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Digital Citizenship, Values and Cultural Dynamism

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Abstract

This paper examines the global shift towards digital citizenship triggered by COVID-19 and its role in mediating cultural tensions in a rapidly digitizing world. Utilizing mixed methods, the study draws from two projects: the first assesses the engagement of 315 Australian adolescents with values in their science education, and the second investigates digital citizenship practices among 303 university faculty members in Saudi Arabia. The findings highlight significant sociocultural differences in digital engagement and underscore the varying impacts of digital globalization across different educational and national contexts. The paper argues for a proactive educational strategy that encourages critical engagement with digital tools to navigate and reconcile these cultural dynamics effectively. By exploring the interactions between digital technology providers, users, and regulatory bodies, the study provides insights into the complexities of digital responsibility and the potential of education to foster a balanced digital citizenship. This approach suggests moving beyond mere technological integration to embrace a pedagogy that is responsive to the ethical challenges posed by global digital interactions.

Keywords: *ICT; WorldWideWeb; accountability.*

INTRODUCTION

The 21ST century has witnessed an unprecedented proliferation of everyday digital technology. Contemporary Information and Communication Technology (ICT) has revolutionized teaching and learning, offering new ways of engaging with content and expanding the reach of education (Saleem, 2018). Abuses of vulnerable people within societies that were becoming increasingly dependent on ICT led to extension of the traditional notion of national citizenship into the concept of digital citizenship. Digital citizenship implies responsible and ethical use of emerging technologies to engage in online communities and participate in an international digital society (Ribble, 2015), based on responsible and moral standards of technology use for effective information sharing in society, building safe relationships in digital spaces and communities, and managing information and knowledge (Gazi, 2016).

Values such as these drive the decisions we make, and we leave them implicit at our peril. The interaction of unexamined values has a habit of producing behavior that we later come to regret. Linking a sense of 'belonging' to co-operation and conformity and placing high value on respect may produce calm classrooms but not very many Nobel prize-winning scientists (Bracey, 2001). Company values that focus exclusively on the short-term 'bottom line' can lead to actions that cost the corporation dearly in the long run (Vincent, 2000). This has led to increased recognition of the importance of moral reasoning for business learners (Mumford et al., 2003). Programs to train bench scientists need research ethics components

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(Kovac, 1996) if subsequent research misbehavior is to be avoided. Values are often communal (Abbas, 2003; Engelhardt & Rasmussen, 2002), and they can have communal consequences.

Communities share customs, institutions and achievements that are passed down from generation to generation. These cultures consist of shared values, beliefs and norms that determine appropriate and inappropriate behaviors in different social situations (Caplan, 2019; Hofstede, 1980; Hofstede & Usunier, 2003; Langat, 2015;). This creates relatively predictable behavioral responses to commonly experienced social situations, resulting in observable cultural differences (Hofstede, 1991). Taxonomies, such as Hofstede's, provide a useful first approximation for people from a different community, but they can obscure the dynamic nature of all human cultures. Communities adapt to internal and external tensions arising from pressures caused by social and environmental changes. Community values shift over time and vary according to their proximity to communities sharing different cultures.

The World Wide Web put previously widely separated cultures into digital proximity and COVID-19 rapidly accelerated globalization by shifting much education on-line. The disruptive impact of Information and Communication Technology (ICT) on economic and educational patterns was not always welcome in the industrialized nations where it emerged, and its impact on other cultures is causing considerable concern.

LITERATURE REVIEW

Information and Communication Technologies (ICT) have wide jurisdictional support, at both national and state levels. To provide a couple of Australian examples, digital tools such as animations and simulation software are officially advocated in support of:

> "… student understanding of abstract phenomena, as they give opportunities to view phenomena and test predictions that cannot be investigated through practical investigations in the classroom" (ACARA, 2022, p. 17).

This national mandate is echoed by local state authorities, for example in New South Wales, where "Digital Technologies" are one of content areas specified for the compulsory junior secondary science years (see Figure 1).

The focus on technological affordances is repeated in many other jurisdictions, but the wider impact of these technologies is less often considered. Such widening is clearest in notions of **digital literacy**, which can be usefully expanded to encompass **digital citizenship** that rest on considerations of relative **value**.

