



GSJ: Volume 14, Issue 4, April 2026, Online: ISSN 2320-9186

www.globalscientificjournal.com

Content Validity of Digital Fluency Assessment Scale (DFAS)

Ara Joyce G. Bautista, Lovely C. Cotino, Kristel Shane E. De Roxas, Althea Anne R. Factor, Arianne Blanch D. Historia, Jeryll Andrea L. Jimenez, Cijay P. Sibayan

¹ College of Education, Quezon City University, 673 Quirino Hi-way, San Bartolome, Novaliches, Quezon City, bautista.arajoyce.gatela@gmail.com

² College of Education, Quezon City University, 673 Quirino Hi-way, San Bartolome, Novaliches, Quezon City, cotino.lovely.celebria@gmail.com

³ College of Education, Quezon City University, 673 Quirino Hi-way, San Bartolome, Novaliches, Quezon City, kristelderoxas4@gmail.com

College of Education, Quezon City University, 673 Quirino Hi-way, San Bartolome, Novaliches, Quezon City, factor.altheanne.rupenta@gmail.com

College of Education, Quezon City University, 673 Quirino Hi-way, San Bartolome, Novaliches, Quezon City, abhistoria1211@gmail.com

College of Education, Quezon City University, 673 Quirino Hi-way, San Bartolome, Novaliches, Quezon City, jimenez.jeryllandrea.luces@gmail.com

College of Education, Quezon City University, 673 Quirino Hi-way, San Bartolome, Novaliches, Quezon City, sibayan.cijay.paculba@gmail.com

Corresponding Author: Edward R. Torre Franca, edward.torre Franca@qcu.edu.ph, College of Education, Quezon City University, 673 Quirino Hi-way, San Bartolome, Novaliches, Quezon City

Abstract. In today's digitally connected society, digital fluency has emerged as a crucial skill set. This study explores students' digital fluency through the factors of (1) digital literacy, (2) digital currency, and (3) digital well-being. The research methodology involves the development of a comprehensive assessment tool comprising 60 items distributed across the three components. Through a rigorous validation process involving expert evaluation, adjustments were made to refine the instrument, ensuring its validity and effectiveness in assessing digital fluency. The findings underscore the importance of aligning assessment items with evaluation criteria to enhance the overall relevance and accuracy of the tool. It recommends revisions and improvements for each item. To further optimize the assessment's efficacy in gauging digital fluency and related competencies.

Keywords: digital fluency, assessment tool, validity and reliability, scale, students

Introduction

Digital fluency, also termed higher-order thinking skills, is among the critical skills needed to survive in a digitally connected society. (McQuiggan, McQuiggan, Sabourin, & Kosturko, 2015). In addition, Briggs and Makice (2011), stated that “Digital fluency is an ability to reliably achieve desired outcomes through digital technology. A 21st-century, digitally fluent citizen must be a lifelong learner who is adept at finding new tools and

resources to help them achieve desired activities. Digital fluency implies “not only knowing how to engage with technology but also being able to produce things of significance with technology”. This would also involve the ability to develop personal learning networks to help discover new tools. Digital fluency is not only about being proficient in technology but actively acquiring new skills and using them to achieve their objectives. It involves the capacity for analysis, synthesis, assessment, and production within the framework of technology and digital information. Moreover, Digital fluency must include lifelong, inquiry-based, exploratory, playful, collaborative, ethical, scaffolded, and mediated learning.

This study has three (3) components to describe digital fluency; Digital Literacy, Digital Currency, and Digital Well-being. Thriving in the digital world involves moving through stages or steps, from a foundational base to digital literacy and onto digital fluency. Digital literacy requires more than just the ability to use software or to operate a digital device; it includes a large variety of complex skills such as cognitive, motoric, sociological, and emotional that users need to have to use digital environments effectively (Liebert, 2004). In contrast to digital literacy, which focuses more on understanding technology, digital fluency focuses on the ability to produce or create something new with technology, as well as knowing when and why to use the chosen technology and then using it smoothly (Niessen, 2013). According to Cosma et al., (2020), digital literacy plays an essential role in promoting students’ self-control. Studies have found that digital literacy enables students to explore and use information from the Internet with digital literacy skills, significantly minimizing online crime. Digital literacy is consciously and competently applying digital skills and behaviors.

