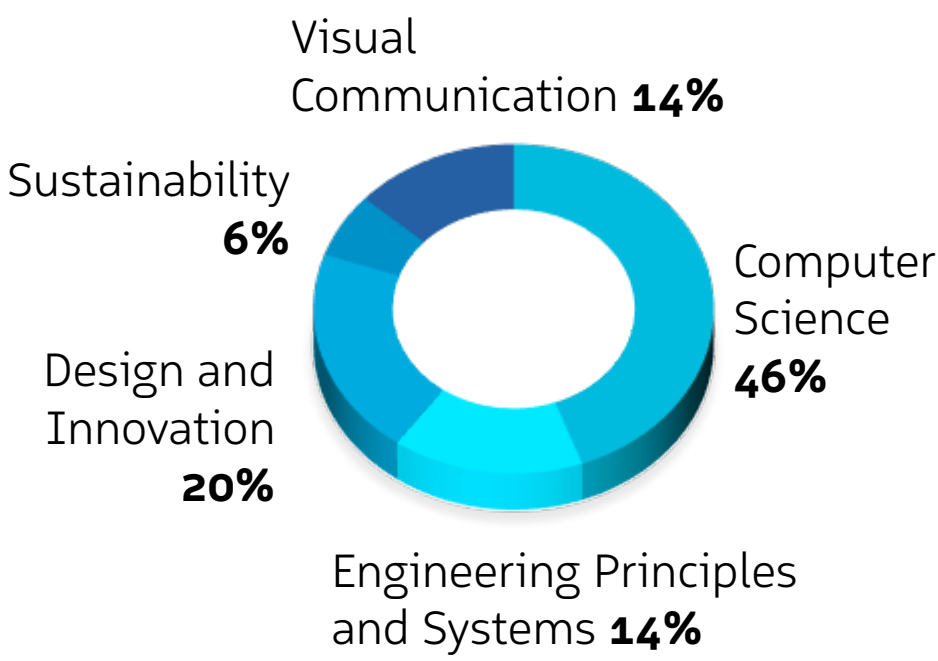
GRADES 5-8



GRADES 9-12 (GENERAL)



GRADES 9-12 (ADVANCED/ ELITE)





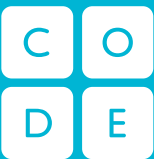
The CCDI’s alignment with the UAE’s vision for a technologically advanced society underlines STREAM (Science, Technology, Reading, Art, Engineering, and Math) integration, supporting a more holistic and interdisciplinary approach to learning and facilitating project-based learning.

2023/24 – Ministry of Education collaborations

The Ministry of Education has ongoing initiatives such as the collaborations with educational organizations like Code.org and the Australian Council for Educational Research (ACER) to ensure its Computing, Creative Design and Innovation (CCDI) curricula follows the latest global best practices. Specifically, the Code.org and ACER experts are reviewing the computer science domain of the CCDI framework to provide recommendations on how to enhance its standards, learning outcomes, KPIs and performance criteria.¹⁹

“CODE.ORG HAS BEEN A GAME-CHANGER IN THE GLOBAL EDUCATION LANDSCAPE, TACKLING THE DIGITAL DIVIDE HEAD-ON. BY PROVIDING RESOURCES, TRAINING, AND ADVOCACY, WE’VE OPENED DOORS FOR MILLIONS OF STUDENTS WORLDWIDE TO LEARN COMPUTER SCIENCE AND HELPED UAE STUDENTS USE THESE SKILLS TO CONTINUE THE TRADITION OF INNOVATION IN THE COUNTRY.”

Pat Yongpradit
Chief Academic Officer for Code.org



AREAS FOR IMPROVEMENT IN COMPUTER SCIENCE EDUCATION IN THE UAE

Following a qualitative and quantitative study conducted for this report⁹, which included focus groups with parents, students, and teachers from various school systems, four areas of improvement have been identified for the UAE to sustain its growth trajectory and enhance Computer Science education in the country.