Digital Technologies, digital literacy and digital citizenship

Concern for the value dimension of decision making is timeless but recent history suggests that behaviour may look mild in narrow social contexts but subsequently have much wider negative consequences. For example, corporate disregard for public and environmental health led Volkswagen to evade US pollution laws on their diesel vehicles (Hotten, 2015). Government and quasi-governmental lack of concern for people prompted the Australian banking and QANTAS enquiries (Canales, 2023). More specifically, Australian government attempts to digitally estimate welfare recipient incomes led to harassment and fines for clients whose spending patterns prompted unsustainable accusations of fraud (Holmes, 2023). Even closer to the topic of this paper, on-going denial of corporate responsibility has not prevented severe international penalties for large-scale Facebook anti-social behavior (Cadwalladr & Graham-Harrison, 2018, March 18; D'Onfro, 2018, July 18; Nunez, 2019); Google faced European sanctions

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for misuse of data and misleading advertising (Fox, 2019; Warren, 2018, July 18) and the Australian government increased the legal liability of both Facebook and Google within its jurisdiction (Khalil, 2021, February 25).

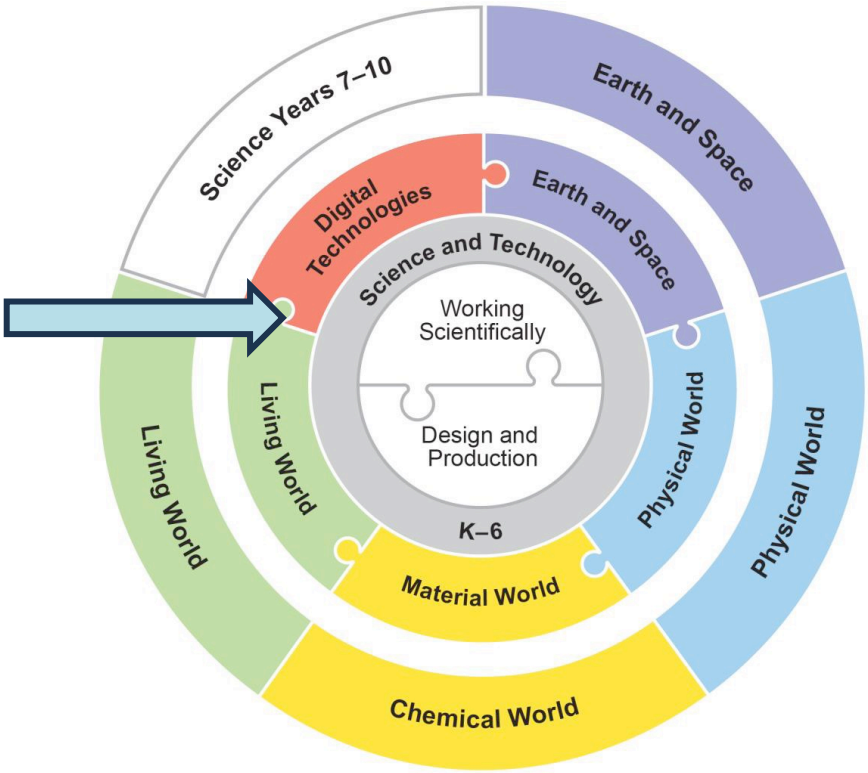

Figure 1: Digital technology is assuming discipinary status (NESA, 2019, p. 22)

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Application of broader notions of literacy to Information and Communication Technology widens teacher and student consideration beyond a narrow technicist perspective, through consideration of student access to, engagement with and use of its affordances (O'Toole et al., 2020). Students develop such digital literacy as they operate and manage digital systems and practise digital safety and wellbeing while investigating, creating, and communicating via the Internet. Students use digital literacy to access information; collect, analyse and represent data and information; model and interpret concepts and relationships; and communicate ideas, processes and information. The World Wide Web through which they do all this is largely unfiltered, so students decide for themselves which message(s) they communicate and individually identify and apply resources that help them to do so in ways that they value.