Rastogi, V., and Bhakar, R. (2019), digital currency is a type of currency available in digital form. Though it exhibits similar properties and values as physical currency, it can allow instant ownership transfers and thus make transactions smooth. It is used as a blanket term for all electronic money, including both virtual currency and cryptocurrency. Moreover, technological advances in recent years have led to a growing number of fast electronic means of payment available to consumers for everyday transactions, raising questions for policymakers about the role of the public sector in providing a digital payment instrument for the modern economy. (Arapella, Francesca, and Jean Flemming, 2020).

Thomas, N. M., et al. (2022), stated that the term 'digital well-being' is used to refer to the impact of digital technologies on what it means to live a life that is good for a human being. Based on the study of Herden et al. (2021), digital well-being is achieved through a mature and appropriate handling of digital media. Digital well-being requires “self-understanding of what it means to lead a life that is good for us in an increasingly digital society” (Burr & Floridi, 2020), which involves the balancing of its benefits and harms (Büchi, 2021; Jones et al., 2018; Vanden Abeele, 2021). This study aims to assess and give insight into the level of digital fluency among Quezon City University students.

Literature Review

According to the study of Teo (2015) digital fluency and the ability to communicate using digital devices may vary across students in the same learning or group setting. Similarly, being digitally fluent involves not only knowledge of how to use digital technologies but also knowing how to construct ideas of significance with digital technology

(Resnick, 2001). Wang et al., (2011) also stated the value of ‘digital fluency’ as a means to describe user interaction with technology in general. In addition, Digital fluency occurs when an individual leverages technology to create new knowledge, new challenges, and new problems, and to complement these with critical thinking, complex problem solving, and social intelligence to solve the new challenges” (Sparrow 2018). Fluency is marked by individuals creating something—namely content—via technology (Briggs and Makice 2012). To be digitally fluent one must have excellent “communication skills, new media literacy, and cognitive load management” (Sparrow 2018).

Theoretical Framework

The Digital Capability Continuum Model was proposed by Coldwell-Neilson & Cain, 2023, and was used in this study. The digital capability model includes a foundation stage with digital literacies and fluency as stages of evolving knowledge, a moving journey that shifts along the continuum as digital needs and experience dictate. Digital experiences exist as a continuum in a changeable context. Rather than a stepped development process, always beginning at the foundation level, digital capabilities are impacted by individual circumstances and changing contexts, including time factors. The arrowed circular path of the model signifies how people can find themselves at different points of the continuum, fluidly moving along it as a consequence of both individual circumstances and the dynamic evolving nature of the digital world.

Figure 1



Coldwell-Neilson & Cain, 2023 defined digital fluency as contextualized, knowledge-based behaviors that enable adaptive and successful engagement in dynamic digital worlds. Digital fluency relies on continual active engagement with digital cultures and spaces. It is possible to become more literate by lurking, but fluency requires active involvement with creation and flexible application. This study aims to assess and give insight into the level of digital fluency among Quezon City University students.

Methodology

Research Instrument

The researchers developed items to assess college students on their digital fluency. The components consist of Digital Literacy, Digital Currency, and Digital Well-being. The researchers created a set of 20 questions for each component, 60 developed items for the total. The numbering of the items of this assessment tool is 1-20 = Digital Literacy, 1-20 = Digital Currency, and 1-20 = Digital Well-being. For better and easier understanding of the instrument, light yellow for digital literacy, light blue for digital currency, and light green for digital well-being.

Table 1: Researcher-made item questionnaires for digital literacy.

Digital Literacy	1	2	3	4	5
1. I am familiar with hardware and software.					
2. I feel comfortable using application software. Eg: Microsoft products, Internet browsers, and graphics and design software.					
3. I feel confident in updating and downloading application software.					
4. I can easily adopt new technologies.					
5. I find it easy to learn something about using digital devices.					
6. I can share and publish my works digitally.					
7. I use social media platforms to communicate with others. Eg: Facebook, Instagram, Messenger, and Gmail.					
8. I feel competent when using keyboard shortcuts.					
9. I feel confident in using digital devices to access information.					
10. I can create quality presentations with the use of application software. Eg: Canva, Google Slides, Visme, PowerPoint.					
11. I can create a personal website.					
12. I can research information through reliable online sources.					
13. I can produce digital content online.					
14. I can easily engage in online activities. Eg:					

online learning, gaming, and researching.					
15. I can use new features in specific digital devices.					
16. I can properly turn on and shut down a specific device					
17. I know how to scan a disk for viruses.					
18. I can perform file management including saving, deleting, and renaming files.					
19. I can create a basic Excel spreadsheet.					
20. I can move a file from a hard drive to a USB drive.					

