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Experience and Inspiration of Cultivating Digital Literacy among Youth in Australia

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Abstract

With the development of the digital economy and society, digital literacy has become an important indicator of the quality of digital education. This has not only driven Australia's basic education towards digital transformation of education, but also promoted the country's strategic commitment to improve digital literacy among youth and implement related education policies and practices. The cultivation of digital literacy among Australian youth is driven by the demand of the digital economy for a workforce equipped with new skills, educational declarations that reinforces the goals of digital education, and an education revolution that drives the digital teaching and learning agenda. In terms of practical initiatives, Australia develops digital literacy education in the form of stand-alone courses or interdisciplinarity, invests a large amount of money to build digital teaching environments in schools, provides professional digital teaching support for teachers through various channels and initiatives and also provides various extracurricular digital literacy education activities for primary and secondary school students. Based on this, it brings some experience and inspiration for the cultivation of digital literacy for primary and secondary school students all over the world.

Keywords

Australia, youth, digital literacy, developing digital literacy

1. Introduction

A new round of digital technological change, represented by artificial intelligence, big data and the Internet of Things, is flourishing, which will inevitably force a profound change in the the way of social production and life. Therefore, in the digital era, "what kind of people to train, how to train people" has caused great concern in the field of basic education, in response to the requirements of the times triggered by digital technology, international organizations and the major developed countries in the

world have introduced a series of policies, plans and action plans to promote innovation and transformation in education, which will open up the education of their own country. The digital transformation of education is the first step in the digital transformation of education. The digital transformation of education, as a comprehensive application of digital technology in the education system, is a process of continuous innovation and change, which pursues the transformation of the education system supported by digital technology and focuses on high-quality and balanced development, so as to realize the transformation and upgrading of the digitalization of education from low-level application to high-level creation. (Xu & Yang, 2024)

Australia is a typical representative of the digital education transformation in the world, which began with the first national policy document on educational informatization transformation, "Teaching, Learning and Computers: Report of the National Advisory Committee on Computers in Schools" in 1983, which outlined a strategy for a national computer education program, encouraged the introduction of computer equipment into schools, and emphasized that computers were a powerful teaching and learning tool and a way to help teachers teach more effectively and to better meet the needs of their students. (Chen & Li, 2022) It shows that Australia is keeping up with the digital trend and sees digital technology as an enabler of human development in schools. Therefore, clarifying the intrinsic motivation and practical measures of the development of digital literacy education in Australia can provide a reference for us to explore the reality of digital literacy education and promote the development of digital literacy education.

2. Underlying Motivations for Advancing Digital Literacy Among Australian Youth

"Changes in education policy of major countries worldwide have consistently pursued two major goals: first, educational democracy, so that every child has the right and opportunity to be educated; and second, educational quality, so that every child not only has access to education, but also receives an education of high quality." (Huang, 2011, p. 10). As global digitization accelerates, education, as the "workhorse" of the national talent pool, needs to be digitally transformed to embark on a high-quality development path.There are three main drivers of digital literacy education for Australian youth:the demand of the digital economy for a workforce equipped with new skills, educational declarations that reinforces the goals of digital education, and an education revolution that drives the digital teaching and learning agenda.

2.1 Developing a Workforce with New Skills for the Digital Economy

Productivity is a key factor in Australian success and prosperity, and raising level of productivity has been a major focus of the Australian government after the average annual growth rate of labor productivity from 2.1 percent in the 1990s drop to about 1.4 percent in 2000. (Ministers Treasury Portfolio, 2010) While Australia, like many other economies around the world, needs to develop the skills required in the digital technology era to maintain competitive economic productivity, Australian industry also faces significant competitive pressures to adopt new technologies in the workplace,

including automation and robotics, the Internet of Things, and a wide range of advanced information and communications technology (ICT) projects, applications and systems. Therefore, with the continuous emergence of technology intensive industries, the possession of digital skills is increasingly seen as an important factor for effective participation in society and the workforce, digital skills have rapidly evolved from the value-added competency to the more fundamental competency, and traditional labor-intensive industries that have been predominantly dependent on labor are facing a transformation that will inevitably lead to a search for newness and change in the field of education, which has the primary goal of preparing the workforce of the future. As a result, the Australian government, educational institutions and local communities are focusing on how best to educate and train the next generation of workers. (Gekara et al., 2019) The development of the digital economy, on the one hand, promotes the progress of basic education, strengthens communication and cooperation among basic education disciplines, and cultivates more high-quality talents needed by society. On the other hand, it requires the education sector to be able to comprehensively and consistently identify and monitor the demand and supply of digital skills, so as to accelerate the training of the Australian workforce in digital skills and realize the goal of the strong digital economy.

