An introduction to Digital Literacy and Skills
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Dedication
Dedicated to ALL African children online.
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Child Online Africa wishes to express appreciation to Africa Digital Rights Hub for supporting the 2019 edition of the Nice Net November (#NiceNetNovember) and pay for the printing cost of the first edition of ‘An introduction to Digital Literacy and Skills’.

Our heartfelt gratitude goes to Facebook for supporting COA’s call for a better environment with the enabler to run #NiceNetNovember Campaign effectively this year.
Acronyms

- AI - Artificial Intelligence
- COA - Child Online Africa
- EQ - Emotional Intelligence
- WEF - World Economic Forum
- DC - Digital Citizenship
- ADRH - Africa Digital Rights Hub
- DL - Digital Literacy
- IQ - Intelligence Quotient
- DQ - Digital Intelligence
- 1IR - First Industrial Revolution
- 2IR - Second Industrial Revolution
- 3IR - Third Industrial Revolution
- 4IR - Fourth Industrial Revolution
- OECD - Organization for Economic Co-operation and Development

Child Online Africa

Supported by Facebook
The Child Online Africa with support from the Africa Digital Rights Hub and Facebook Africa developed the Introduction to Digital Literacy and Skills handbook to address the current demand on teachers and other stakeholders in addressing the limited public knowledge on the subject matter. An Introduction to Digital Literacy and Skills handbook is to facilitate and guide the delivery of the competencies required by learners in the 21st century.

The ensure teachers as well as parents are supportive of each other in teaching and learning resulting in the total development of the skills young people require to deal with challenges of living in a digital world and thriving is contained in the handbook.

An Introduction to Digital Literacy and Skills is the first and an outcome of Child Online Africa’s annual month long initiative for Internet Safety dubbed Nice Net November (#NiceNetNovember). This book is a resource guide to help the discussion of digital skills and opportunities development in all spaces where the topic is being considered for children and young people.

An introduction to Digital Literacy and skills is intended to help assess and improve the general conversation about digital literacy and citizenship. It is expected that this introductory work (to be updated regularly) is contributing to the quality of teaching and learning in the digital era.
“Our future education and workforce skilling discussion should not focus on how to teach individuals to compete against machines. Technology is only meaningful when it enhances humanity. A horse is faster than a human. But we don’t compete against a horse. We ride a horse. We should focus on how to ride and drive AI and technology, not to run against it.”

– Dr. Yuhyun Park
Introduction and Background

Educational Technology has been a course of study in universities. What began as programming, creating and studying the use of media-based instructional materials has changed with the advent of desktop computers and new softwares. Because of these advances, technology which was hitherto the preserve of engineers, developers, corporations and the military is now available to EVERYONE who wishes to create, entertain, work, network, communicate and socialize. Yesterday’s consumers have become today’s innovators.

As recognition grows that effective citizenship within any community relies on the literacy of its members, it has become imperative to appreciate the role of literacy and skills in the digital space.

Through the work COA does in promoting digital literacy and citizenship, the team constantly emphasize to the young people we engage from time to time that literacy has changed dramatically since pen-and-paper days.

Therefore the change we are calling for now transcends all learning spaces which impact knowledge but most importantly in education and technology sectors. The level of sanity required in this digital age cannot be without respecting the tenets of digital citizenship which are: Respect for Yourself. Protection for Yourself. Respect for Others. Protection for Others. Do not Steal. Honour Intellectual Property.
What is Digital Literacy?

The Internet is an information super highway and everyone needs to be knowledgeable about its technological tools, how to use them with critical thinking and engage with them with some level of responsibility.

Digital literacy simply means having the right digital skills to achieve your life goals. These skills are not necessarily new; most of us already have many of them.

However, it takes a little more than computer literacy skills to be considered digitally literate. The measure of human intelligence have evolved beyond physical and social skills to a whole new dimension.

After each industrial revolution, new forms of intelligence have emerged and have served as a framework for young people’s education, industry workforce development and related government policies.