Table 2: Researcher-made item questionnaires for digital currency.

Digital Currency	1	2	3	4	5
1. I know how to use mobile wallets effectively for making transactions.					
2. I use credit cards for online shopping and bill payments.					
3. I know how to transfer money from Maya to Gcash.					
4. I know how to protect my mobile wallet with security features like PIN codes.					
5. I know how to transfer money to friends or family members using mobile wallet peer-to-peer features					
6. I know how to use online payment to purchase articles, or research papers online.					
7. I know how to protect my personal and financial information while making online payments.					
8. I know how to utilize discount codes or promotional offers during online payment transactions.					
9. I know how to use bank transfers to send money to another bank account.					

10. I know how to use withdraw money from ATMs or cash machines.					
11. I know how to use mobile transactions to buy premium elements or upgrade to Canva Pro.					
12. I know how to set up different mobile payment methods.					
13. I know how to purchase products online using mobile payment.					
14. I know how to verify websites and transaction details.					
15. I know how to use mobile payment apps like PayPal, Paymaya, and GCash App.					
16. I know how to order foods from Online.					
17. I know how to use digital currency securely to protect my financial transactions, even without relying on traditional banking institutions.					
18. I know how to create unique passwords for my accounts and wallets.					
19. I know how to securely generate and manage private keys for my wallets.					
20. I know how to securely back up my wallet to prevent loss of money.					

Table 3: Researcher-made item questionnaires for digital well-being.

Digital Well-being	1	2	3	4	5
1. I tend to lose track of time when I'm on my device.					
2. I feel the need to check my device right away if it vibrates or makes sound.					
3. I get distracted by my device when I'm with friends or family.					
4. I spend more time on social media than I'd like.					
5. I'll stay on my device instead of going to sleep when I intend to.					

6. I feel like I'm missing something important if I don't check my device.					
7. If I have a question I reach for my device for an immediate answer.					
8. I feel overwhelmed by the amount of unread emails I have.					
9. I have enough interest to improve my digital skills.					
10. I am able to set boundaries for myself regarding the use of digital devices during specific times or activities.					
11. I am able to maintain a healthy balance between time spent online and engaging in offline activities.					
12. I experience physical discomfort (e.g., eye strain, headaches) after extended periods of using digital screens.					
13. I compare myself to others based on their online presence or social media profiles.					
14. I am conscious of the content I consume online and its potential impact on my mental health and emotions.					
15. I can be a role model in using digital tools.					
16. I feel more connected to other people when I am online.					
17. I find that my problem-solving skills have improved since going digital.					
18. Access to online resources makes me feel confident.					
19. Being online has made me interested in new things.					
20. I feel more connected to other people when I am online.					

During the process of assessment, the college students, who are the participants, can answer this through social networks (e.g., Facebook) and by e-mail spreading. The participants will assess themselves, scale items were prepared in 5-point Likert type. The

participants are asked to rate the scale from 1 to 5; 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. After that, the researchers will get the mean and standard deviations for scoring and interpret the result for each component.

Table 4: The scoring for the assessment tool

SCORE IN EACH COMPONENT	PROFICIENCY
1 - 2	Foundation
3 - 4	Intermediate
5 - 6	Advanced
7 - 8	Specialized
9 - 10	Professional

The table above were developed by the researchers. This assessment tool will help students to identify their level of digital fluency.

Validation of Instrument

After creating the assessment tool, the researchers will test the item's relevance and validity by making it validated by five experts who are related professionals in the field of Information and Technology or Computer Science. After the validation in order to ascertain if the parts in the instrument should be kept, revised, or eliminated, the researchers computed the content validity index (I-CVI), probability of chance agreement (Pc), kappa statistic coefficient (K), and content validity ratio (CVR).