2.2 Education Declaration Strengthens the Goals of Digital Education

Since the 1980s, many countries began to develop computing policies and curricula, and to provide funding and support for schools, and in early 1999, the Australian State, Territory and Commonwealth Ministers of Education unanimously adopted the Adelaide Declaration, which sets out the conditions under which Australian vision for 21st century schooling can be realized. The Adelaide Declaration recognizes that Australian future in an increasingly complex world "will be shaped by advances in information and communications technology".The Adelaide Declaration (1999) acknowledged the pivotal role of ICT in shaping Australian future, aiming to cultivate students as confident, creative, and productive users of technology. (MCEETYA, 2000) The signing of the Melbourne Declaration (2008) set the stage for further reform of Australian education. It is a solemn commitment and a holistic plan for the future of schooling, with one of its two main goals to enable all Australian youth to become successful learners, confident and creative individuals, and active and informed citizens. Specifically, successful learners require basic literacy and numeracy skills, the innovative use of technology, the development of students' learning and thinking skills, creative problem solving, independent design, group work and sharing ideas, and information-based learning skills and decision-making career to promote the full development of students' potential. (MCEETYA, 2008) It clearly states that ICT skills are foundation of successful learning, and also emphasizes the importance of digital technology in modern education. The Alice Springs Mparntwe Education Declaration (2019) which builds on the Melbourne Declaration by further stating that young people need to be productive and informed users of technology, using it as a tool to gather and share information and being able to adapt to emerging technologies of the future. (Council of Australian Governments, 2022) The Adelaide Declaration, the Melbourne Declaration, and the Alice Springs Mparntwe Education Declaration all emphasized the

importance of ICT skills for students to some degree, reinforced the goals of digital education, and provided direction for digital education reform.

2.3 Education Revolution Drives Digital Teaching and Learning Agenda

The success of Australian digital transformation largely depends on developing appropriate digital skills and strategies to address global digital challenges. Mapping to the field of education, where Labor is committed to "improving the quantity of investment in Australian education and the quality of educational outcomes through an education revolution". As a result, during its tenure, the Labour Party implemented an important policy in the education reform agenda, the Digital Education Revolution (DER), which proposes to invest significant amounts of money to provide Australian students with unprecedented access to information and communication technologies. (Rosman et al., 2008) And the central argument of this policy is that computers are the foundation of a world-class education system. To achieve it, the Labor government provides schools with high-speed broadband, ensures that teachers are properly trained, and develops online course materials and portals. At the heart of Labor's commitment is a promise to put a computer on every student's desk, revolutionizing classroom education, preparing students for the 21st century and making Australia a world leader in research and learning. (ARN Staff, 2021) The Digital Education Revolution Program Review, released on the official website of the Australian Department of Education in 2013, commented that the scope and scale of investment under the Digital Education Revolution is unique, reflecting the Australian Government's ambition to trigger a real revolution in education. (Department of Education and Training, 2018) As a result, the agenda for digital teaching and learning in Australia has been re-energized.

3. Practical Initiatives to Cultivate Digital Literacy among Australian Youth

In the rapidly changing digital objective world, how primary and secondary school students can effectively exert their subjectivity in this objective world and become owners, users, and creators of the digital environment has become a core issue in digital literacy education in all states and territories of Australia. This goal involves not only the cultivation of students' digital skills, but also emphasizes their ability to learn independently and innovate in the digital age. Through systematic educational strategies, we should guide students to actively participate in the construction and development of digital culture, so as to realize their overall digital literacy. Therefore, Australia has adopted the following strategies to improve the digital literacy of youth:

3.1 Develop Stand-alone or Interdisciplinary Digital Literacy Courses

Australia has introduced digital literacy as a stand-alone or interdisciplinary course, reflecting a comprehensive educational strategy aimed at ensuring that students can develop their digital skills in various subject areas.