1. Experiential learning

The current educational approach is perceived as very theoretical in some cases, with a focus on basic concepts rather than hands-on learning and in-depth exploration. More project-oriented classes could facilitate the delivery of a comprehensive Computer Science education.

WHILE **83%** OF PARENTS EXPRESS SATISFACTION WITH THEIR CHILD'S COMPUTER SCIENCE EDUCATION, THE OTHER **17%** CITE SHORTAGE OF TRAINED TEACHERS AND A LACK OF PRACTICAL APPLICATIONS FOR COMPUTER SCIENCE AS THE MAIN AREAS OF IMPROVEMENT⁹



2. Parental awareness

While parents are highly aware of CS being part of the curriculum, they often lack understanding of its content including whether topics such as AI are included or not. Addressing this gap can contribute to a more informed perspective, showcasing school commitments to delivering a comprehensive education. It can also create valuable opportunities for parental involvement, promoting an environment that enhances students' learning experiences.

74% OF PARENTS ARE AWARE THAT CS IS PART OF THE SCHOOL CURRICULUM⁹



3. Arabic content

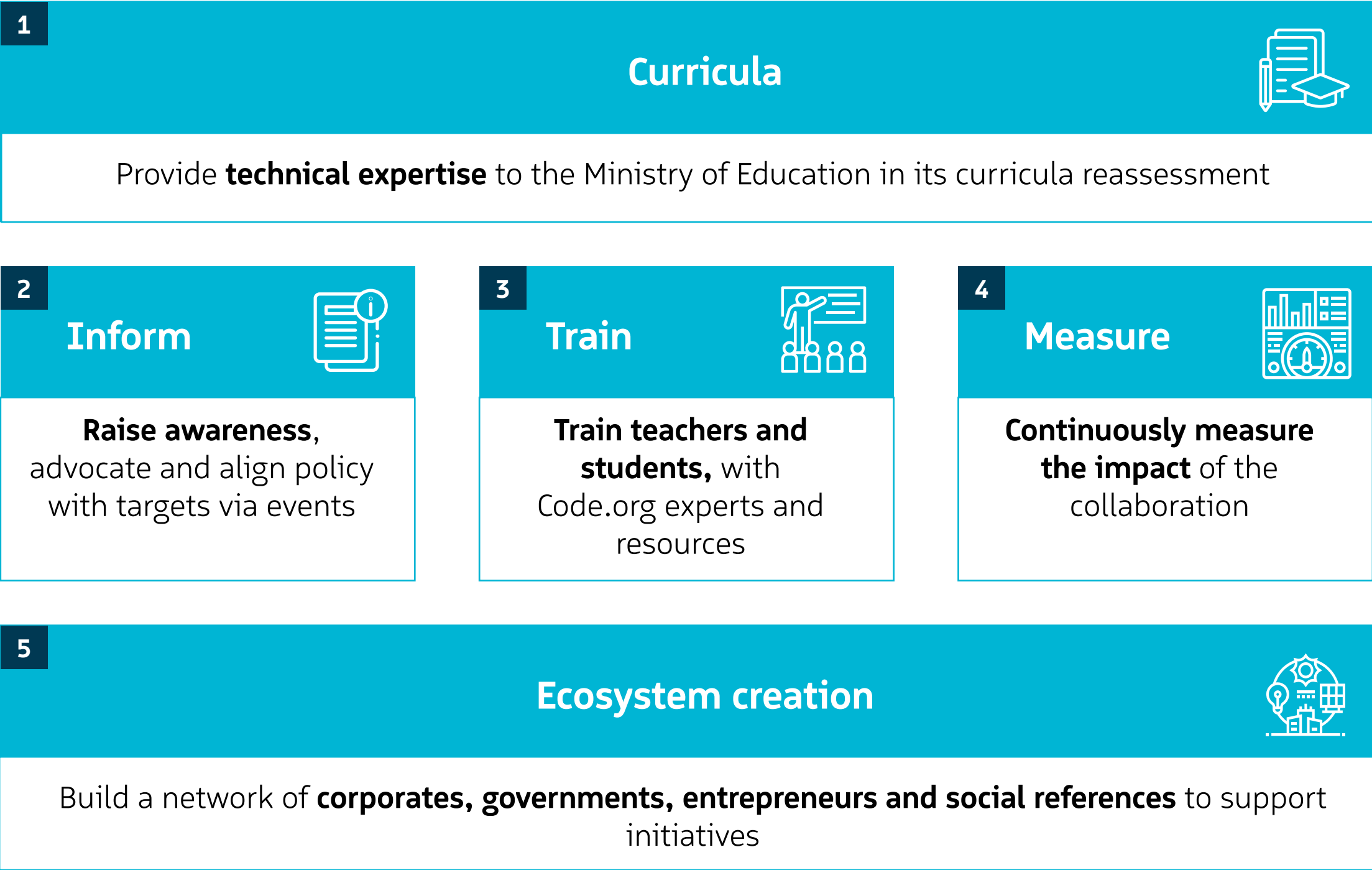
Teaching Computer Science in English, particularly in schools where Arabic is the primary language, presents a language barrier for some students. Having more Arabic content available may facilitate their understanding of essential terms and definitions, contributing to children's mastery of the subject.

