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## DIGITAL LITERACY IN THE CORE: THE EMERGING HIGHER EDUCATION LANDSCAPE

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### ABSTRACT

Aim/Purpose	Digital literacy is critical to participation in a contemporary knowledge-based society and is requisite to both academic success and career development. Institutions of higher education have been slow to define, assess, and amplify digital literacy in parallel with advances in the enhancement of reading, writing, and arithmetic literacy. Perhaps as a consequence of the pandemic, awareness appears to be growing of the need to infuse digital literacy at both institutional and individual levels. The purpose of this paper is to investigate the promotion and amplification of digital literacy within top universities around the globe.
Background	For years, the role of higher education in the amplification of digital literacy among college students has been debated, but efforts have been limited primarily to ad hoc, unsystematic attempts to rectify disparities between students' exposure and understanding. The impacts of COVID-19 exposed the reality that many institutions, professors, and college students were under-prepared for the surge in reliance on digital technologies.
Methodology	This paper explores the prevalence of digital literacy in the top public and private universities around the globe by conducting a qualitative examination on compulsory requirements, digital literacy offerings, university identified digital literacy initiatives, and university strategic plans.
Contribution	This paper contributes to the body of knowledge by providing evidence for the need to expand the constructs of what it means to be digitally literate to address

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	the ever-expanding range of emerging technologies and the impact of those technologies on society.
Findings	The review of digital literacy amplification at top universities showed that none of the universities' admissions requirements required students to demonstrate digital competence and compulsory digital literacy was uncommon. However, a majority of universities undertook some form of initiative to promote digital literacy. These initiatives included a focus on developing digitally literate society and workforce or developing innovative approaches to digital literacy education.
Recommendations for Practitioners	The pandemic has generated a greater sense of urgency for institutions of higher education to ensure access to and understanding of digital technologies by students, faculty, and staff. Educational institutions will have to adapt their methodologies to promote explicit and intentionally reasoned digital literacy strategies that combine the competencies possessed by users of technology with the generation of new competencies required to successfully participate in the digital transformation of education, business, and society.
Recommendations for Researchers	This paper examined the top 50 universities around the globe. Additional research is needed to examine national, regional and local efforts in the quest to address the need for a digitally literate citizenry.
Impact on Society	COVID-19 has thrust us into a new normal wherein digital competence is foundational to success in an ever digitally reliant world. Institutions of higher education are best positioned to carry out the initiatives, programs and research needed to enhance the digital literacy of all citizens, not just students and employees.
Future Research	Societal impacts of the COVID-19 pandemic continue to emerge and will resonate for decades to come. Continued investigation, exploration and dissemination of information related to effort to enhance and amplify digital literacy is necessary to ensure momentum to reimagine digital literacy education is maintained.
Keywords	digital literacy, digital competency, critical digital literacy, digitally centered

## INTRODUCTION

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Impacts of the COVID-19 pandemic are rippling around the globe, transforming lives, jobs, economies, and educational systems. The pandemic magnified extant digital divides, amplifying the imperative of a digitally literate citizenry with ready access to information and communications technologies and robust connectivity. COVID-19 forced people of all ages to use digital technologies to stay informed and connected (Buchholz et al., 2020). Lives were transformed abruptly and with little preparation as education shifted quickly to online learning as the primary mode of instruction and remote work suddenly became commonplace worldwide. Consequently, digital literacy is garnering considerable attention among educators and business practitioners alike (Bassett, 2021; Ramli & Ha, 2021). Awareness is growing globally about the importance of adeptness in using information and communications technologies to solve real-world problems and participate in modern society. According to a World Economic Forum (WEF) report, COVID-19 has thrust us into a new normal wherein digital competence is foundational to success in an ever digitally reliant world (WEF, 2020). It is imperative for higher education to embrace this call for action, particularly as institutions of higher education have been slow to define, assess, and amplify digital literacy in parallel with advances in the enhancement of reading, writing, and arithmetic literacy.

Before digital literacy gained wide acceptance as a construct, scholars used various labels to refer to the constellation of competencies it comprises: computer fluency, technology proficiency, computer competence, digital media literacy, and so on. Digital literacy emerged as the construct of choice, perhaps due in part to a major initiative in higher education that removed the prejudice that literacy implies only basic proficiency (Ventimiglia & Pullman, 2016). Also growing in prominence is the term critical digital literacy, the notion that a comprehensive view of digital literacy incorporates competent use with reflection and a critical awareness of the wider societal, political, economic, cultural, and environmental implications of using digital technologies (Pötzsch, 2019). In any case, as the deficit in digital preparedness grows, advancing digital literacy surfaces as a major challenge for higher education (Cummins et al., 2016).