Digital technology consequently broadens the range of possibilities for both teachers and students and increases the need for critical choice between sources. Much of the previous work on web-based learning took on increased urgency under the impact of the COVID-19 pandemic. Schools in many jurisdictions were closed and instruction soon shifted from face-to-face to on-line (Pokhrel & Chhetri, 2021). Effective on-line learning can supplement face-to-face engagement or replace it with virtual interaction. Ineffective on-line learning is a hi-tech version of postal correspondence school, but the pandemic-driven change was so rapid that much of what had been learnt about remote learning in previous decades was forgotten (Hammerstein et al., 2021). Wassermann (2001) found that multimedia was more effective when pupils had small group access to it, at points in the instructional sequence that the teacher thought optimum; that the cultural context of school and society had a great impact and that connections with the local curricular framework were crucial. Its effectiveness was diminished by unclear pathways through the material, distractions from other pupils and difficulties in seeing and hearing the material when the resource was used in a whole class situation. Other contemporary work was more critical:

> "… Research commissioned by the NSW Department of Education and Training and undertaken by the Change and Education Research Group (CERG) at the University of Technology, Sydney in 2000 raised a number of important findings.
>
> *The most important finding in relation to pedagogy was Key Finding 6:*
>
> "In a large proportion of the classrooms we visited, computer-based learning was being integrated in ways that afforded less opportunity for higher order thinking, deep knowledge and substantive conversation than classrooms where it was not being integrated'." (Scott 2003 p. 11)

Consideration of higher order thinking, deep knowledge and substantive communication are common to teacher and pupil use of any teaching resource and their reported absence suggests that the use of ICT does not remove the need to attend to the characteristics of Quality Teaching (Ladwig & Gore, 2003). We may not yet have achieved Jim Halliday's *Oasis* (Cline, 2011) but Mark Zuckerberg appropriated the term 'Metaverse' as Meta© in 2021, drawing on an earlier Science Fiction novel (Stephenson, 1992). Smartphones have put this emerging parallel world into millions of adolescent palms, with both expansive and subversive consequences (Khaeruddin, 2022). Development of student digital literacy requires critical teacher conversations that go beyond mere discussions of which digital tools or platforms are effective in meeting narrow definitions of reading and writing (Buchholz et al., 2020).

Notions of digital citizenship played a crucial role in helping individuals navigate the COVID-19 digital landscape safely and responsibly, fostering effective communication and collaboration in virtual environments, emphasizing empathy, active listening, and cultural understanding (Richardson & Milovidov, 2019). Such skills have always been instrumental in maintaining social connections without conflict and

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they are crucial for supporting remote teamwork, while mitigating the potential for online harassment (Poudevigne et al., 2022). Pandemic disruptions encouraged social media platforms, online communities, and educational institutions to implement digital citizenship guidelines that explicitly address online bullying, harassment, and hate speech (Al-Khatib, 2023; Choi & Park, 2021). Adherence to these guidelines helps individuals contribute to creating a supportive and inclusive virtual community, free from hostility and discrimination. This moves us from notions of citizenship to the values on which they are based.

Values

Some national jurisdictions have value statements that stretch beyond schooling, such as the U.S. Bill of Rights (Cogan, 2015) and the Indonesian *Pancasila* (Maulida et al., 2023; Natalia et al., 2021). As Natalia recognizes, education is a value-soaked undertaking and that is true even in the absence of such explicit national statements (see, for example, Boston, 2001). State schools in New South Wales have long operated under explicit statements of values.

> "Public schools are not value-free. They aim to inculcate and develop in the learners entrusted to their care those educational, personal, social and civic values which are shared by the great majority of Australians. They do this through their goals, written policies, the courses they offer, the way they are organized and led, the actions they condone and reward, and the personal and social relationships which are established within them." *(Cavalier & Winder, 1988, p. 2)*

'The Values We Teach', from which this quote was taken, set out the distinctive values that were seen at that time to characterize NSW Public Schools as including, at least, respect for individuals and for differences between them; respect for democracy and democratic institutions and a belief in equality and equality of opportunity. The persistence of such concerns is suggested by local expansions of the document, and it was eventually superseded by competing State (Refshauge, 2004) and National (MCEETYA, 2005) statements on values education in Australian schools.