3.1.1 Provide Digital Technology Courses to Develop Digital Literacy Skills

Australia released the Australian Curriculum 9.0 version in 2022, which is aimed at F-10 grade students and divided into three dimensions - learning areas, general abilities, and cross course priorities. Digital

technology and design technology are part of the field of technical learning and relatively new disciplines, launched in 2015. The Digital Technology strand provides the foundational knowledge needed to apply digital technologies, while the Design and Technology strand enables students to become creative and responsive designers through the practical application of technology, including the use of digital tools. Therefore, digital literacy is integrated and contextualized in the classroom environment, which is an important ability for student development. There are clear and detailed regulations on digital literacy abilities during the implementation of the curriculum.Digital literacy competencies include practicing digital safety and health, researching, creating and sharing, managing and operating.

And under the various dimensions of digital literacy, there are different curriculum requirements which are divided into six levels (Level 1 for the foundation year, the preschool stage; Level 2 for Years 1-2; Level 3 for Years 3-4; Level 4 for Years 5-6; Level 5 for Years 7-8; and Level 6 for Years 9-10), with each level having a relationship of mutual articulation, gradual progression, and ascent, aiming to enable students in Year 10 to ultimately achieve a good level of digital literacy. For example, one of the digital health and safety practices has three dimensions: managing online safety, managing digital privacy and identity, and managing digital health. Specifically for managing online safety, each stage is detailed in Table 1 below:

Table 1. Managing Online Security Phased Content

Digital Literacy Sub-Area	age groups	details
managing online safety	Level 1 (Basic)	Use safe or direct supervision only digital tools and seek help from a trusted adult if you feel unsafe.
	Level 2 (grades 1-2)	Use age-appropriate or supervised digital tools and seek help from a trusted adult if you feel unsafe.
	Level 3 (grades 3-4)	Report negative or harmful online behavior by asking a trusted adult for help.
	Level 4 (grades 5-6)	·Report negative or harmful digital behaviors to a trusted adult and know how to do so in digital tools ·Recognize when to stay away from negative online social interactions
	Level 5 (grades 7-8)	·Identify and report online abuse and bullying to trusted adults, authorities, and digital tools ·Stop negative social interactions online
	Level 6 (grades 9-10)	·Participate in safe, legal and ethical online behaviors to diffuse negative online social interactions

·Recognize the benefits and risks of online anonymity

The achievement of digital literacy goals through digital technology courses is an important initiative in the Australian education system, aimed at cultivating the skills and knowledge required by students in the digital age. The program is designed not only to equip students with basic digital tools and technology skills, but also to guide them in using digital technologies to solve problems, create value, and improve efficiency in a variety of settings. Through systematic curriculum design and pedagogical practices, students will progressively master the skills of obtaining, evaluating, and utilizing information and data, improve communication and collaboration skills, learn digital content creation techniques, learn about privacy and cybersecurity; and enhance their problem-solving and creative thinking skills.

3.1.2 Integrate the Development of Digital Literacy for Primary and Secondary Students into Other Courses.

In addition to setting up stand-alone course modules, digital literacy has also been integrated into the learning of other courses, including English, humanities and social sciences, health and sports, language, mathematics, science, technology, and art courses. For example, while studying English, it is required to cultivate students' ability to use digital tools for communication, collaboration, reading, and information acquisition. They use a range of tools to create and edit digital and multimodal texts and presentations, select and evaluate sources, respect intellectual property, and consider their applicability to information, audiences, and network security when using digital tools. In addition, the key factor to consider in the process of learning mathematics is computational thinking, which involves experimental and logical analysis, empirical reasoning, and computer-based simulations. It lays a solid foundation for students to understand and use digital tools, including artificial intelligence systems. (Australian Curriculum, n.d.) It shows that digital literacy is not only an interdisciplinary competence, but also an educational innovation.

