DIGITAL LITERACY, DIGITAL TOOLS, AND HIGHER-ORDER THINKING

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Recently, the EdTech Demonstrator team have been discussing the concept of digital literacy. What does it really mean to be digitally literate? Is this more important for students, teachers, or both? Is training around the use of digital tools the same as promoting digital literacy itself? And is it possible for teachers to try to train their learners in digital literacy in a way that blends seamlessly into their everyday teaching practice?

To address some of these thoughts and questions, I set about researching online to see how different academics define digital literacy, and what suggestions and strategies are put forward about integrating digital literacy into a curriculum. From the notes and quotes I put together, I decided to write this blog as a sort of literature review on the subject, with an attempt to pull out common themes or strands.
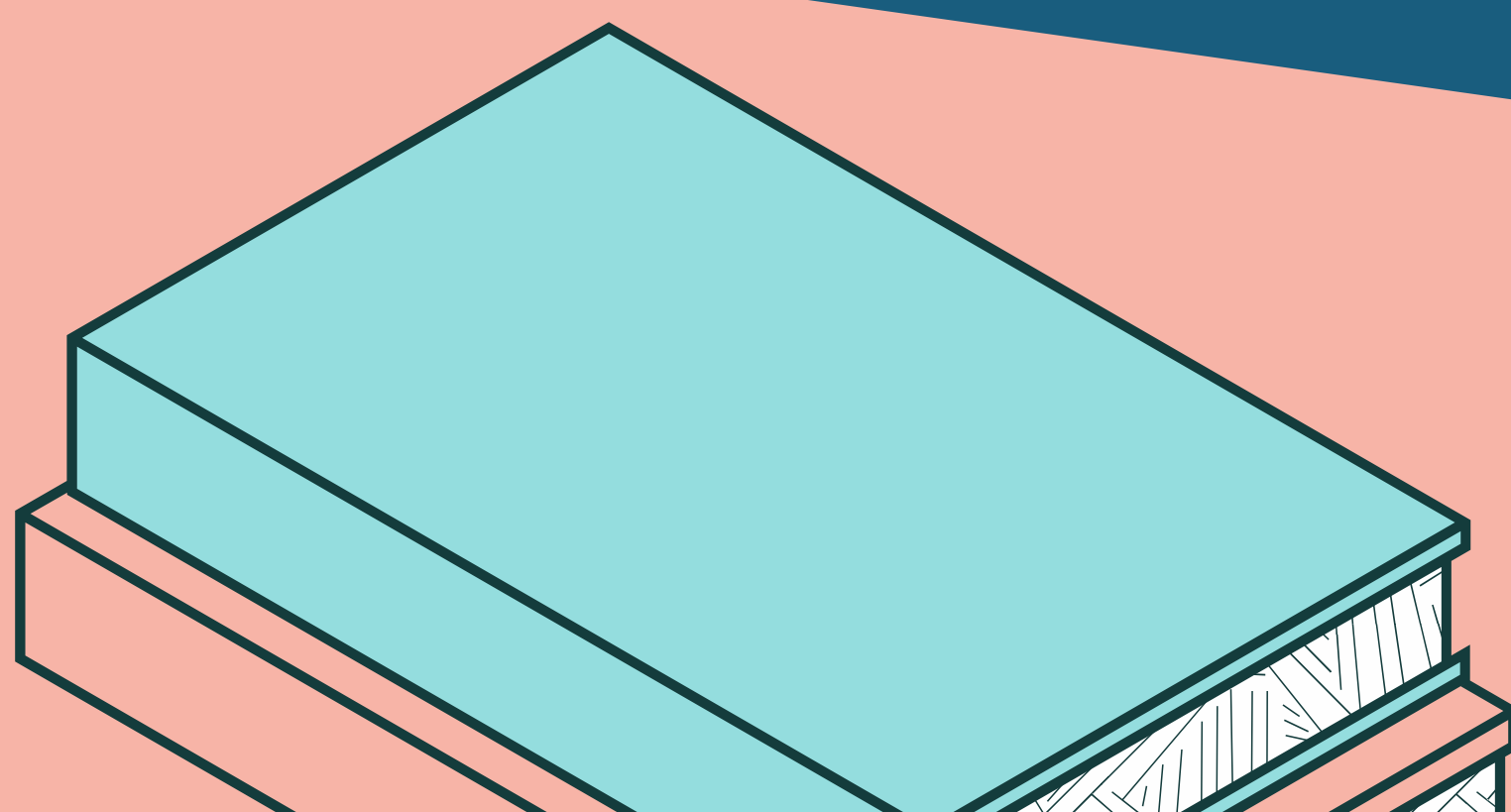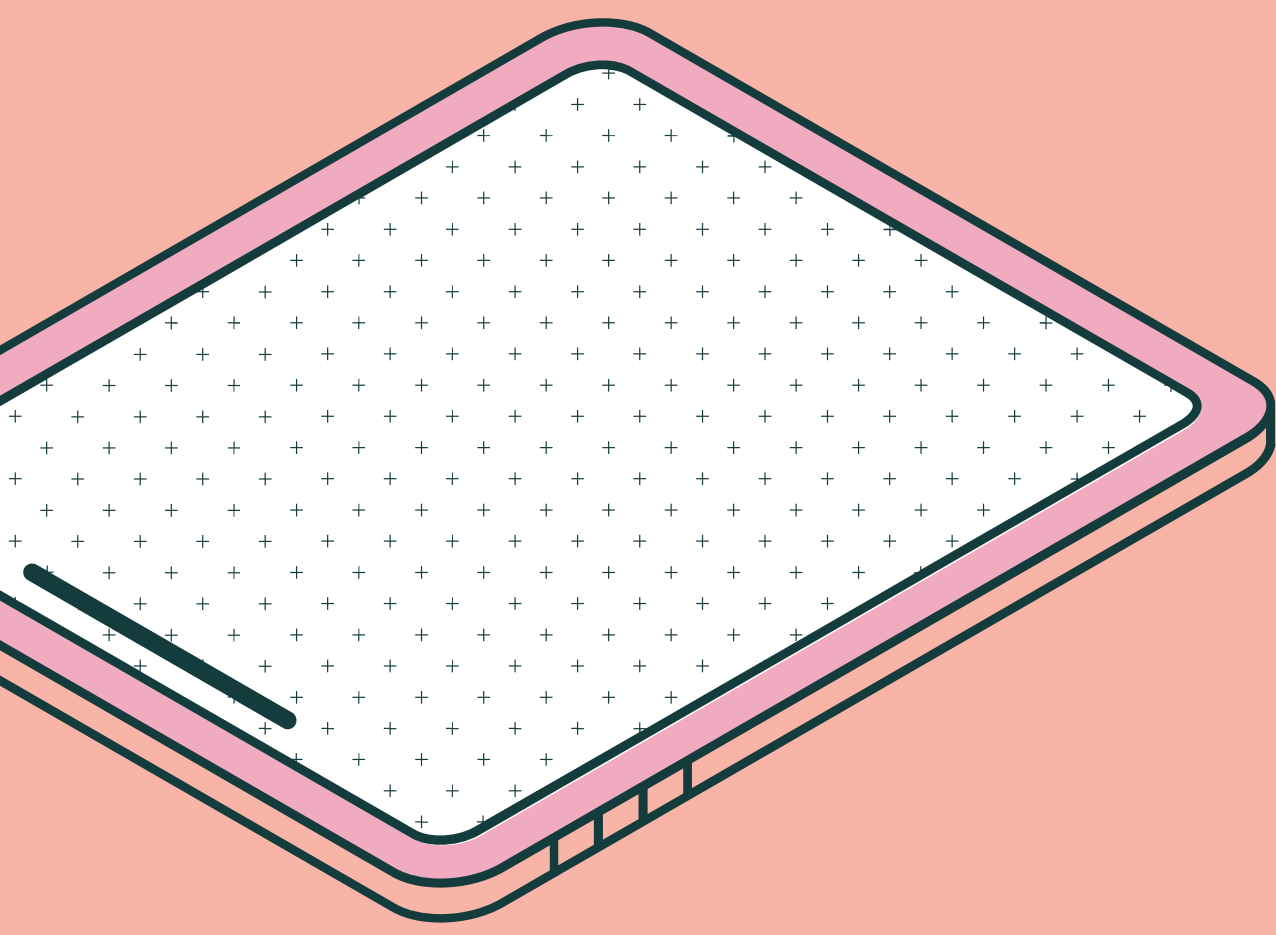
What is digital literacy?