The myriad extant definitions of digital literacy coalesce around the notion of effective use of information technology to solve real-world problems. Digital literacy is multifaceted, encompassing skills, knowledge, and attitudes (Cummins et al., 2016; Pérez & Murray, 2010) that drive intentional and reflective use of technology to solve problems (Pérez & Murray, 2010). Digital literacy extends beyond acquisition of technology skills to incorporate critical, analytical, and creative thinking. Several dimensions of core competencies have been identified, including basic understanding of computers and networks, functional use of operating systems and productivity software, information literacy, digital content creation, and understanding the socio-cultural impacts of technology. Conceptualizations of this complex construct also have in common a view of the user or learner becoming empowered through digital literacy study and practice (Alexander et al., 2017).

The digital transformation of society is accelerating at a rapid pace. No longer can higher education take for granted that students are equipped with the digital skills needed for an increasingly digital society (Murray & Pérez, 2014) or that they are prepared to provide the support students need to achieve a critical level of digital competence (Tejedor et al., 2020). This paper explores the prevalence of digital literacy in the top public and private universities around the globe by conducting a qualitative examination on compulsory requirements, digital literacy offerings, university identified digital literacy initiatives, and university strategic plans.

## BACKGROUND

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No one argues that digital literacy is unimportant. In fact, digital literacy has been referred to as the fourth literacy, taking its place alongside reading, writing, and arithmetic among the core competencies required for success in higher education and beyond (Murray & Perez, 2014). Surprisingly, however, recognition of digital literacy as a fourth literacy has yet to manifest broadly at any educational level in the form of standardized assessments, remedial courses, or inclusion in required curricula. This is problematic because digital literacy – like reading, writing, and arithmetic – is a meta-competency that transcends major, discipline, and profession. Nonetheless, colleges and universities have tended to assume adequate digital literacy exists among students, inferring that exposure to technology equates to deep understanding. However, many studies have shown that students' adeptness at using devices does not equate with the ability to critically and effectively use digital technologies to solve problems (Park et al., 2021) – a dynamic magnified by the pandemic.

Perhaps higher education is relying on primary and secondary educational systems to equip students with requisite digital skills. Many countries have implemented strategies to address digitally literacy in school-aged children. On par with the cognitive abilities of school aged children, these programs typically focus on teaching basic skill in using computing devices and common software applications. These programs, however, lack in robustness; studies have shown school-aged children are developing basic digital skills, but not the digital literacy needed to even be successful in their schoolwork (Tamez-Robledo, 2021).

A limited definition of digital literacy is inadequate to address an ever-increasing digitally-centered world (Reddy et al., 2020). The 'digital surge' in the use of digital technologies brought about by

COVID-19 (De' et al., 2020), has led to an exponential increase in the importance of digital literacy and the need to expand the constructs of what it means to be digitally literate (Martzoukou, 2021). Digitally literacy has to address the ever-expanding range of emerging technologies and the impact of those technologies on society (Duin et al., 2021).

Awareness of the growing importance of digital literacy in today's workplace coexists paradoxically with apparent foot-dragging on the part of many universities in assessment and amplification of these important competencies. Moreover, many employers and educators acknowledge that institutions of higher education are not adequately preparing college graduates in the area of digital literacy. Digital literacy necessary for today's college graduates requires the ability to leverage technologies to solve problems, complete higher-order tasks, and accomplish goals (NACE, 2021).

The pandemic has generated a greater sense of urgency for institutions of higher education to ensure access to and understanding of digital technologies by students, faculty, and staff. Educational institutions will have to adapt their methodologies to promote explicit and intentionally reasoned digital literacy strategies that combine the competencies possessed by users of technology with the generation of new competencies required to successfully participate in the digital transformation of education, business, and society (Santos & Serpa, 2017).

## METHODOLOGY

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In this paper, we investigated the inclusion of digital literacy in universities around the globe by conducting a qualitative examination of the top 50 undergraduate degree granting institutions as ranked by US News and World Report (n.d.). Of these institutions, 27 were from the United States (US), 6 were from the United Kingdom, 4 were from Australia, 2 were from Canada, and 2 were from Singapore, with one each from China, Saudi Arabia, Belgium, Denmark, France, Germany, Netherlands, and Switzerland. Two other institutions (one from the US and one from Sweden) only offered graduate level health science degrees and were not included in this study.