Second, digital literacy is also being integrated into STEM education in the form of an interdisciplinary curriculum. There are a number of policies and practices which integrate digital literacy into the development of STEM education in Australia. For example, at Carkee State School in Queensland, teachers designed and implemented a STEM (Science, Technology, Engineering and Mathematics) project to explore whether STEM education can increase student and teacher engagement in science and technology, which includes digital literacy. (Teacher Evidence Insight Action, n.d.) This project emphasizes combining connections between STEM disciplines to create a relevant context in which the essential skills and content of each discipline can be developed. In this project, students use 3D modeling and coding techniques to create new animals that can adapt to specific environments, demonstrating their ability to understand structural features through digital engineering and replicate animal behavioral characteristics through simple coding programs.This process allowed students to develop and use their ICT skills to write documentation about the animals they created, using annotated

diagrams, tables, and data to support explanations of the animals and their specific characteristics. While this project demonstrated that STEM education can enhance ICT skills, teachers also felt that integrating units across subjects through a STEM approach was valuable and needed to be explored further. And the goal of this project is to ensure that students build a strong foundation in STEM and inspire them to challenge themselves in more challenging STEM subjects. This demonstrates how Australia emphasizes the importance of digital literacy in STEM education through innovative pedagogical approaches and curriculum design, and also reflects the role and responsibility of educators in promoting digital literacy.

3.2 Invest Large Sums of Money in Building Digital Teaching and Learning Environments in Schools

Digital teaching and learning environments are the foundation for students' digital learning, and creating digital environments effectively helps to enhance students' learning experiences and improve their academic performance. Over the years, Australia has invested a lot in providing primary and secondary students with a variety of digital devices to develop their digital skills and increase their digital literacy. For example, Victoria provides software packages for schools. Since 2009, the government has invested $9.3 million over two years to purchase new educational software products, more than doubling the number of computers in schools and ensuring that students in Victorian have unrestricted access to a comprehensive set of digital tools. Moreover, the software provided help students understand mathematical and scientific concepts, analyze data, express ideas, and develop their critical and creative thinking skills.

Secondly, there are also specialized projects that provide funds for primary and secondary school students to purchase digital devices. The National Secondary School Computer Fund (NSSCF) provides AUD 1.4 billion in new information and communication technology equipment to all secondary schools for students in grades 9 to 12, and an additional AUD 807 million to cover the legal and additional costs of implementing the NSSCF; The High Speed Broadband into Campus Initiative provides AUD 100 million to support the deployment of high-speed broadband connections in Australian schools; And the Teacher and School Leadership Digital Strategy Initiative provides $40 million to support the professional development of information and communication technology. (Queensland Department of Education, Training and Employment, n.d.) A key focus of the NSW Rural Access Gap Program is to digitally upgrade more than 1,000 rural and remote schools. $365 million infrastructure upgrade program has also been implemented to provide rural and remote schools with fast, reliable and secure Internet connections. (NSW Department of Education, n.d.)

In addition, the Australian Government invests $50.6 million over four years from 2016 to 2020 through the National Innovation and Science Agenda to support all Australian teachers and students,which embraces the digital age and implements the Australian Curriculum-Digital Technologies. The Department of Education and Training announced the Digital Literacy School Grants program, which is part of Australian National Innovation and Science Process. And it aims to improve students' digital literacy. A total of 104 primary and secondary schools have been awarded

nearly $6 million in grants to facilitate the implementation of digital technology curriculum. Australian schools participating in the program can apply by proposing a project, and selected schools or organizations will receive between $10,000 and $50,000, and schools can collaborate to apply for a share of the award. Schools receiving funding expect to collaborate across schools on innovative hands-on experiences and ideas to improve students' digital literacy, collaborate with schools and businesses to gain expertise or equipment support, use existing facilities to create cross-curricular "makerspaces" and support IT professional development for principals and school leaders, as well as teacher development, provided that the funded projects help schools become leaders in the delivery of digital literacy. Funding will be provided for projects that help school leaders and teachers understand and implement digital technology curriculum, or that promote student learning within the curriculum. (Department of Education and Training, n.d.)