Looking through definitions, it is clear that digital literacy covers a broad spectrum of skills, beginning with the basics of being able to operate digital devices, and running through to a much deeper understanding of a person's role and interactions in the digital world. To get an idea of the spectrum, and some clear descriptors of what some of those skills at different points might look like, it's a good idea to start by looking at the **Government's Essential Digital Skills Framework,** which is "intended to be used by everyone in the UK involved in supporting adults to improve their essential digital skills". This mainly reads as a checklist of practical skills. If we look elsewhere for the more abstract elements of digital literacy, it is interesting to note is that so much of this "extra" definition closely matches a lot of the **higher order thinking skills** or citizenship that most teachers are probably already working hard to instil in their learners. Martin (**2005, cited in Sadaf and Johnson, 2017**) evokes many higher-order verbs by calling digital literacy "the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others".

Several sources add more specific definitions to fit the context of students in HE and FE. For example, in **Education Corner**, Loveless claims that "Becoming digitally literate means that students develop technological skills, learn authorship rules, such as copyright and plagiarism, understand how to access online information and learn social responsibility while interacting on social networks." Writing in **informED**, Stenger (2018) repeats the importance of avoiding plagiarism, while also pointing out that a student's ability to safeguard themselves and their privacy is an essential aspect of being digitally literate.

> *"Digital literacy begins with the basics of being able to operate digital devices, and runs through to a much deeper understanding of a person's role and interactions in the digital world."*

If you're looking for a more concise definition to encompass all of this, then consider this offering from **Promethean World**:

"digital literacy = digital tool knowledge + critical thinking + social engagement"

Why is digital literacy important?

This question could be divided into two parts, as some academic websites focus more on the importance of digital literacy for the teacher, while others look more at the outcome for students. Regarding the former, let's start with Bolden (2019), writing in **Teachhub.** "As educators compete with social media and interactive apps, they will need to know how to effectively engage students in academics with the integration of technology." The idea of teachers competing with social media is an interesting claim. It could be argued that a part of good digital literacy for a teacher is harnessing the power of social media for their learners, rather than seeing it as competition. Bolden also points out that institutions and teachers can play an important role in "closing the digital divide between subpopulations of students to ensure adequate equity and to provide them with the opportunity to compete on a global scale post-secondary education", referencing the importance of digital skills in future employability.

An article in **School of Education Online** also highlights the need for schools to act to lessen the digital divide, especially since the Covid pandemic, and then goes on to explore the role of digital literacy in a teacher's own professional development. It cites a 2020 survey by the International Literacy Association which found that improving their own digital literacy ranked highest in terms of training needs and development goals, with almost 50% of respondents claiming that they would like more CPD in this area.

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As for the importance of digital literacy among students, it's no surprise that nearly all sources flag up the expectations of industries and employers of the future. Furthermore, we've already seen many mentions of how aspects of digital literacy are closely tied to critical thinking and other higher-order thinking skills. Beyond that, several articles refer to a student's need to be digitally literate as a means of preparing themselves for ongoing education, particularly in HE. This article from **Times Higher Education** (sponsored by Adobe) quotes Roger Emery, head of learning technologies at Solent University. He describes the student journey as typically starting with "consumer platforms such as Instagram before moving on to learning platforms such as library and research systems, and finally business platforms used by employers." He expects a highly-literate student to be able to seamlessly move from one such platform to another, based on digital intuition.

"Good digital skills give students the adaptability to pick up a new tool and just run with it, not be scared of it. They can assume that most things are going to work if you crack on with it, rather than find it a barrier."