According to the Digital Intelligence Framework standards; one requires Digital Literacy, Digital skills and Digital Readiness to be considered a Digitally intelligent person in the 21st century.
Various Industrial Revolutions

The First and Second Industrial Revolutions of the late 18th and 19th centuries enabled mechanical means of production at mass scale at increasing levels of efficiency. With industrial machines, mental strength—knowledge and skills—became more valuable traits as physical human skills diminished in importance. This shifted the focus of human worth from body to mind, especially knowledge.

The Third Industrial Revolution of the late 20th century led to the proliferation of computers and the shift to a service-based economy. The rise of electronic devices and the Internet changed how people interact, work and play. This evolved society with its heightened complexity, demanded that individuals have so-called ‘soft skills’ that enable them to handle multi-layered personal interactions. As a result complex conflicts and sophisticated negotiations further changed the focus of human worth from knowledge to emotions and relationships.

It is worth noting that the Fourth Industrial Revolution has compelled even further shifts in the focus of human worth from the mind,(knowledge, emotions, and relationships), to spirit (wisdom and values). This wisdom, together with contextual understanding and insights, has become more important than practical knowledge and skills, which can now be easily aggregated through the Internet. Universal moral values such as respect, kindness and compassion make humans unique and distinguish us from machines.

Such values enable individuals to have strong identities as ‘masters of technology who can fully capitalize on new technologies and thrive in this fast-changing digital age. Individuals with such agency are encouraged to have agility, adaptability and lifelong learning aptitude.
Various Industrial Revolutions

Within the last decade where technology has evolved to the 4iR: There has been an integration in the digital, physical, biological and technological advances. Just as the Second Industrial Revolution witnessed the replacement of human physical labour with machines, the 4iR is enabling the replacement of human mental Labour with artificial intelligence, automation and other digital innovations.

DIGITAL INTELLIGENCE

According to the DQ report 2019 it is estimated that these technological advances will render over 75 million current jobs obsolete over the next four years while creating 133 million new ones over the same period. These new types of jobs will require humans to productively utilize technology using new skills that go beyond physical, cognitive and soft skills. Today's jobs demand 'digital skills'.

The evolvement of IQ, EQ, DQ by DQ Institute (2019)
Various Industrial Revolutions

In the same way as Intelligent Quotient and emotional Intelligence emerged after the 2nd and third Industrial Revolutions respectively, a new form of intelligence called Digital Intelligence Quotient is prevailing in the 21st century.

DQ is a comprehensive set of digital competencies rooted in universal moral values for individuals to use, control and create technology to advance humanity. DQ aims to address the needs of educational systems, industries and governments by providing a shared global blueprint to harness technology for a shared prosperous future during this 4IR and beyond. DQ has three levels, eight areas and 24 competencies composed of knowledge, skills, attitudes and values.

The three levels of growth related to DQ address the following questions: WHAT skills? HOW does one acquire them? And WHY should one acquire the skills?

The balance of all 8 competencies in one is the deal.
The Learning Compass 2030

The Organization for Economic Co-operation and Development Learning Compass 2030 concept suggests that the development of a “competency” involves “the mobilization of knowledge, skills, attitudes and values to meet complex demands. In other words, individuals need KNOWLEDGE, SKILLS and VALUES & ATTITUDE.

Modern classroom’s aim is to help 21st Century child to thrive. This implies that Digital Literacy should be the addition to Reading, Writing and Mathematics which are the pillars for education.

Digital Citizenship
Your ability to use digital tools in a SAFE, responsible and ethical manner.

Digital Creativity
Your ability to turn ideas into reality by the use of technology. (knowledge, technologies & content)

Digital Competitiveness
Your ability to drive entrepreneurship, growth and impact. (innovate, new opportunities)

3 Level of maturity in Digital Literacy
The Learning Compass 2030

The 3 levels of maturity which consist of knowledge, skills and values & attitudes can be expanded to depict the 8 areas of an individual's digital life found below:
How does one relate to each of the eight areas of life?