3.3 Multi-channel and Multi-initiatives to Provide Professional Digital Teaching Support for Teachers

As technology evolves, teachers need flexible ICT strategies to integrate and update their ability to use technology in the classroom, which in turn supports their professional development. A survey of Year 8 teachers found that three-quarters felt they lacked the ICT skills to teach their students, and half reported a need for more ICT learning resources, but with lower internet speeds and less professional support.(Sue,2015)And a national survey of attitudes to professional development found that only 57.4% of secondary school teachers in Australia prioritize professional development in their work (compared to nearly 70% of primary school teachers). (Doecke, 2008) Therefore, Australia must provide professional digital teaching support for teachers through professional teacher training, online learning resources, and other means.

First, in terms of professional development for teachers. Australia provides regular professional development and training opportunities for teachers to keep their knowledge of digital technologies and teaching methods up to date. It includes understanding the latest digital tools and resources and how to integrate them effectively into the curriculum. For example, teachers are taking part in Digital Technologies in focus (DTiF), a four-year program funded by the Australian government as part of the National Innovation and Science Agenda to improve teachers' digital skills and support them in teaching digital skills. More than 160 schools are now taking part in the program, which is funded by the Australian Government as part of the National Innovation and Science Agenda to improve teachers' digital skills and support them in teaching digital skills, which are essential for teaching online during the New Crown Epidemic. (ACARA, 2021) The Northern Territory Government has also developed Action Map Personalized eLearning, a structured eLearning program to help teachers plan and implement professional learning in digital education. The program requires teachers to participate in a 30-hour online course in a community of peers, and the course is explicitly linked to the National Professional Standards for Teachers. The WA government has promoted the PD21 website to support online professional learning for teachers. The portal offers online, self-paced, on-demand and teacher-led courses that enable teachers to adopt best practice pedagogy. The Australian Institute of

Teaching and School Leadership has launched a flagship program for professional learning, leading curriculum change. This is an online and convenient community of practice that connects Australian teachers to each other and to the latest curriculum change knowledge. (Institute for Teaching and School Leadership, 2012) NSW also uses coaches and mentors to help teachers use ICT in their teaching, including the establishment of student ICT teams to actively support teachers in the classroom. Most government departments have established coaching and accreditation programs to expand teachers' professional learning and support networks. Modeling the use of these devices by other staff members was also recognized as a crucial strategy for improving staff knowledge of teaching and learning. (Dziuban et al., 2018) In conclusion, adequate teacher digital competence training is essential to ensure that teachers adopt and use digital policies in the classroom.

In addition, a number of Australian states provide teachers with online resources such as online learning portals,which is including South Australia's Digital Teaching and Learning Toolkit for Teachers, a collection of practical videos designed to support Department of Education teachers in their online learning. (South Australian Department of Education, n.d.) The Australian Department of Education has a digital curriculum website dedicated to teachers, which is one of the few digital curriculum websites in the world. In the digital age, digital technology is constantly being integrated into education. Overall, the website has facilitated the implementation and teaching of the Australian curriculum in many ways. On the one hand, the website provides teachers with a wealth of materials. Teachers can not only download the curriculum content materials and after-school references for each learning area, but also obtain comparative information between Curriculum 8.4 and Curriculum 9.0, as well as download the curriculum content for the senior secondary level to understand the content of the senior secondary school, so as to lay a solid foundation for the successful completion of the junior-senior secondary school transition. At the same time, the website also provides teachers with a digitized national curriculum that can be viewed repeatedly, which can help teachers gain an in-depth understanding of the curriculum, thus enabling them to present the classroom content in a better way in classroom teaching. By providing teachers with high-quality teaching resources and materials, the website supports the development of students' digital literacy in different subjects, thereby promoting the enhancement of primary and secondary students' digital literacy in a holistic and multi-faceted manner.

3.4 Provide Diversified Extracurricular Digital Literacy Education Activities for Primary and Secondary School Students.

Australia is committed to providing primary and secondary school students with a rich and diverse range of extracurricular activities of digital literacy education to develop key skills for the younger generation in the 21st century. These activities cover not only basic computer skills, but also more complex content such as cybersecurity, digital ethics, and information screening and processing. Through hands-on, interactive learning and innovative projects, students are able to develop their digital skills in a creative and critical thinking environment.