Such values may seem self-evident, but they are not. Schooling systems can be legitimately established on quite different values, such as the preservation of communal or religious identity, the expression of specific educational philosophies or the pursuit of academic excellence. Values such as these are specific to societies. Values appear obvious (even banal) only to those people immersed in the culture that produced them. The largely unfettered globalizing effect of digitalization has moved such issues far beyond local educational jurisdictions (Vidi-Paramestri & Rumambo-Pandin, 2021) and reflections across such social and cultural boundaries may clarify issues and lead to more effective educational provision.

New technologies amid persistent misbehavior

The pervasiveness of technology has created new challenges and responsibilities, as people find new ways of achieving enduring, but not always praiseworthy, intentions. Paper encyclopedias, books and journals have been displaced by much more convenient digital resources, but there are also sites that supply completed essays and assignments. Student plagiarism is a venerable phenomenon that long predates the development of the internet (Park, 2003). Cribs and summary books have been available for a long time and some pupils have submitted material copied straight from them for many decades.

However, the number of such sources was limited, and so teachers could keep track of what was available to pupils and recognize plagiarism relatively easily. The internet contains a much larger number of resources and the 'cut and paste' facilities of modern word processors make the material from them much easier for pupils to use and much harder for teachers to detect. Atkins and Nelson (2001) listed over 200 such sites that offered plagiarism-ready material in the United States and that was over 20 years ago. The recent emergence of Artificial Intelligence driven authoring programs (AI) has complicated the situation further, prompting some commentators to refer to 'post-plagiarism' (Eaton, 2023). Programs such as

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ChatGPT join earlier tools that provided writing support at a lower level, such as spelling and style checkers bundled with word processors like *MSword*; or *Grammarly*, which will check and correct text; or *QuillBot*, which will summarize and paraphrase text (Dulah, 2023). AI-enhanced writing aids go one step further and produce original text based on deep access to Web-based material.

ChatGPT is not the only thing on pupil smartphones. In addition to traditional telephone functions they also support emails, short message services (*SMS*), *Viber*, *Telegram*, *YouTube*, *Flickr*, *Snapchat*, *TikTok*, *Instagram*, chat rooms, discussion forums including *Reddit* and *Whirlpool*, webinars and social media or social networking sites, including *Facebook*, *Facebook Messenger*, *Google+*, *WeChat*, *Weibo*, *WhatsApp*, *MySpace*, blogs and microblogs (*Twitter*, now '*X*'), and search engines such as *Google* and *Bing*. Pupils can communicate both within and beyond the school on an easily concealed device that transforms the 'chat books' that passed from hand-to-hand in past classrooms into a world that was once science fiction. The nature of social networking often means that individuals invite other people to join accessible sites where *avatars* (another term lifted from Stephenson, 1992) will often conceal the real identity of participants. This is particularly concerning as it provides an easy avenue for grooming of younger people by older predators who subsequently attempt to connect physically with their vulnerable contacts. Such exploitation can focus on sexual gratification, ideological recruitment, or both (Lorenzo-Dus, 2022). Less predatory, but no less damaging, on-line influencers can lead to eating disorders (Frieiro Padin et al., 2021).

However, school concerns about social media are not restricted to external interactions. Bullying has been a feature of life for many children since Tom Brown took boxing lessons from Black Bart to take down Flashman (Hughes, 1870). Non-face-to-face, one-way social networking interactions give the sender the illusion of control and the delay before any response distances them from the consequences of their message. Cyber bullying can have profound impact on its victims (Jadambaa et al., 2019) and Tom's direct response is rarely available. There are potentially multiplr roles involved in bullying (Levy et al., 2012), but, regardless of role, research indicates that cyberbullying can have enduring negative consequences for each participant and may lead to serious mental health conditions, suicidal ideation, or actual suicide (Bannink et al., 2014; John et al., 2018; Kwan et al., 2020). There is no doubt about parental responsibility in these matters (Dorasamy et al., 2021), but schools and teachers share responsibility for the pupils in their care. Such negative consequences have led to the decision to ban mobile phones from some educational jurisdictions (Alakurt & YilmazI, 2021; Minns, 2023; Selwyn & Aagaard, 2021).