This ability to adapt and transition is echoed by Adhikari (2012, cited in Anyangwe, 2012) in a **Guardian piece about digital literacy** in higher education, but justified by claiming that the importance of mastering a tool is secondary to looking at its functions objectively and critically. "Digital engagement shouldn't be led by a platform or task-specific agenda: What is required is a change in consciousness in how we relate to technology. The underlying principle is that all technology should facilitate critical reflection - awareness of the self and the ability to articulate ideas. We need people to make judgements on the information they consume and the contexts they create whilst sharing information. Technology is becoming increasingly seamless but our relationship with it isn't intuitive."
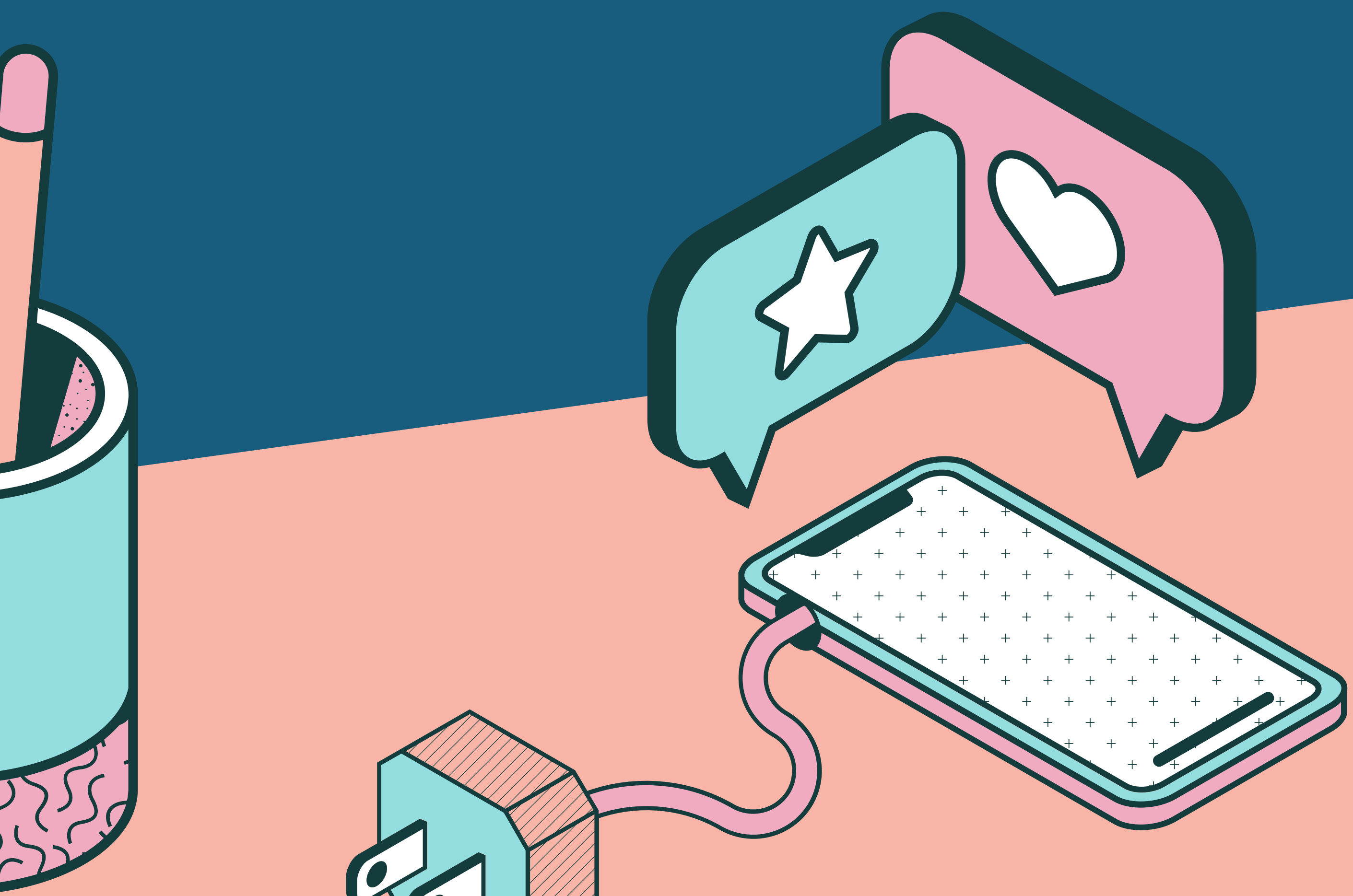
We've heard mention so far of academic skills such as avoiding plagiarism and conducting research. This second area is often cited as a sizeable knowledge gap for today's students, and a considerable disparity between the students' confidence and their actual academic ability. Writing in **Inside Higher Ed**, Kolowich (2011) uses this as a way of busting the myth of the digital native. The article, titled What Students Don't Know details an anthropological study carried out in the libraries of several American universities. Through interviewing and observing librarians working alongside students, the researchers recorded that the majority of students had only very basic skills in finding and evaluating academic resources online. What is more, the students were not aware of their own shortcomings, and did not think to ask any of the library staff for help. Kolowich concludes:

"today's college students might have grown up with the language of the information age, but they do not necessarily know the grammar."