4. Teacher specialization

There is a perceived shortage of specialized Computer Science teachers across areas such as programming, artificial intelligence (AI), robotics, networking, and web development. Having more specialized teachers may improve the quality of teaching and maximize student learning.

To continue growing across the identified areas for improvement, the UAE may implement initiatives such as introducing additional project-based learning resources, providing extensive teacher training, and streamlining content to create room for practical content relevant to students (offering clear connections to their daily lives). Simultaneously, efforts to increase Arabic content and raise parental awareness are essential to extend the reach of Computer Science education and enhance the overall learning experience for students.

Significant progress is being made in addressing these areas for improvement through initiatives like the ongoing collaboration with Code.org based on the following strategic pillars:¹⁹



In the **Curricula Pillar**, an evaluation of the country’s curricula is conducted, leading to recommendations and enhancements designed to integrate the latest best practices in Computer Science education.

In the **Inform Pillar**, awareness campaigns and Computer Science events like the Hour of Code demystify Computer Science and inform students and parents of the benefits of computational thinking to improve the perceptions of Computer Science and coding.

The **Train Pillar**, aimed at both students and teachers, empowers educators with enhanced skills to teach computer science through specialized teacher trainings while students are trained through hands-on coding bootcamps guided by Code.org experts and resources.

Within the **Measure Pillar**, the impact of all activities is measured through studies such as this one, which aim to track the evolution of relevant metrics concerning CS and ICT educational activities in the country.

The above pillars are supported by the **Ecosystem pillar**, which involves establishing a robust network comprising public and private sector partners to syndicate efforts to facilitate the successful implementation of these initiatives.

Together, the five pillars create a robust plan, ensuring comprehensive support to the country’s overall Computer Science education for students.

CONCLUSION



The landscape of Computer Science and ICT education in the United Arab Emirates is emblematic of a purposeful journey toward cultivating a knowledge-based economy and equipping its populace with the indispensable skills for thriving in the digital age.

The commitment to Computer Science education is shown through milestones such as the revision of Computer Science and Technology Standards (CST), the introduction of technology-focused subjects like Design and Technology (DT) and Creative Design and Innovation (CDI), and the integration of these subjects under the Computing Creative Design and Innovation (CCDI) curriculum.

The UAE will continue to sustain its growth trajectory by developing further in areas such as experiential learning, raising awareness about computer science, increasing Arabic content, and teacher specialization, with significant progress being made through initiatives like the ongoing collaboration with Code.org.

The online panel survey conducted for the report revealed compelling statistics: 96% of parents believe computer science fosters creativity, problem-solving skills, and structured thinking, while 88% of the UAE public acknowledges that Computer Science opens job opportunities and reduces inequalities.