Digital Identity
Your ability to build a wholesome online and offline identity.
Guiding Principle: Respect for oneself.

Digital Use
Your ability to use technology in a balanced, healthy, and civic way.
Guiding Principle: Respect for time and the environment.

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Mathematics
Languages
Sciences
Religious and Moral Education
Application of Digital Technology
Technologies
Health and Wellbeing
Expressive Arts
Social Studies

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How does one relate to each of these eight areas of life?

**Digital Safety**

Your ability to understand, mitigate and manage various cyber-risks through safe, responsible, and ethical use of technology. Guiding Principle: Respect for life.

**Digital Security**

Your ability to detect, avoid, and manage different levels of cyber threats to protect data, devices, networks, and systems.

Guiding Principle: Respect for property.
How does one relate to each of the eight areas of digital life?

**Digital Emotional Intelligence**

Your ability to recognize, navigate, and express emotions in one’s digital intra- and inter-personal interactions. Guiding Principle: Respect for others.

**Digital Communication**

Your ability to communicate and collaborate with others using technology. Guiding Principle: Respect for reputation and relationships.
How does one relate to each of these eight areas of life?

Digital Literacy

Your ability to find, read, evaluate, synthesize, create, adapt and share information, media and technology. Guiding principle: Respect for knowledge.

Digital Rights

Your ability to understand and uphold human rights and legal rights when using technology. Guiding principles: Respect for rights.
The 24 competencies explained:

1. Digital Citizen Identity: The ability to build and manage a healthy identity as a digital citizen with integrity.

2. Balanced Use of Technology: The ability to manage one's life both online and offline in a balanced way by exercising self-control to manage screen time, multitasking, and one's engagement with digital media and devices.

3. Behavioral Cyber-Risk Management: The ability to identify, mitigate, and manage cyber-risks (e.g., cyberbullying, harassment, and stalking) that relate to personal online behaviors.

4. Personal Cyber Security Management: The ability to detect cyber threats (e.g., hacking, scams, and malware) against personal data and device, and to use suitable security strategies and protection tools.

5. Digital Empathy: The ability to be aware of, be sensitive to, and be supportive of one's own and other's feelings, needs and concerns online.

6. Digital Footprint Management: The ability to understand the nature of digital footprints and their real-life consequences, to manage them responsibly, and to actively build a positive digital reputation.

7. Media and Information Literacy: The ability to find, organize, analyze, and evaluate media and information with critical reasoning.

8. Privacy Management: The ability to handle with discretion all personal information shared online to protect one's and others' privacy.
9. Digital Co-Creator Identity: The ability to identify and develop oneself as a co-creator of the digital ecosystem.

10. Healthy Use of Technology: The ability to understand the benefits and harms of technology on one’s mental and physical health and to use technology while prioritizing health and well-being.

11. Content Cyber-Risk Management: The ability to identify, mitigate, and manage content cyber-risks online (e.g., harmful user-generated content, racist/hateful content, image-based abuse).

12. Network Security Management: The ability to detect, avoid, and manage cyber threats to cloud-based collaborative digital environments.

13. Self-Awareness and Management: The ability to recognize and manage how one’s value system and digital competencies fits with one’s digital environment.

14. Online Communication and Collaboration: The ability to use technology effectively to communicate and collaborate collectively, including at a distance.

15. Content Creation and Computational Literacy: The ability to synthesize, create, and produce information, media, and technology in an innovative and creative manner.

16. Intellectual Property Rights Management: The ability to understand and manage intellectual property rights (e.g., copyrights, trademarks, and patents) when using and creating content and technology.
The 24 competencies explained:

17. Digital Changemaker Identity: The ability to identify and develop oneself as a competent Changemaker in the digital economy.

18. Civic Use of Technology: The ability to engage in civic participation for the well-being and growth of local, national and global communities using technology.