Table 5: Content Validity Index (I-CVI)

DIGITAL LITERACY	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	A	I-CVI	INTERPRETATION
1	1	4	4	4	4	4	5	1	ACCEPTED
1	2	4	4	4	4	4	5	1	ACCEPTED
1	3	4	4	4	4	4	5	1	ACCEPTED
1	4	4	4	4	4	4	5	1	ACCEPTED
1	5	4	4	4	4	4	5	1	ACCEPTED
1	6	4	4	3	4	4	5	1	ACCEPTED
1	7	4	4	4	4	4	5	1	ACCEPTED
1	8	4	3	3	4	4	5	1	ACCEPTED
1	9	4	4	4	4	4	5	1	ACCEPTED
1	10	4	4	4	4	4	5	1	ACCEPTED

1	11	4	3	3	4	4	5	1	ACCEPTED
1	12	4	4	4	4	4	5	1	ACCEPTED
1	13	4	4	4	4	4	5	1	ACCEPTED
1	14	4	4	3	4	4	5	1	ACCEPTED
1	15	4	4	3	4	4	5	1	ACCEPTED
1	16	4	4	4	4	4	5	1	ACCEPTED
1	17	4	4	2	4	4	4	0.8	REJECTED
1	18	4	4	4	4	4	5	1	ACCEPTED
1	19	4	4	4	4	4	5	1	ACCEPTED
1	20	4	4	2	4	4	4	0.8	REJECTED

DIGITAL CURRENCY	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	A	I-CVI	INTERPRETATION
2	1	4	4	3	4	4	5	1	ACCEPTED
2	2	4	4	1	1	1	2	0.4	REJECTED
2	3	4	4	2	4	4	4	0.8	REJECTED
2	4	4	4	4	4	4	5	1	ACCEPTED
2	5	4	4	3	4	4	5	1	ACCEPTED
2	6	4	4	3	4	4	5	1	ACCEPTED
2	7	4	4	4	4	4	5	1	ACCEPTED
2	8	4	4	2	4	4	4	0.8	REJECTED
2	9	4	4	4	4	4	5	1	ACCEPTED
2	10	4	4	4	4	4	5	1	ACCEPTED
2	11	4	4	2	4	4	4	0.8	REJECTED
2	12	4	4	3	4	4	5	1	ACCEPTED
2	13	4	4	3	4	4	5	1	ACCEPTED
2	14	4	4	3	4	4	5	1	ACCEPTED
2	15	4	4	3	4	4	5	1	ACCEPTED
2	16	4	4	3	4	4	5	1	ACCEPTED
2	17	4	4	4	4	4	5	1	ACCEPTED
2	18	4	4	4	4	4	5	1	ACCEPTED
2	19	4	4	4	4	4	5	1	ACCEPTED
2	20	4	4	4	4	4	5	1	ACCEPTED

DIGITAL WELL-BEING	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	A	CVI	INTERPRETATION
3	1	4	4	3	3	2	4	0.8	REJECTED
3	2	4	4	2	2	1	2	0.4	REJECTED
3	3	4	3	2	3	2	3	0.6	REJECTED
3	4	4	2	3	2	1	2	0.4	REJECTED
3	5	4	2	1	2	2	1	0.2	REJECTED
3	6	4	2	3	2	1	2	0.4	REJECTED

3	7	4	3	4	4	4	5	1	ACCEPTED
3	8	4	2	2	4	3	3	0.6	REJECTED
3	9	4	3	4	4	4	5	1	ACCEPTED
3	10	4	3	3	4	4	5	1	ACCEPTED
3	11	4	2	3	4	4	4	0.4	REJECTED
3	12	4	3	3	4	2	4	0.4	REJECTED
3	13	4	1	2	3	1	2	0.4	REJECTED
3	14	4	2	3	4	2	3	0.6	REJECTED
3	15	4	3	3	4	2	4	0.8	REJECTED
3	16	4	3	3	4	2	4	0.8	REJECTED
3	17	4	3	3	4	4	5	1	ACCEPTED
3	18	4	3	4	4	4	5	1	ACCEPTED
3	19	4	4	3	4	4	5	1	ACCEPTED
3	20	4	3	4	4	2	4	0.8	REJECTED

From the tables above, out of the 20 items for digital literacy, 2 items (18, and 20) are rejected and the rest of the items are accepted. For the digital currency, 4 items (2, 3, 8, and 11) have also been rejected. Only six items (7, 9, 10, 17, 18, and 19) out of the twenty questions about digital well-being are accepted. Items that have been rejected need to be revised or changed.