Study data is presented in two groups, non-US universities and US universities. The delineation is made to account for the compulsory general education component required to earn a degree in a US university. The general education component, also referred to as the core curriculum, requires students to take coursework in core subject areas (such as writing, math, science, fine arts, technology and social science) outside of their major area of study. For the most part, the number of required core courses equates to a year of undergraduate study and students typically take most of these courses during their first and second year of study. Conversely, many universities outside the US, take a more focused approach. Students apply to a specific program of study whereby the only compulsory coursework is related to the major area of study. Some programs allow and even encourage students to take courses outside their field of study, but these courses make up a very small component of the degree program.

Data collected focused on compulsory requirements for all students, digital literacy offerings, university identified digital literacy initiatives and university strategic plans. Data was obtained via the most recently published university catalogs, course offerings and student handbooks as well as other materials posted on the university web site. An additional assessment was made for US universities as these institutions require students to complete a general education component and publicly report this information in a standardized format known as the Common Data Set (CDS) (CDS, n.d.). Therefore, we were able to conduct a pattern analysis of the general education offerings for US universities. Finally, university admissions requirements were reviewed. No university required digital literacy as a condition of acceptance.

## FINDINGS

### *INTERNATIONAL REVIEW*

Of the 50 top ranked universities, 22 were non-US undergraduate degree granting institutions traversing the United Kingdom (six universities), Australia (4 universities), Canada (2 universities) Singapore (two universities), China, Saudi Arabia, Belgium, Denmark, France, Germany, Netherlands and Switzerland. All were public universities whose only common admission requirements were high school equivalent education and language proficiency in the language used for instruction. Only three institutions required all students to undertake a common general education component. The National University of Singapore and Nanyang Technological University of Singapore included digital literacy in the core and Tsinghua University of Beijing China requires computer studies. Degree requirements in other institutions were primarily course of study specific, although some universities encouraged students to take courses outside their discipline. While not a student requirement, several universities have implemented digital literacy initiatives. These ranged from non-credit earning courses in digital literacy skills to initiatives promoting digital literacy across the curriculum to strategies focused on supporting digital education. No references to compulsory requirements or to digital literacy engagement activities were observed in four universities (University of Amsterdam King Abdul Aziz University, University of Munich, and the Catholic University of Leuven [Katholieke Universiteit Lueven]). Observed required digital literacy coursework and digital literacy engagement activities are outlined in Table 1.

**Table 1: Digital Literacy in Top-Ranked Non-US Undergraduate Degree Granting Institutions**

University (Ranking) Country	Compulsory Requirement for All Students	Digital Literacy Engagement
University of Oxford (5) United Kingdom	None identified	The University implemented a digital education strategy to ensure adoption of best technology-enhanced teaching is reviewing that strategy in light of the impacts of COVID-19.
University of Cambridge (9) United Kingdom	None identified	The University Information Services Department offers 'Digital Literacy Skills' non-credit classes for students.
University of Toronto (17) Canada	None identified	The University has a campus-wide pilot project designed to assist faculty in the design and delivery of media rich learning modules with the goal to overcome challenges faculty face adopting technology-based learning.
University College London (19) United Kingdom	None identified	The University highlights a digital education team that provides instructional design services to support digital education (e-learning).
Imperial College London (20) United Kingdom	None identified	The University has devised and implemented a digital learning strategy using innovative technology to transform digital learning and teaching.
University of Melbourne (25) Australia	Most programs require students to take courses outside the discipline (breadth track).	The University has developed a scholarly and digital literacy framework as a tool for embedding digital capabilities in the curriculum.
Swiss Federal Institute of Technology Zurich (26) Switzerland	All students undertake a 'science perspective' by participating in lectures from various fields of study such as humanities, social sciences or political science.	The University participates and has partnered with Swiss Digital Day events that promote dialogue on digitization and highlights projects that represent the digital future.