First, Australia offers extracurricular digital literacy competitions for primary and secondary school students. Victoria and Queensland have taken action to provide digital learning experiences for children. For example, in 2016, the Premier announced a challenge to encourage creative coding, which was opened to all Victorian students in Years 6, 8 and 10. Students are invited to submit their ideas to solve a real problem and develop a prototype for an application or game. Individuals or teams can enter the Victoria Games and Apps Challenge. The challenge will take place in Semester 3, 2016 and the finals will be showcased during Melbourne Olympic Week in October 2016. The Australian Centre for Digital Technology also runs the Bebras Computational Thinking Challenge, an international initiative to promote computer science to school students of all ages. The Bebras Challenge is open twice a year to Australian students in Years 3-12 and develops computational thinking and problem solving skills in a fun and interactive environment. (Digital Technologies Hub, n.d.) The Westpac Youth Impact Challenge is also a major event aimed at improving the digital literacy and problem-solving skills of young Australians (aged 7 to 21). Participants are required to answer questions and develop an innovative business or social change idea to solve a problem, either individually or in teams. The challenge is an excellent example of digital literacy education going beyond the classroom, encouraging students to apply their skills to real-world situations to achieve positive change in their communities. (Australian School of Entrepreneurship,n.d.)

Second, Australia also values personalized learning experiences for students. The New South Wales government, for example, has integrated digital technologies into personalized learning to support students with high needs. Initiatives such as the Disability Strategy, the Bump It Up Program, and the High Potential and Gifted Program have been established to support the educational potential of all students.

To complement digital literacy education in schools, the Australian government and educational institutions provide a wealth of digital resources for families. These resources are designed to enable parents to strengthen their children's digital skills and understanding through guidance and support outside of school hours. This approach not only increases interaction between students and parents, but also strengthens the role of families in the educational process, ensuring that students are able to develop their digital skills holistically. For example, Education Services of Australia (ESA) provides a range of digital resources and professional learning materials aligned to the Australian Curriculum and the Framework for the Well being of Australian Students. These resources are quality assured and free to all Australian parents or guardians, and can help parents educate their children about digital citizenship by promoting good digital citizenship at home. Examples include online safety guides for families to monitor students' digital behavior.(Digital Technologies Hub,n.d.)Victoria also offers eSmart student workshops/parent-teacher conferences for primary and secondary school students, cyber-safety conferences and “Parenting in a Digital World” presentations for parents. (Abbotsford Primary School, n.d.)

4. Conclusion

The world is responding positively and optimistically to the opportunities brought about by digital transformation, innovating education and teaching methods in ways that are pleasing to the eye and steadily advancing the process of digital transformation in education. However, there are still some deficiencies in infrastructure construction and digital curriculum construction in some areas. Therefore, based on the idea that “a stone from another mountain can be used to attack a jade”, We should take into account local realities and selectively learn from Australia's experience in cultivating digital literacy among young people, so as to help construct a high-quality digital education system and cultivate creative digital talents, thus building a global digital community.

Firstly, infrastructure must be secured to bridge the digital education divide. During the epidemic, up to one third of students globally were unable to study online when classes were suspended, and countries lacking information and communications infrastructure were hardest hit by the disruption in education. (UNESCO, 2022) The availability of digital infrastructure will have a direct impact on the quality and efficiency of the use of digital educational spaces. Therefore, bridging the digital divide is an issue that needs to be addressed in order to empower basic education with digital technology. Australia provides broadband and other infrastructure upgrades for remote areas, so that every student can have the opportunity to interact with the digital two-way, with the ubiquitous digital connectivity generated, laying a solid foundation for the realization of digital inclusive learning. Therefore, we should increase financial investment in the provision of digital equipment for basic education, especially in remote areas such as rural areas, to ensure the supply of funds, which is the basis for the implementation of the ratio of basic digital equipment. In addition, we should set up a specialized digital education steering group to monitor the ownership and use of digital equipment in urban and rural areas, and vigorously promote the implementation of such equipment in remote areas such as rural areas, so as to ensure that the ownership rate of digital hardware and software equipment is basically the same in urban and rural areas, at least at the level of physical space, so as to achieve the goal of digital inclusive learning.