RECOGNISING VALUES

Schwartz (2005) defined ten basic human values that seem common across cultures and they clump as indicated in Figure 2. His list appears in a convenient order but he makes makes no claim for universal heirarchy. His values represent enduring personal commitments that interact to form the basis of attitudes to particular things, and beliefs about the truth of particular statements. Shared values form the norms of particular societies and the basis for specific patterns of thought, feeing and action that characterise individuals.

Table 1 represents one mapping of descriptions of Schwartz' values against national and state documents. The numbers in parentheses indicate local priorities and the broad commonalities across cultures and jurisdictions are important for the present discussion. The more adult values of stimulation, hedonism and power are absent from collections of values in education and achievement may not be explicit in a national list.

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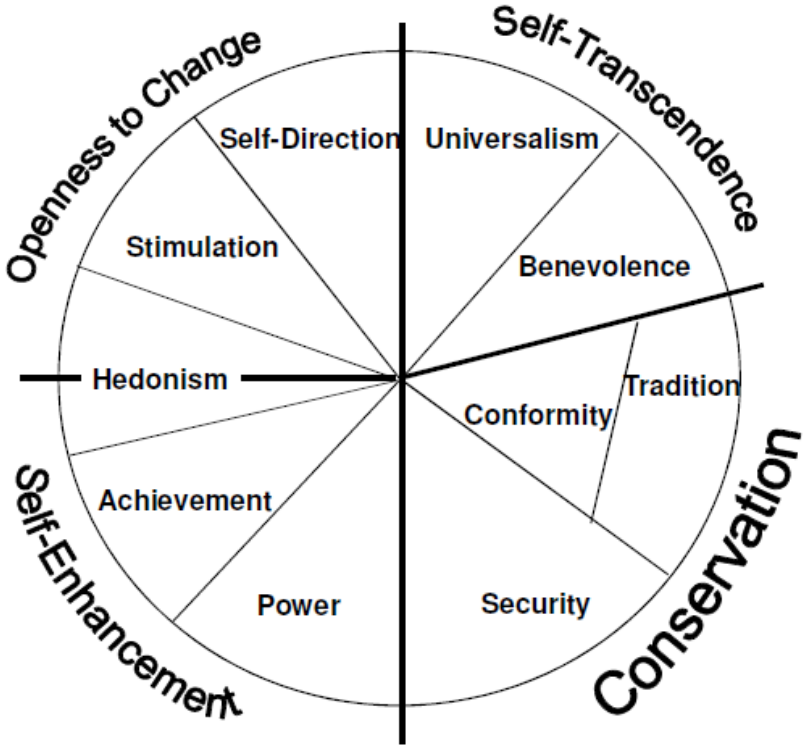

Figure 2: Constellations of Value (Schwartz 2012, p. 9)

Schwartz developed a survey to place individuals and groups against his list and his 57 items were reduced to 10 questions in the Short Schwartz Value Survey (SSVS: Lindeman & Verkasalo, 2005). They went on to produce algorithms incorporating the 10 SSVS values to obtain two opposed Value Dimensions: Conservation (the motivation to preserve the status quo and the certainty that conformity to norms provides) and Self-Transcendence (concern for the welfare of other people). This model was further developed by Kruskal et al. (1973) and this quantification provides one resource for discussions of interpretation, implications, likely outcomes, and possible responses.

The broad commonality of value agendas suggested by Table 1, and the analysis tools provided by Schwartz and others suggest that a relatively broad investigation of school pupil values might be possible.

Student environmental values

Recent work on secondary school pupil orientation towards the future of the environment (*optimism* or *pessimism*) provides data that can inform our consideration of values and digital citizenship. Three hundred and fourteen Australian pupils in their tenth year of schooling completed a survey that incorporated the Short Schwartz Value Survey (SSVS), together with other questions dealing directly with their knowledge and attitude concerning environmental issues. Lee's survey was completed by participants ranging in age from 14 to 17 years, predominantly female and located in regional Queensland.