<b>University (Ranking) Country</b>	<b>Compulsory Requirement for All Students</b>	<b>Digital Literacy Engagement</b>
University of Sydney (27) Australia	None Identified	The University library offers a digital literacy course open to all students.
Tsinghua University Beijing (28) China	Compulsory courses that include computer skills.	The curriculum includes a general education component of compulsory courses that include computer skills
University of Edinburgh (30) United Kingdom	None identified	The University developed a digital skills framework that assists in generating a plan to develop one's digital skillset based on an assessment of their current digital capabilities.
University of British Columbia (31) Canada	Most programs require at least one course in academic writing	The University houses a Digital Literacy Centre that facilitates and promotes research and teaching in all areas of digital literacy.
National University of Singapore (32) Singapore	The curriculum includes a general education component and further incorporates computational thinking as a graduation requirement.	Computational thinking was incorporated as a graduation requirement in 2017. The requirement may be fulfilled by a computational reasoning course or other designated courses that incorporate computer programming, algorithmic thought, or application of computational thinking to discipline specific problems.
King's College London (34) United Kingdom	None identified	The University offers a cross-curricular module [unit of study] on digital literacy.
University of Copenhagen [Kobenhavns Universitet] (34) Denmark	None identified	The University strategic plan identifies strengthening student digital skills as a key potential and instituted a university-wide initiative focused on digital literacy and basic digital competence, digitizing the core curriculum and enhancing digital education and digitally supported didactics.
University of Queensland (36) Australia	None Identified	The University library developed an Information and Digital Literacy Strategic Framework that defines digital literacy as a core capability of contemporary society and developed a suite of modules to help students develop their digital skills.
Nanyang Technological University (38) Singapore	The curriculum includes a general education component which specifically incorporate a digital literacy requirement	Digital literacy was introduced into the University's core curriculum in 2018. Course options include data science, digital society and 'making sense of big data.'
Sorbonne Universite (43) France	None identified	The University strategic plan states the university is actively involved in the digital revolution and specifically notes its work to support awareness and research around digital and artificial intelligences.
Monash University (48) Canada	None identified	The University has developed a conceptual model entitled the Digital Skill Development Framework, focused on incorporating digital skills into the curriculum.

### ***UNITED STATES UNIVERSITIES***

The typical US model of undergraduate education requires students to complete a general education component comprised of a set of learning experiences that span across several discipline areas. The

Association of American Colleges and Universities (AACU) notes that general education is designed to provide “broad learning in liberal arts and science disciplines, and forms the basis for developing important intellectual, civic, and practical capacities.” (AACU, n.d.). Another goal of general education is to amplify students' academic skills to ensure success in college level learning (Zai, 2015).

In the US the CDS initiative was initiated to provide a consistent and standardized way to report information about institutions of higher education to assist students as they transition from high school to college (CDS, n.d.). Data related to general education offerings is included in the Common Data Set (CDS). Specifically, the CDS asks institutions to report whether students are required to complete coursework in the following areas, fine arts, computer literacy, English (including composition), foreign languages, history, humanities, mathematics, philosophy, sciences (biological or physical), and social science.

The 26 US universities examined in this study included 15 private institutions and 11 public institutions. All universities required students to complete a general education component that typically included between 7 and 10 courses spanning multiple discipline areas. Standardized reporting of general education requirements is depicted in Table 2.

**Table 2: US University General Education Requirements by Discipline Area**

Discipline Area	# of Institutions Requiring Courses in this Area
Arts/Fine Arts	12
Option of either Humanities or Fine Arts	1
Computer Literacy	0
English	23
Foreign Language	19
History	10
Humanities	23
Mathematics/Quantitative Reasoning	18
Philosophy	6
Science (physical or biological)	22
Natural Science or Technology	1
Social Science	22
Other: Studies in Culture, Ethnicity or Diversity	7
Other: Physical education (2), Ways of Thinking (1)	3

While no required computing or digital literacy courses were evidenced, many institutions allowed students to choose options within the core curriculum. However, options varied greatly between institutions and even within institutions often specified by discipline area. For example, options varied between programs focused on the liberal arts and programs focused on engineering. That said, all but three universities offered course options in computer-related areas such as introductory computer science, introductory programming and data science in their general education programs for students enrolled in the majority of majors offered by the institution. The majority of these courses are offered as options under the category of quantitative reasoning or mathematics. Table 3 provides a listing of various computer-related general education course options provided to students.