Table 6: Probability of chance agreement (Pc) and Kappa statistics (K)

DIGITAL LITERACY	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	Pc	KAPPA	INTERPRETATION
1	1	4	4	4	4	4	0.031	1	EXCELLENT
1	2	4	4	4	4	4	0.031	1	EXCELLENT
1	3	4	4	4	4	4	0.031	1	EXCELLENT
1	4	4	4	4	4	4	0.031	1	EXCELLENT
1	5	4	4	4	4	4	0.031	1	EXCELLENT
1	6	4	4	3	4	4	0.031	1	EXCELLENT
1	7	4	4	4	4	4	0.031	1	EXCELLENT
1	8	4	3	3	4	4	0.031	1	EXCELLENT
1	9	4	4	4	4	4	0.031	1	EXCELLENT
1	10	4	4	4	4	4	0.031	1	EXCELLENT
1	11	4	3	3	4	4	0.031	1	EXCELLENT
1	12	4	4	4	4	4	0.031	1	EXCELLENT
1	13	4	4	4	4	4	0.031	1	EXCELLENT
1	14	4	4	3	4	4	0.031	1	EXCELLENT
1	15	4	4	3	4	4	0.031	1	EXCELLENT
1	16	4	4	4	4	4	0.031	1	EXCELLENT
1	17	4	4	2	4	4	0.156	0.76	EXCELLENT

1	18	4	4	4	4	4	0.031	1	EXCELLENT
1	19	4	4	4	4	4	0.031	1	EXCELLENT
1	20	4	4	2	4	4	0.156	0.76	EXCELLENT

DIGITAL CURRENCY	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	Pc	KAPPA	INTERPRETATION
2	1	4	4	3	4	4	0.031	1	EXCELLENT
2	2	4	4	1	1	1	0.313	0.12	REMOVED
2	3	4	4	2	4	4	0.156	0.76	EXCELLENT
2	4	4	4	4	4	4	0.031	0.76	EXCELLENT
2	5	4	4	3	4	4	0.031	0.76	EXCELLENT
2	6	4	4	3	4	4	0.031	0.76	EXCELLENT
2	7	4	4	4	4	4	0.031	0.76	EXCELLENT
2	8	4	4	2	4	4	0.156	0.76	EXCELLENT
2	9	4	4	4	4	4	0.031	0.76	EXCELLENT
2	10	4	4	4	4	4	0.031	0.76	EXCELLENT
2	11	4	4	2	4	4	0.156	0.76	EXCELLENT
2	12	4	4	3	4	4	0.031	1	EXCELLENT
2	13	4	4	3	4	4	0.031	1	EXCELLENT
2	14	4	4	3	4	4	0.031	1	EXCELLENT
2	15	4	4	3	4	4	0.031	1	EXCELLENT
2	16	4	4	3	4	4	0.031	1	EXCELLENT
2	17	4	4	4	4	4	0.031	1	EXCELLENT
2	18	4	4	4	4	4	0.031	1	EXCELLENT
2	19	4	4	4	4	4	0.031	1	EXCELLENT
2	20	4	4	4	4	4	0.031	1	EXCELLENT

DIGITAL WELL-BEING	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	Pc	KAPPA	INTERPRETATION
3	1	4	4	3	3	2	0.156	0.76	EXCELLENT
3	2	4	4	2	2	1	0.313	0.12	REMOVED
3	3	4	3	2	3	2	0.313	0.41	REMOVED
3	4	4	2	3	2	1	0.313	0.12	REMOVED
3	5	4	2	1	2	2	0.156	0.05	REMOVED
3	6	4	2	3	2	1	0.313	0.12	REMOVED
3	7	4	3	4	4	4	0.031	1	EXCELLENT
3	8	4	2	2	4	3	0.313	0.41	REMOVED
3	9	4	3	4	4	4	0.031	1	EXCELLENT
3	10	4	3	3	4	4	0.031	1	EXCELLENT
3	11	4	2	3	4	4	0.156	0.76	EXCELLENT
3	12	4	3	3	4	2	0.156	0.76	EXCELLENT
3	13	4	1	2	3	1	0.313	0.12	REMOVED

3	14	4	2	3	4	2	0.313	0.41	EXCELLENT
3	15	4	3	3	4	2	0.156	0.76	EXCELLENT
3	16	4	3	3	4	2	0.156	0.76	EXCELLENT
3	17	4	3	3	4	4	0.031	1	EXCELLENT
3	18	4	3	4	4	4	0.031	1	EXCELLENT
3	19	4	4	3	4	4	0.031	1	EXCELLENT
3	20	4	3	4	4	2	0.156	0.76	EXCELLENT

For the Probability of chance agreement and Kappa statistics result, all of the items from digital literacy are above 0.74, which means all items are excellent. On the other side, 1 item (2) from digital currency and 7 items (1, 2, 3, 4, 5, 8, and 13) from digital well-being did not meet the excellent result from the evaluation criteria, which means the items will be removed or changed.