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Table 1: Value Alignment[1]

Basic (Schwartz, 2005)	Pancasila (Maulida et al., 2023)	Australia (MCEETYA, 2005)	New South Wales (Refshauge, 2004)
Self-direction INDEPENDENT *thought & action*	Democracy (4)	Freedom (4)	Democracy (4)
Stimulation *Excitement, novelty, & challenge*			
Hedonism *Pleasure & gratification*			
Achievement *Personal success*		Doing your best (2)	Excellence (2)
Power *Social status & prestige,*			
Security *Harmony and stability of society & of relationships*	Unity (3)	Honesty and trustworthiness (5) Responsibility (8)	Responsibility (7)
Conformity *Restraint of impulses likely to violate social expectations*	Democracy (4) Unity (3)	Integrity (6)	Integrity (5) Co-operation (8)
Tradition *Acceptance of traditional cultural or religion customs*	Monotheism (1)	Respect (7)	Respect (6)
Benevolence *Enhancing the welfare of those with whom one is contact*	Social justice (5)	Care and Compassion (1)	Care (1) Participation (9)
Universalism *Tolerance and protection for the welfare of people & nature*	Justice and civilization (2)	Fair go (3) Understanding, tolerance & inclusion (9)	Fairness (3)

Note: [1] Schwartz values appear as published, priority in remaining columns is provided by number in parentheses.

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The SSVS items were analyzed according to the Kruskal model to produce the graphical representation appearing as Figure 3.

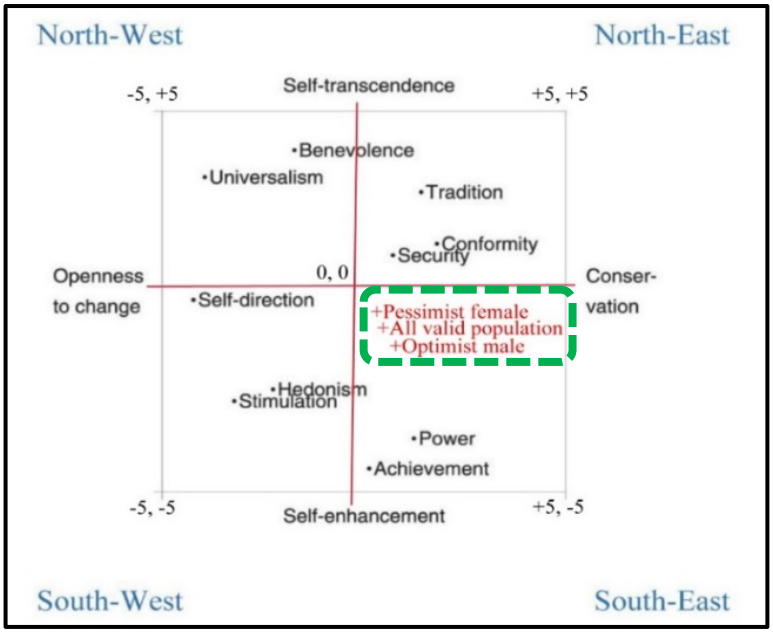

Figure 3: Pattern of participating pupil values (after Lee, 2024, p, 203)

These pupils are approaching the end of compulsory schooling, and Lee's findings indicate characteristic values based on being minimally to moderately conservative and being moderately self-enhanced. Optimistic males were more conservative and self-enhanced, while pessimistic females were less conservative and least self-enhanced. These student responses rest in the south-east quadrant of Figure 3, which suggests that they lean towards personal achievement in a stable environment, which would enhance their power over their own futures.

However, this tendency is not particularly well developed, as their responses still place them towards the center of Figure 3. The physical location and cultural classification of participating adolescents suggested greater focus on personal gratification, as indicated by placement in the south-west quadrant. Researchers expected much more cynical, self-centered, and hedonistic responses to the questions derived from Short Schwartz Value Survey, which would have suggested that these adolescents might resist teacher encouragement of values such as those incorporated in the notion of digital citizenship. Subsequent qualitative data suggests that these young people were more optimistic about their own potential happiness than they were about prospects for the planet, and these findings from the wider survey suggest that their attitudes are not yet so solid as to impede development of morally defensible values. The pattern of values being exhibited by those Australian students has implications for the value component of digital citizenship The International Society for Technology in Education (ISTE) has established standards whereby digital citizens can be safe, respectful of others, and make positive contributions (ISTE, 2017).