**Table 3: US University General Education Options Related to Digital Literacy**

Option	Institutions Offering this Option
Computer Science/Programming	16
Data Science/Data Analytics	16
General Computing Concepts	3
Information Science	1
Information Theory	1
Information and Logic	1
No offerings	5
*Only two of the seven colleges that make up the University of California – San Diego require a computing course	
** The majority of universities offered the courses as options under the category of Quantitative Reasoning. Exceptions included Mathematics (1), Mathematical Thinking (1), Formal Studies (1) or Science including Science and Technology (3).	

**Digital literacy initiatives in US institutions**

Of the 26 US universities examined, 17 instituted some type of digital literacy initiative. These digital literacy engagement activities are outlined in Table 4.

**Table 4: Digital Literacy Engagement in Top-Ranked US Undergraduate Degree Granting Universities**

University (Ranking) Country	Digital Literacy Engagement
Harvard University (1)	The University sponsors several Initiatives to promote digital literacy, most notably the Berkman Klein Center for Internet and Society whose mission is to "explore and understand cyberspace" in order to "tackle the biggest challenges presented by the Internet."
Massachusetts Institute of Technology (2)	MIT sponsors many programs promoting digital literacy both within and external to the university community. A recent project, titled the Digital Workforce Challenge, solicits proposals for innovative solutions to increase digital literacy skills among marginalized and underserved populations to meet the workplace demands of the future.
Stanford University (3)	Various groups at Stanford provide resources to address gaps in digital literacy among different populations including school aged children, older adults, and college students. A major theme, under the heading of reimagining digital literacy education, revolves around fostering critical analysis of information obtained via the Internet and social media.
University of California Berkeley (4)	The University library is very active in offering resources including workshops, tutorials, and online reference materials to support development of digital literacy among the campus community.
University of Washington – Seattle (8)	The University is part of a multi-disciplinary and multi-institutional group awarded a National Science Foundation grant to reimagine how digital literacy and critical thinking skills are taught. The focus is on critical analysis of information. See also University of Texas at Austin.

University (Ranking) Country	Digital Literacy Engagement
Princeton University (11)	While no specific digital literacy initiatives were identified, the University's strategic plan has cited technology's transformative impact as one of two trends of major importance to the university that will guide how the University prioritizes initiatives and allocates resources.
University of California – Los Angeles (13)	Although it appears to no longer be active, UCLA instituted a project known as IT2020 designed to support digital citizen among faculty, staff and students with the goal that all members of the community attain a basic level of digital literacy.
University of Pennsylvania (14)	Sponsored through the Center for Undergraduate Research and Fellowships, The University has implemented the Digital Literacy Fellows program open to students in their junior or senior year of study. Fellows work with emerging technologies to develop a digital project that amplifies and enhances their digital literacy skills.
University of Michigan – Ann Arbor (17)	While the University does not appear to have a general digital literacy initiative, the history department in the College of LSA has instituted the History at Work project which focuses on developing digital literacy skills needed to 'do history.' Digital literacy has been identified by the American Historical Association as a necessary skill for success.
Duke University (23)	As outlined in the Duke University Academic Strategic Plan, Duke University is focusing their digital literacy strategy on establishing technology-centered and digitally relevant environments to promote collaboration, innovation, and team-based research.
Washington University in Saint Louis (33)	The University sponsors faculty learning communities to explore ways to better develop students' information literacy skills. In addition, Washington University St. Louis is working to complete an updated strategic plan inclusive of a focus on the digital transformation of the university.
University of North Carolina – Chapel Hill (36)	The University instituted a Media Design Center in early 2021 whose mission is to 'boost digital literacy' throughout the university community. It should also be noted that digital literacy is integrated into the English course all students are required to take.
University of Texas – Austin (38)	The University is part of a multi-disciplinary and multi-institutional group awarded a National Science Foundation grant to reimagine how digital literacy and critical thinking skills are taught. The focus is on critical analysis of information. (See also the University of Washington). In addition, one of the pillars of aspiration in the university's 2022 strategic is transformative action to address the challenges technology places on society.
University of Wisconsin – Madison (41)	The University of Wisconsin – Madison sponsors a digital skills bootcamp to address the need for more technology-skilled employees in the work force.
University of Pittsburgh (43)	Identifying the widening digital divide resulting from the COVID-19 pandemic, the University has reinvigorated a focus on digital access and equity. The focus is both campus and community-based. The objectives are to increase access, provide technical support, and offer programs to foster digital literacy across the lifespan.