Table 6: Content validity ratio (CVR)

DIGITAL LITERACY	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	A	CVR	INTERPRETATION
1	1	4	4	4	4	4	5	1	RETAIN
1	2	4	4	4	4	4	5	1	RETAIN
1	3	4	4	4	4	4	5	1	RETAIN
1	4	4	4	4	4	4	5	1	RETAIN
1	5	4	4	4	4	4	5	1	RETAIN
1	6	4	4	3	4	4	5	1	RETAIN
1	7	4	4	4	4	4	5	1	RETAIN
1	8	4	3	3	4	4	5	1	RETAIN
1	9	4	4	4	4	4	5	1	RETAIN
1	10	4	4	4	4	4	5	1	RETAIN
1	11	4	3	3	4	4	5	1	RETAIN
1	12	4	4	4	4	4	5	1	RETAIN
1	13	4	4	4	4	4	5	1	RETAIN
1	14	4	4	3	4	4	5	1	RETAIN
1	15	4	4	3	4	4	5	1	RETAIN
1	16	4	4	4	4	4	5	1	RETAIN
1	17	4	4	2	4	4	4	0.6	REMOVE
1	18	4	4	4	4	4	5	1	RETAIN
1	19	4	4	4	4	4	5	1	RETAIN
1	20	4	4	2	4	4	4	0.6	REMOVE

DIGITAL CURRENCY	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	A	CVI	INTERPRETATION
2	1	4	4	3	4	4	5	1	RETAIN

2	2	4	4	1	1	1	2	-0.2	REMOVE
2	3	4	4	2	4	4	4	0.6	REMOVE
2	4	4	4	4	4	4	5	1	RETAIN
2	5	4	4	3	4	4	5	1	RETAIN
2	6	4	4	3	4	4	5	1	RETAIN
2	7	4	4	4	4	4	5	1	RETAIN
2	8	4	4	2	4	4	4	0.6	REMOVE
2	9	4	4	4	4	4	5	1	RETAIN
2	10	4	4	4	4	4	5	1	RETAIN
2	11	4	4	2	4	4	4	0.6	REMOVE
2	12	4	4	3	4	4	5	1	RETAIN
2	13	4	4	3	4	4	5	1	RETAIN
2	14	4	4	3	4	4	5	1	RETAIN
2	15	4	4	3	4	4	5	1	RETAIN
2	16	4	4	3	4	4	5	1	RETAIN
2	17	4	4	4	4	4	5	1	RETAIN
2	18	4	4	4	4	4	5	1	RETAIN
2	19	4	4	4	4	4	5	1	RETAIN
2	20	4	4	4	4	4	5	1	RETAIN

DIGITAL WELL-BEING	ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	A	CVR	INTERPRETATION
3	1	4	4	3	3	2	4	0.6	REMOVE
3	2	4	4	2	2	1	2	-0.2	REMOVE
3	3	4	3	2	3	2	3	0.2	REMOVE
3	4	4	2	3	2	1	2	-0.2	REMOVE
3	5	4	2	1	2	2	1	-0.6	REMOVE
3	6	4	2	3	2	1	2	-0.2	REMOVE
3	7	4	3	4	4	4	5	1	RETAIN
3	8	4	2	2	4	3	3	0.2	REMOVE
3	9	4	3	4	4	4	5	1	RETAIN
3	10	4	3	3	4	4	5	1	RETAIN
3	11	4	2	3	4	4	4	0.6	REMOVE
3	12	4	3	3	4	2	4	0.6	REMOVE
3	13	4	1	2	3	1	2	-0.2	REMOVE
3	14	4	2	3	4	2	3	0.2	REMOVE
3	15	4	3	3	4	2	4	0.6	REMOVE
3	16	4	3	3	4	2	4	0.6	REMOVE
3	17	4	3	3	4	4	5	1	RETAIN
3	18	4	3	4	4	4	5	1	RETAIN
3	19	4	4	3	4	4	5	1	RETAIN
3	20	4	3	4	4	2	4	0.6	REMOVE

For the result of digital literacy, out of 20 items 2 of the items (17, and 20) have been removed. 4 items (2,3,8 and 11) from digital currency, and most of the items from digital well-being (1, 2, 3, 4, 5, 6, 8,11,12,13,14,15,16, and 20) have been removed, and the rest of the items are retained. Removed items should be revised or changed.