Secondly, improve the digital curriculum, solid digital education base. Curriculum reform is the core of education reform, so the construction of digital curriculum is the core of digital transformation of education, and it is the basic compliance of digital classroom teaching. Australia has specifically designed digital technology courses that involve digital literacy, in which, students can not only learn the basic knowledge of digital technology and apply and innovate it, but also have access to digital ethics knowledge such as digital security and health. Therefore, based on the information technology curriculum in primary and secondary schools, we should take digital knowledge, digital skills and digital emotional attitudes and values as the carrier of the curriculum objectives, and increase the content of the curriculum on coding and digital ethics, so as to achieve the goal of cultivating a complete digital human being, and then build a new quality digital education system for us.

Thirdly, it is necessary to enrich the educational methods and expand the ways of digital literacy education. Educational approach is an important medium for shifting from the goal of digital literacy

education to the practice of digital literacy education, which is related to the quality of education and teaching, and whether or not digital literacy education is effectively implemented. Australia adopts diversified educational approaches, from home-school-society cooperation to organizing unique digital challenges for students, from macro, meso to micro, covering a wide range, all-round, multi-level, broad field and wide aperture to improve students' digital literacy level. Therefore, we should also organize large-scale “Digital Literacy Ambassador” activities, set up a reward mechanism, and actively guide students to participate, and schools should teach digital skills in the form of specialized or interdisciplinary courses, supplemented by outreach activities outside the classroom, such as digital technology experience labs, digital coding activities, etc. Parents should do a good job of after-school supervision of primary and secondary school students, guiding their children to pay attention to online safety and preventing them from falling into digital fraud and other inappropriate behaviors. The community should likewise carry out regular digital literacy lectures or send out leaflets for publicity, thus mobilizing the strength of the whole society and adopting a diversified, multi-principal collaborative education mechanism to focus on overcoming the challenges of digital literacy education.

Fourthly, it is necessary to improve the teaching capacity of teachers and build a new ecosystem for digital education. The international organization OECD mentions in Future Education and Skills 2030 that teachers should move from “teaching to fit the future” to “teaching to shape the future.” (OECD, 2019). With the development of information technology, the digital divide has changed from the "presence or absence" of information technology and tools to a divide caused by differences in the use of technology and tools. Therefore, it is necessary to provide teachers with a broad space beyond traditional teaching cognition and experience. Teachers must separate from simply using digital technology mechanically and move towards flexible and creative applications that can promote "learning" through "teaching", and assist students in becoming controllers and leaders of digital time and space in the future. Australia not only provides regular professional development and training opportunities for teachers, such as the Digital Technologies in Focus (DTiF) project, but also strives to provide online learning portals and other online resources for teachers, including a digital course website specifically designed for teachers. In addition to superficial digital technology training, we should also set up virtual, immersive teacher training scenarios, restore or create teaching scenarios, enhance teachers' personal teaching experience and improve their sense of immersion and concentration in training. And it should also provide teachers with convenient, comprehensive and integrated e-learning resources and pathways to enhance their digital teaching capabilities in all aspects, and effectively help them solve complex educational problems.

Fifthly, it is necessary to formulate professional evaluation standards and dynamically monitor the level of digital literacy. At the critical stage of digital transformation, students' digital literacy is an important aspect of their comprehensive quality enhancement, and digital literacy evaluation standards are an important reform pointer for standardizing primary and secondary education. In Australia, regular assessment of the digital literacy of primary and secondary school students is seen as an important part

of the educational process.It not only evaluates and showcases the digital literacy level of its students on the international stage, such as the International Computer and Information Literacy Study (ICILS), but also establishes a national assessment program for ICT literacy (National Assessment Program - ICT) to continuously optimize and adjust domestic digital education policies and teaching methods through data feedback. Therefore, we should actively participate in the international digital literacy assessment, keep up with the globalized digital trend, and grasp the strengths and weaknesses of developing and developed countries. In addition, we should also independently construct a local and uniform digital literacy assessment standard, so that the government and educators can understand the current status of digital literacy in a timely manner and know the gap in the development of digital literacy between regions, and then we are able to strengthen and improve the digital literacy education policy and practice initiatives in a targeted manner.

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