University (Ranking) Country	Digital Literacy Engagement
Ohio State University (45)	The University sponsors a ‘Digital Flagship’ university-wide initiative supporting education innovation blending technology with experience and student engagement to transform learning. The program provides opportunities for the university community to develop software apps to meet university needs that support technology integrity, digital literacy, and active learning.
University of Minnesota – Twin Cities (47)	No digital literacy strategies or initiatives were identified; however, it is interesting to note that a faculty member in College of Liberal Arts is engaging in exploratory research to address what she refers to as a digital literacy crisis among college students.

## DISCUSSION

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Digital literacy is critical to participation in a contemporary knowledge-based society and is requisite to both academic success and career development. For years, the role of higher education in the amplification of digital literacy among college students has been debated, but efforts have been limited primarily to ad hoc, unsystematic attempts to rectify disparities between students’ exposure and understanding. Exemplified by the relative dearth of digital literacy assessments in higher education, universities have tended to assume that students gain critical IT competencies in primary and secondary education or via exposure to social media. Interestingly, none of the universities’ admissions requirements required students to demonstrate digital competence. However, the COVID-19 pandemic exposed the reality that many institutions, professors, and college students were under-prepared for the surge in reliance on digital technologies. Perhaps as a consequence of the pandemic, awareness appears to be growing of the need to infuse digital literacy at both institutional and individual levels.

The review of digital literacy amplification at top universities outside the United States showed that while compulsory digital literacy was uncommon, a majority of these universities undertook some form of initiative to promote digital literacy. The initiatives were varied but most common were efforts sponsored by the university library or instructional support service. Programs offered through libraries often incorporated raising students’ abilities to critically assess information disseminated via the Internet (i.e., news outlets and social media platforms). Instructional support services focused on developing digital learning strategies and provided assistance in development and delivery of digitally enhanced learning components. Other initiatives supported the development of digital literacy among students or the incorporation of digital literacy across the curriculum. Several universities developed or implemented frameworks to assist students in assessing and enhancing their digital competence (e.g., University of Melbourne, University of Edinburgh, University of Queensland and Monash University).

Although US universities typically require students to complete a set of core courses, none of the top-ranked US universities required students to complete a dedicated digital literacy course. Most universities, however, did allow students to choose amongst a collection of courses to meet general education requirements, including options such as introduction to computer science or data science, or computer programming, which are related to digital literacy. However, courses such as computer science typically address critical digital literacy competencies tangentially rather than holistically.

Many top US universities are focused on developing a digitally literate society and workforce. For example, several universities instituted initiatives to address the impact of digital technology on society (e.g., Harvard University, Massachusetts Institute of Technology, University of Wisconsin – Madison, and the University of Pittsburgh). Other universities are focused on developing creating ways to teach digital literacy or exploring how emerging technologies should be incorporated into digital literacy education (Stanford University, University of Pennsylvania and University of Minnesota – Twin

cities). Finally, the National Science Foundation is funding a nationwide initiative, inter-institutional (e.g. University of Washington – Seattle and University of Texas – Austin) collaboration tasked with reimagining digital literacy.

## CONCLUSION

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The pandemic has been described as an accelerating rather than disruptive force relative to dynamics transforming higher education. Online institutions were the only sector in higher education experiencing growth before COVID-19 sent traditional universities scrambling to shift to online instruction in a matter of days (National Student Clearinghouse Research Center, 2020). The pandemic has exposed or highlighted the criticality of digital literacy to not only educational and vocational success but also to general wellness:

The pandemic has clearly underlined that some are much more vulnerable than others. Without digital skills, it is increasingly hard to be well informed, to be an attractive employment prospect, to interact with public and health services and to protect yourself online. In a society where half the population can't do these things, no one is safe until everyone is safe, and while we may have tackled the viral pandemic, we have yet to tackle the digital skills shortage pandemic ... (Raben, 2021).

Societal impacts of the COVID-19 pandemic continue to emerge and will resonate for decades to come. Perhaps one positive outcome will be a clarion call to enhance the digital literacy of all citizens, not just students and employees. Something appears to have happened around the globe as technology unexpectedly and suddenly emerged as the sole conduit for social, workplace, and instructional interaction. Universities are best positioned to answer the clarion call by doubling down on emerging systematic efforts to assess and amplify digital literacy among students, faculty, and staff, and also by making attainment of these critical competencies possible more broadly via continuing and professional education.

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## Digital Literacy in the Core

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