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Targeted approach needed to boost digital literacy

The design and delivery of digital literacy campaigns matter as much as the content that is being taught given that age, needs and abilities vary.

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From bank scams and the Covid-19 infodemic to disinformation campaigns on the ongoing Russia-Ukraine war, we are besieged by false information. Governments, technology companies, academics and practitioners face the never-ending task of developing and refreshing their measures to tackle falsehoods in myriad forms and contexts.

There is broad consensus among policymakers, practitioners and academics that promoting digital literacy is the long-term strategy to strengthen people's resilience against falsehoods. Given people's varying needs and abilities, the design and delivery of digital literacy campaigns matter as much as the content that is being taught to them.

As part of the final phase of a study on Singaporeans and false information, we conducted an experiment to look at ways of better delivering digital literacy content. We collaborated with the National Library Board to test its S.U.R.E. (Source, Understand, Research, Evaluate) framework which was launched in 2013 to promote the "importance of information searching and discernment to the general public". The framework boils down to four things – check the source, understand the information, do deeper research and evaluate the information critically. S.U.R.E is delivered in three ways – a slideshow with a talking head, an animated video with narration, and an infographic.

While our study focused on the S.U.R.E. framework, the findings support the following recommendations for improving digital literacy programmes in general.

ADDITIONAL FEATURES FOR SENIORS

According to the Singapore Police Force, the top three common scams involving seniors aged 60 and above last year were phishing scams, social media impersonation scams and investment scams. Digital literacy programmes are critical for this segment to arm them with the know-how and skills in protecting themselves from false information.

But our experiment found that seniors were least likely to find the S.U.R.E. framework useful or clear, helpful and applicable to their everyday lives. They struggled with recalling information connected to it, possibly due to the cognitive effects of ageing, and being generally less familiar with the digital space.

Therefore, additional features should be considered when designing digital literacy programmes for seniors.

Based on respondent feedback about the modalities used in our study, one suggestion is to include a feature allowing seniors to control the speed of content delivery. The benefits of having a self-pacing feature for older learners have been highlighted in other studies. In a meta-analysis conducted in 2003 that examined the effects of different instructional methods, Dr Judith Callahan and her colleagues from the University of Florida found that self-pacing in lessons reduced stress, and increased the focus and memory among older learners.

Other studies also show that giving seniors the autonomy to self-direct their learning can improve their efficacy and resilience against false information. For example, a study involving older adults conducted by researchers from Stanford University during the 2020 US presidential election found that those who underwent a self-directed series of interactive modules were able to more accurately discern false information compared with those who did not.

In addition, a multimedia approach like videos which combine textual, visual and audio elements in a single presentation format – often regarded as de rigueur in literacy modules for the young – can also benefit the old.

According to Mayer's Cognitive Theory of Multimedia Learning, a seminal work in educational psychology, people learn better through a multimedia format, compared with that in a static format.

A multimedia format prevents people from experiencing cognitive overload as information can be more easily processed using multiple sensory channels. Some studies have found that a multimedia approach also sustains people's attention span for longer, deepening their engagement with the content presented.

Therefore, the promise of multimedia for seniors should not be overlooked.

The information in a multimedia format for seniors should be less text-heavy, include more animation and be conveyed through vernacular languages.

MORE SOPHISTICATED FEATURES FOR THE YOUNG

Our study showed that no one, including youth, is immune to false information.

Exposing young digital natives to more sophisticated digital literacy programmes will better prepare them to navigate an increasingly complex digital information environment.

Compared with seniors, the S.U.R.E. framework was more positively received among youth, regardless of the method through which content was delivered. This is possibly due to their familiarity with the online space and their having learnt about different online harms through the Ministry of Education's Cyber Wellness Curriculum in schools. Nevertheless, more can be done to enhance digital literacy programmes for this demographic group.

This may include designing opportunities for them to practise more advanced verification skills which go beyond the existing content covered under S.U.R.E., like lateral reading (leaving the website in question and looking up other sources) and providing them with a range of available resources that support information verification, such as promoting established local and international fact checkers, and reverse image search tools.

Moreover, with youth increasingly playing the role of online information "prosumers" (i.e. people who both consume and produce information online), digital literacy programmes should move beyond treating them as mere clients, to engaging them as potential digital ambassadors who can actively participate in disseminating the digital literacy competencies and knowledge that they possess among their social circles.

In Singapore, digital literacy campaigns by the Media Literacy Council, the National Library Board, the Singapore Police Force, and people-led initiatives such as Byte.sg are among many that aim to equip citizens with the skills required to navigate an increasingly complex online space.

These programmes are headed in the right direction, but more can be achieved.

Instead of a "one-size-fits-all" approach, a targeted approach is needed to tailor both the digital literacy content and the modes of delivery to meet the needs of different segments of society. Only then can Singapore stay ahead of the constantly evolving challenge of false information in our digital age.

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