INTERACTIONS BETWEEN TEACHER VALUES AND DIGITAL CITIZENSHIP

We now move from student values to teacher attitudes towards responsible and moral practices around technology, including the effective use of apps, open educational tools, cooperative education, and networking sites (Hivon & Titah, 2017). Ribble (2015) identified nine key elements of digital

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citizenship: etiquette, access, law, communication, literacy, trade, rights and responsibility, security, and health.

Knowledge and application of digital citizenship is central to the achievement of the goals of Saudi Arabia's *Vision 2030* (Nurunnabi, 2017) because it would allow individuals to participate effectively in a modern, technologically advanced economy. Safe participation requires both understanding of the ethical and legal obligations of online behavior and the ability to use technology effectively. Saudi Arabia hopes to build a more competitive and innovative economy by prioritizing digital citizenship skills, and consequently support the country's continued growth and development. The disruptive nature of such technology is well documented (Dewi et al., 2019), and the educational status quo has always resisted such disruption (Peddiwell, 1939). Accordingly, to examine implementation of digital citizenship skills in a context where staff could be expected to be less resistant to change, a second mixed method project investigated the attitudes of university staff in an emerging Saudi university, including document analysis and a survey of 303 faculty members.

While each of the nine elements of digital citizenship are conceptually distinct, they are nonetheless interrelated in the physical and digital world (Kim & Choi, 2018), and so the Altamimi survey grouped Ribble's elements into three categories: communication (including access and etiquette), digital learning (literacy, law, and rights & duties), and digital safety (security, trade and health), yielding three reliable conceptual scales (see Table 2). There were slightly more females than males among the 303 survey participants, with twice as many respondents reporting more than 10 years of teaching experience as reported less than 5 years teaching. There were twice as many respondents from Education and Arts as from Computer Science and Engineering. Semi-structured interviews with 11 faculty members were conducted to identify the most prominent obstacles and opportunities for building digital citizenship skills.

Table 2 suggests that participants generally agreed that digital communication (including access and etiquette) is an important aspect of digital citizenship, although they were less positive about the importance of digital security than they were about the role of digital learning.

Table 2: Perceptions of Digital Citizenship and reports of Teaching Practice
(modified from Altamimi, 2023, p. 116)

Conceptual Scale	Participant perception		Participants teaching		*Significance*		
	M\6	S.D	M\6	S.D	*F*	*df*	*Sig.*
Digital Communications	5.01 α = 0.89[1]	0.60	4.16 α = 0.92	0.88	*1.25*	*31*	*0.18*
Digital Learning	5.03 α = 0.94	0.71	4.14 α = 0.96	0.95	*2.22*	*40*	*0.00**
Digital Security	4.94 α = 0.94	0.76	3.73 α = 0.96	1.15	*2.02*	*46*	*0.00**
Complete Section	4.99 α = 0.97	0.64	4.00 α = 0.97	0.92	*1.25*	*91*	*0.10*

Notes:
[1] α = Cronbach reliability
* P < 0.05

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They apparently perceived digital security and digital learning as important but, unlike digital communications, fewer reported teaching them as frequently as that perception would suggest. Gender (favoring females) and specialization (favoring Computer Science and Engineering) had significant impact n reported teaching practice in relation to digital learning and security. After digital learning, digital communication was the second most widely understood element of digital citizenship. Analysis of the data from the semi-structured interviews showed that participants assigned greater importance to digital skills related to the curriculum, such as communication and learning, than they did to security, health, or digital commerce.

A large majority of participants considered digital safety to be part of digital citizenship, regardless of their demographic characteristics. However, some participants did not know that awareness of the effects of Internet use on physical, social, and emotional health was part of digital citizenship, which is problematic given that on-line abuse that was one of the motivations for the development of the notion. Analysis of follow-up interviews suggested that this was related to individual teacher expertise: teachers from Engineering were more likely to focus on digital learning ('literacy' as technology use) than on communication ('etiquette' as safe behavior). This is consistent with the results of previous research suggesting that, while students and teachers were aware of digital citizenship, they had little knowledge of digital safety, digital security, or digital ethics (Suson, 2019).