As the title of the above article suggests, tackling what students don't know that they don't know is an important consideration when thinking about improving digital literacy. Another example is given in the article from **School of Education Online**, which mentions "students' mastery of foundational computer skills, such as manipulating input and output devices, navigating and managing file systems, and using search and navigation tools". Students who have only ever used tablets and smartphones often struggle if their work or studies suddenly require them to use a laptop or a desktop PC with a very different interface.

How can teachers help to promote high standards of digital literacy?

Of course, the broad spectrum of definitions of digital literacy, coupled with the age-old dilemma of teachers and institutions struggling to find time and budget for sufficient training means that there is no one simple solution or pathway towards upskilling both teachers and students in digital literacy. It is clear that a lot of change needs to come from leadership level, manifested in the education sector's whole philosophy regarding digital skills. "It is the view of this Committee that digital literacy should be the fourth pillar of a child's education alongside reading, writing and mathematics, and be resourced and taught accordingly.", stated a House of Lords report called **Growing up with the Internet** (2017). Most teachers probably feel that such an emphasis is still a long way off. So, what small changes can teachers implement now, that can go some way towards promoting good digital literacy in their students?

Many of the articles I looked at make similar claims about digital literacy teaching not replacing the teaching of digital literacy, but complementing it building on it. To this end, it is a good idea for teachers to consider digital literacy goals and outcomes in the same way as they would when planning any learning for their students. McConnell (no date), writing for the **University of San Diego** states:

"it is important to start with a plan that includes defining the required skills you expect your students to have mastered by the completion of the year or semester and determining what type of content is best for your class level. Teachers need to ensure that they are directing their digital lesson curriculum appropriately toward each student's level of development."

And if that perhaps sounds a bit overly-simplistic, here are a few practical tools and suggestions that might help...

- For college leaders and management, there are some fantastic templates and "toolkits" from **Jisc here** which serve as guides or auditing tools that can help to shape an institution's approach to digital learning.

- Conduct a needs-analysis test. As mentioned earlier, the Government's Essential Digital Skills descriptors are a good place to start. You can find a self-assessment survey **here** to measure literacy, useful for both students and teachers. You'll notice that that survey is split into three categories: foundation skills, life skills and work skills. If you're looking for something aimed more at students, consider this **survey from the University of Exeter**, which asks students to consider their own relationship with technology particularly in relation to their research and studies.

- Autonomy and independent learning are vital study skills and could be described as literacies in their own rights. Promote this by guiding students towards self-access eLearning for both their taught subject, and for general digital literacy and study skills. A good place to start is with the **Blended Learning Consortium**, or with these guides from **BBC Learning** (originally aimed at EAL learners, but equally valid for all students) For teachers, check out the modules from the **Education and Training Foundation**.

- Model best practice. There are dozens of ways any teacher of any subject can do this. For example, if assigning any of the self-access modules as suggested above, why not make a point of showing your students how you use a hyperlink to share on your VLE, or how you use Channels (if using Teams) to organise units of study. Look at the way that this blog models the Harvard referencing system and consider doing something similar with any texts you share. When introducing supporting texts related to your topcis of study, point out how to evaluate credibility of all sources used, including looking out for fake news related to social issues.

- Similarly, if you have to look up information about your topic of study, try to learn some **advanced Google search techniques** and then make a point of demonstrating these to students in the classroom.

- Familiarise yourself with the **9 Ps of digital citizenship** and look for any opportunity to flag these up to your learners, as and when related issues come up in the classroom.

- When introducing any new digital tools or resources, point out commonalities that students can expect to find. EG, FAQ, password reset, chat-bot, online help forum...

- Give students a choice of how to interpret an assignment. Like this article, for example. It's a blog, but it could equally have been a podcast, an interactive presentation, a video, a screen-recording...

- Encourage experimentation. If a student chooses a new medium, have them teach their classmates how to use it.

Conclusion

Any consideration of digital literacy needs to be dealt with separately to training and upskilling in the technical skills of using learning technology. By starting to contemplate the more esoteric meanings connected to digital literacy – such as linking it to higher-order thinking skills of evaluation, criticality, and reflection, as well as real-world skills such as citizenship, professionalism and safeguarding - then teachers should be able to find many opportunities to bring these topics to the fore in classroom discussions and demonstrations, regardless of which digital resources are being used.

On a more institutional level, schools and colleges would benefit from not purely aiming to put more digital resources in front of their teachers and students, but instead by taking stock of the current digital capabilities of all stakeholders, with special consideration to gaps between the perceived abilities of so-called digital natives and the reality, and look to offer more support to supplement each student's main course of study.

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