CONCLUSION AND RECOMMENDATION

In conclusion, it is evident that the assessment tool exhibits strong validity in assessing digital fluency, also adjustments are necessary for items related to digital literacy, digital currency, and digital well-being, to ensure their alignment with the evaluation criteria, thus enhancing the overall effectiveness of the instrument. and it's crucial to ensure that each item in the assessment accurately reflects the intended criteria for evaluation. This might involve revising existing items or even removing some if they don't contribute effectively to the assessment's goals.

Moreover, significant revisions may be necessary for items related to digital well-being to ensure they capture all relevant aspects and provide a more comprehensive evaluation. By making these adjustments, the overall effectiveness and relevance of the assessment tool can be significantly enhanced, providing a more accurate measure of digital fluency and related competencies. Therefore, to improve the relevance of each item, it is recommended that some items be revised or eliminated, as well as significant revisions for items related to digital well-being, to enhance their alignment with evaluation criteria, ensuring a more comprehensive and accurate assessment tool.

References

- Briggs, C., & Makice, K. (2011, February 05). The Difference Between Digital Literacy and Digital Fluency. Retrieved from <http://www.socialens.com/blog/2011/02/05/the-difference-between-digital-literacy-and-digital-fluency/>
- Cain, K., & Coldwell-Neilson, J. (2024). Digital fluency –a dynamic capability continuum. *Australasian Journal of Educational Technology*, 2024, 40(1), 42–56.
<https://doi.org/10.14742/ajet.8363>
- Demir, K., & Odabaşı, H.F. (2022). Development of digital fluency scale: Validity and reliability study. *Themes in eLearning*, 15, 1-20.
- Fulgence, K. (2020). Developing Digital Fluency among Teacher Educators: Evidence from Tanzanian Schools of Education, Dar es Salaam University College of Education. *International Journal of Education and Development using Information and Communication Technology*. 16(2), 158-175.
- Hampel, K., & Kunze, F. (2023). The older, the less digitally fluent. The role of age stereotypes and supervisor support. *Work, aging and retirement*, 9(4), 393-398.

Heinz, J. (2016). Digital Skills and the Influence of Students' Socio-Economic Background. An Exploratory Study in German Elementary Schools. *Italian Journal of Sociology of Education*, 8(2), 186-212. doi: 10.14658/pupj-ijse-2016-2-9

Jwmars. (2014). What is digital currency? In Palgrave Macmillan eBooks.
<https://doi.org/10.1057/9781137382559.000>

Le, D., & Pole, A. (2022). Beyond learning Management Systems: Teaching digital fluency. *Journal of Political Science Education*, 19(1), 134–153.
<https://doi.org/10.1080/15512169.2022.2139268>

Mariscal, J., Mayne, G., Aneja, U., & Sorgner, A. (2019). Bridging the gender digital gap. *Economics : The Open-Access, Open-Assessment e-Journal*, 13(1).

Niessen, S. (2015). What is Digital Fluency? ResearchGate.
<https://doi.org/10.13140/RG.2.1.3412.2960>

Teo, T. (2015). Do digital natives differ by computer self-efficacy and experience? An empirical study. *Interactive Learning Environments*, 24(7), 1725-1739.

Wang, R., Wiesemes, R. & Gibbons, C. (2012). Developing digital fluency through ubiquitous mobile devices: Findings from a small-scale study. *Computers & Education*, vol. 58, no. 1, pp. 570–578. doi:10.1016/j.compedu.2011.04.013.

Yu, L. T. (2014). The Computer Literacy and Use: The Case of Taiwanese Pre-service Elementary School English Teachers. *International Journal of English Language Education*, 2(1), 128-142. <https://doi.org/10.5296/ijele.v2i1.4897>