Further analysis indicated that culture and religion played a role in increasing teacher knowledge and awareness of the concept and elements of digital citizenship. Some participants interpreted their responsibilities as citizens from the perspective of the Qur'an and the words of the Prophet, which guided their actions in relation to rights and duties, honesty in buying and selling, fulfilling promises, honest dealing, and respecting the privacy of others based on the principle of good manners (Dawud, 2008). Such teachers reported that they put these values into practice in both their traditional and technologically based teaching, regardless of whether digital citizenship skills were an explicit part of the topic. This indicates that these faculty members placed equal importance on their actions and behavior in the digital world and in the world outside the Internet (Algarni, 2021).

Findings suggest that direct educational purposes dominated the use of digital technology, which was used when it was closely related to the requirements of the academic course. Widening of direct curriculum concerns to include safe use of the technology, which is the fundamental form of Digital Citizenship, seemed most likely when participants recognized the role of local values in teaching and learning.

CONCLUSION: Culture, Values, Digital Literacy and Digital Citizenship

Culture has long been known to influence the use of technology by individuals, organizations and societies (Boudreau et al., 1998) and more recent studies have identified a country's national culture as the most important factor in controlling the use of information technology (Bauer et al., 2007; Moghadam & Elveren, 2008; Peña-García et al., 2020). Such cultural impact has often appeared negative, but our Australian environmental education example suggests that adolescent tendencies towards attitudes that may not constitute good Digital Citizenship may not be so firm that they are beyond educational modification. Preference for specific quadrants in Figure 3 will almost certainly be strongly influenced by cultural context and globalization has applied complex pressures to what have previously been more independent cultures. However, our Saudi study suggests that teachers with the strongest roots in their own culture may well be the most willing to directly engage with such pressures, and consequently help their students to make wise decisions in a dynamic situation.

The data on Table 1 suggests resonance between explicit value statements emerging from different cultures, despite differences in relative priority. Digitalization has increased the homogenizing pressure of globalization on different cultures and encouraged a dynamism that is not always welcome. However, recognition of similarity within the diversity of priorities set in different cultural contexts, by teachers with deep roots into their own culture, is probably the best way to manage the flux in ways that will best serve the long-term best interests of diverse students.

A WAY FORWARD?

The educational, social and personal damage described earlier in this paper make the decision to limit access (Griffiths, 2021), or to ban the devices themselves (Minns, 2023), easy to understand. However, the technology is not likely to disappear; limiting access is harder than it may seem; and teachers are in a surprisingly powerful position to help young people keep their feet in dynamic cultural contexts. It is important to help our students consider both the content and personal impact of comments they make on social networking sites, inside or outside school. There are several questions that social network users can ask themselves to guide their online posts and evaluate their continued access to on-line sites. The components of the following mnemonic reflect appropriate characteristics of positive social networking comments. It is important to encourage pupils to consider these questions before posting anything on a social networking site.

NECESSARY: is this comment necessary, and if so, what makes it necessary?	
ESTIMABLE: is this comment admirable and worthy of esteem?	***Why?***
TRUE: is this comment true with enough evidence to support it?	***Are you sure?***
INSPIRING: is this comment inspiring, encouraging and positive?	***How?***
QUOTABLE: is this something other people will be proud to repeat?	***Why?***
USEFUL: what makes this comment useful for the diverse audience?	***How?***
EFFICACY: what are the consequences of this comment for you and others?	
TRUSTWORTHY: does this comment indicate you are worthy of trust?	***How?***
TIMELY: is this comment appropriate considering the other comments?	***Why?***
EMPATHIC: does this comment demonstrate empathy for others?	***How?***

Communications that fail any of these criteria should probably be re-considered before pushing 'Enter' (O'Toole, 2020, p. 338) and students should be encouraged to avoid sites that violate them. Repeated direct classroom use of aids such as this may encourage the development of more responsible attitudes.

We have cause for concern, but student values are also dynamic, and teachers are in a strong position to encourage digital citizenship, if we look beyond the technology itself and its immediate use in our classrooms. Teachers with deep roots in their own cultural context seem to be most willing to do this and are probably most able to link security, communication and learning to effective and defensible on-line value systems.

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