19. Commercial and Community Cyber-Risk Management: The ability to identify, mitigate and manage commercial or community cyber-risks online, such as organizational attempts to exploit individuals financially or through ideological persuasion (e.g., embedded marketing, online propaganda and gambling).

20. Organizational Cyber Security Management: The ability to recognize, plan and implement organizational cyber security defense strategies.

21. Relationship Management: The ability to skillfully manage one’s online relationships through cooperation, conflict management and persuasion.

22. Public and Mass Communication: The ability to communicate effectively with an online audience to exchange messages, ideas and opinions that reflect wider business or societal discourses.

23. Data and AI Literacy: The ability to generate, process, analyze and present meaningful information from data and develop, use and apply artificial intelligence and related algorithmic tools and strategies in order to guide informed, optimized and contextually relevant decision-making processes.

24. Participatory Rights Management: The ability to understand and exercise one’s powers and rights to online participation (e.g., their rights to personal data protection, freedom of expression, or to be forgotten).
References


Reviews

The title of this handbook perfectly describes what it is — An introduction to digital literacy and skills. The journey through the various forms of Industrial Revolutions helps one realize the importance of the 4IR and whips up interest in DQ while motivating one to seek Digital Skills for the new era of development. This skills for the new era of development. This is a timely intervention for our children. Mrs Dorothy Konadu. Former Policy Advisor; ActionAid-Ghana

With modern trends in technological advancement, young people are easily exposed to opportunities and vulnerabilities in cyberspace. This piece of work by Awo Aidam Amenyah takes digital literacy a notch higher by publishing. It is an ambitious. Comprehensive and engrossing work that should require reading by anybody who cares about issues confronting young people in the cyberspace in order to have them understand the space. Lt.Col Elikem K Fiamavle, Acting Director IT, Ghana Armed Forces
AN INTRODUCTION TO DIGITAL LITERACY AND SKILLS HANDBOOK
An introduction to Digital Literacy and skills handbook is a simple and easy to read handbook aimed at unpacking the concept of Digital Literacy to young people of all ages at all levels. A very dynamic resource handbook that will see frequent updates. This resource handbook is intended to promote and support the concept of the 8 life skills required for the 21st Century. An era where our daily life is becoming ever more digitized, and our children interact more and more with content, each other and social communities online. Each pages delivers an understanding that will result in the total development of the skills required to deal with challenges of thriving in a digital world. This handbook is an introduction and an outcome of Child Online Africa’s annual initiative for Internet Safety Month celebration dubbed Nice Net November. (#NiceNetNovember) The introduction to Digital Literacy is expected to serve as the guide to discussing digital skills and opportunities development in all spaces where the topic is being considered for children and young people. It is expected to fill the gap and help improve the general conversation of Digital Literacy and citizenship. It is expected to be updated regularly.

ABOUT THE AUTHOR
Awo Aidam Amenyah leads the team at Child Online Africa formerly J Initiative. Since 2013, Awo has been at the forefront of the call on government and other stakeholders to put in place measure to protect children within the cyberspace resulting in the revolution of Child Online Protection interventions in Ghana. Prior to her current role, Awo has facilitated platforms for engagement between state and non-state actors to influence policy and development decisions specifically related to education, violence against girls, Child Sexual exploitation, Child Online Protection, among others. She has been involved with the Recovery and Reintegration from Child Sexual Exploitation working group and National Association of Media Literacy Education. Her aspiration to ensure safety and wellbeing of children online compelled her rally for the celebration of Safer Internet Day (SID) in Ghana since 2015 evolving into #SIDAfrica in 2019 which saw 12 other African countries participating. In her quest to sustain the discussion on the continent saw her summiting on Mt.Kilimanjaro in August as a social cause to raise awareness on Child Online Safety and Wellbeing in Africa. In my opinion; children are the critical infrastructure of any nation and their interest must be safeguarded. It is our collective responsibility to show young people how to survive in this evolving world.