Looking ahead, the trajectory of ICT and CS education in the UAE is poised for continual innovation and enhanced resources. These efforts collectively reinforce the UAE's position as a global leader in digital literacy, preparing its youth for the dynamic challenges of the 21st century. The UAE's narrative in ICT education is not just about past achievements but a testament to its unwavering commitment to shaping a future where technological prowess is synonymous with national identity.



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The World Governments Summit Organization is a global, neutral, non-profit organization dedicated to shaping the future of governments. The Summit, in its various activities, explores the agenda of the next generation of governments, focusing on harnessing innovation and technology to solve universal challenges facing humanity. The World Governments Summit Organization functions as a knowledge exchange platform, with strategic initiatives throughout the year, that convenes leaders in the public and private sectors to collaborate with world-renowned experts in creating positive impact for citizens around the world.

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ABOUT e&

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Visit www.eand.com

ABOUT CODE.ORG

Code.org® is a non-profit organization dedicated to ensuring that every student in every school has the opportunity to learn computer science as a fundamental part of their education. Code.org's impactful initiatives and partnerships reach millions of students and teachers worldwide, bridging gaps in computer science education and inspiring the next generation. Through policy work, teacher training efforts, and a free, engaging, and inclusive curriculum, Code.org's efforts are reshaping educational landscapes. Code.org also organizes the annual Hour of Code campaign, which has engaged more than 15% of all students in the world.

Visit www.code.org

ABOUT FTI CONSULTING

FTI Consulting, Inc. is a global business advisory firm dedicated to helping organizations manage change, mitigate risk and resolve disputes within the financial, legal, operational, political & regulatory, reputational, and transactional domains. FTI Delta serves as the Strategy Consulting practice of FTI Consulting, focusing on industry-specialized strategy consulting and delivering end-to-end transformation. Since 2022, FTI Consulting is collaborating with Code.org to increase the reach of Code.org's educational program across the EMEA region, by supporting in areas such as content creation, project management, and execution.

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Endnotes

- 1** <https://ai.gov.ae/uaecodes/>
- 2** The sample size of 614 provides a standard error of 3.94% at a Confidence Level of 95%
- 3** <https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/innovation-and-future-shaping/we-the-uae-2031-vision>
- 4** United Arab Emirates Ministry of Economy, Report «Laying the Foundations of a Strong & Active Digital Economy»
- 5** <https://www.pwc.com/m1/en/publications/potential-impact-artificial-intelligence-middle-east.html>
- 6** United Arab Emirates Ministry of Economy, Report «Investing in the ICT Sector in the UAE»
- 7** United Arab Emirates Ministry of Finance
- 8** <https://datahub.itu.int/query/>
- 9** e&, Study titled «State of Computer Science and ICT education in the United Arab Emirates»
- 10** Artificial Intelligence Office, UAE
- 11** National Program for Coders, «UAE Codes»
- 12** <https://www.dubaifuture.ae/initiatives/capacity-building/one-million-arab-coders>
- 13** <https://ai.gov.ae/codershq/>
- 14** <https://networkreadinessindex.org/countries/>
- 15** <https://mediaoffice.ae/en/news/2023/December/07-12/Dubai-private-schools-rank>
- 16** Center for Universal Education at Brookings, Emiliana Vegas et al., Report titled «Building skills for Life»
- 17** United Arab Emirates Ministry of Education
- 18** United Arab Emirates Ministry of Education, Report titled «UAE K-12 Computer Science and Technology Standards»
- 19** Code.org



Contacts

Fran Gracia del Pozo

EMEA Director at Code.org
+34-629-24-32-00
fran.gc@code.org

Elena Gorostiza

EMEA International Partnerships at Code.org
+34-639-17-71-76
elena.gc@code.org

Alberto Pamias

Senior Managing Director at FTI Consulting
+971-56-681-5861
alberto.pamias@fticonsulting.com



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