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Access to Digital Media and Digital Literacy among Ghanaian Youth: An Explore, Engage, Empower Model Study

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ABSTRACT

Across Africa, increased availability of mobile devices and internet connectivity means that more young people can participate in digital spaces. Yet media access and use are not universal either across the continent or within countries. Indeed, as the euphoria around technological advancements wanes, researchers and policymakers recognise that technology has the capacity to exacerbate social and other inequalities. This paper problematises the capacity of under-served African youth to effectively use media, given scholarship that suggests that frequent media use enhances digital literacy capacity. It makes use of a quantitative approach by surveying students in senior high schools using a multi-stage sampling approach and draws on the explore, engage, empower (EEE) model to examine young people's access to digital spaces and how this shapes the acquisition of digital literacy skills. The findings from a nationwide survey of senior high school students in Ghana, using a newly developed media and information literacy (MIL) scale, indicate that Ghana's youths have reasonably high levels of access to digital spaces (83 per cent) and that such access is related to their development of specific MIL skills, including competencies of accessing, critically evaluating, and creating and sharing information in digital spaces.

KEYWORDS

digital media access; digital literacy; MIL; explore, engage and empower model; critical media consumption; Ghana

Introduction

Media and information literacy (MIL) has become an essential skill for individuals to navigate and participate in the information society, owing to the proliferation of digital media (Gretter and Yadav 2016). Digital media provide access to vast amounts of information and, as a result, have transformed the ways in which people communicate, work, learn and socialise (Reyna, Hanham, and Meier 2018). This is especially true for young people who were born into/or are growing up in the digital era (Martinovic et al. 2019). At the same time, the digital world affords young people avenues for self-expression, learning and social engagement (Gilhooly and Lee 2014). Around the world, young people have taken advantage of the affordances of digital media to forge relationships (Martinovic et al. 2019), exercise voice (Suwarto, Setiawan, and Machmiyah 2022) create and leverage

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economic opportunities (Darvin 2018), create and project their personal identities and brands (Blummer 2008) and engage in civic discourse and action (Moon and Bai 2020).

Yet the digital space does not always portend well for young persons. It presents several challenges that call for attention, including exposure to extremist content (Grizzle, Tornero, and Manuel 2016; Schmuck et al. 2022), misinformation (Diepeveen and Pinet 2022), malinformation, disinformation (Howard et al. 2021) and cyberbullying (Park, Na, and Kim 2014) among others. It is not surprising, therefore, that media and communication stakeholders advocate for MIL training to be included in school curricula (Adjin-Tettey 2022; Mutsvairo and Bebawi 2019; Ocloo, Ayisi, and Oye 2022). As young people are more likely than adults to adopt new technologies (UNESCO 2011), scholars believe that MIL is critical to empowering young people with the requisite skills to thrive in an increasingly ubiquitous digital ecology (Frau-Meigs 2017).

UNESCO (2011) defines MIL as a set of competencies that enables individuals to access, evaluate and use information effectively and responsibly in a range of contexts. More recent scholarship situates MIL within specific socio-cultural contexts and defines it as the ability to access, analyse, evaluate, create and communicate information in a variety of formats, as well as to understand and engage with the social, cultural and ethical issues surrounding information and communication (Grizzle et al. 2021). However it is defined, MIL retains an emphasis on the development of the individual's critical thinking and communication skills to enable them to effectively navigate the complex and enormous (digital) media ecosystem. These definitions also foreground the centrality of the individual's ability to access, evaluate and create messages in a responsible and ethical manner, while also being cognisant of the social, cultural and political contexts in which media and information are produced, shared and consumed. Implicit in these definitions is the need for lifelong learning and continuous development of MIL skills, owing to the rapidly evolving digital media landscape.

In Africa where the youth population is expected to double by 2050 (Agence Française de Développement 2019), MIL is especially critical as young people on the continent face unique challenges related to limited access to information and technology and information disorder (Adjin-Tettey and Garman 2022). A study by Lai and Widmar (2021) found that MIL interventions, particularly in the Global South, can help bridge the digital divide by improving digital skills and reducing digital inequalities between rural and urban populations.

This study problematises the link between disparities in access to digital technologies and the acquisition of MIL skills among Ghana's youth. It argues that improved access shapes young people's MIL. With the term "access", we signal both the *availability* of digital technologies to young people and the *ability* of young people to locate information from relevant spaces. Using this operationalisation, we explore how the interplay between these two layers of access is related to young people's evaluative and content creation skills within digital spaces. The study was guided by a quest to understand:

- how accessible digital devices and spaces are to Ghana's youth;
- how access to digital spaces shapes young people's capacity to critically evaluate information;
- how access to digital spaces shapes young people's capacity to create content and share content in digital spaces.

A background on the MIL ecosystem in Ghana

Ghana enjoys a vibrant plural media environment across a network of over 500 radio stations, 100 TV stations (The National Communications Authority 2022) and several newspapers. The internet penetration rate in the country stands at 75 per cent as of June 2022. Ghana has around 8.8 million social media users, with WhatsApp being the most used social media platform (datareportal.com). The country registered approximately 24.06 million internet users in 2023, a growth from the 23 million reported in the previous year (Sasu, 2024).

The pluralistic media and information environment has been hailed as a key contributor to Ghana's democratic success story (Media Foundation for West Africa, n.d.). Access to mainstream information is easy, as media organisations strive to outdo each other and "tell it first". From a policy standpoint, in 2019 Ghana promulgated a Right to Information Act (RTI Act, 2019; Act 989) to increase citizen access to information. The RTI Act provides a legal framework for the implementation of the constitutional right to access information from public institutions (Adjin-Tettey 2023). Overall, the liberal environment of Ghana's Fourth Republic has dramatically changed people's access to information and ability to participate in public discourses, particularly in digital spaces.

However, people need relevant skills for accessing, evaluating and using information effectively: "we live in a world where the quality of information we receive largely determines our choices and ensuing actions" (Grizzle et al. 2011, 11). This is especially so as the media and the information they provide are neither neutral nor sacrosanct.

Immersed within this media and information ecology are Ghanaian youth, who are active consumers of media, particularly digital media. Research published by the DW Akademie shows that more than 40 per cent of young Ghanaians use media on a daily basis (Reineck and Krumm 2020). They are also heavy social media users, favouring WhatsApp, Facebook and Snapchat (in descending order). Inevitably, along with the advantages this access confers, Ghana's youths are subject to misinformation, trolling, cybercrime, cyberbullying and pornography. As content creators and sharers, they also risk sharing sensitive information or putting themselves at the receiving end of danger from what they post (Amponsah and Okyere 2023; Burrell 2012).

The challenges encountered within the current media and information ecology require young people to be adequately equipped with MIL skills. However, the curricula for basic and secondary education only tangentially address MIL, through courses such as information and communication technology and social studies. How far the curriculum extends to cover MIL is, often, dependent on teachers' ingenuity (Ocloo, Ayisi, and Oye 2022). Additionally, research into how well universities are prepared to teach information literacy suggests that MIL programmes face numerous challenges. These include universities' lack of commitment, understanding and resources (Dadzie 2007).

Institutions such as United Nations Educational, Scientific and Cultural Organization (UNESCO), the University of Ghana (UG)'s Department of Communication Studies, Penplusbytes, and the DW Akademie among others are at the forefront of enhancing MIL education and uptake in Ghana. For instance, in 2020 the UG Department of Communication Studies launched a MIL campaign to educate Ghanaians about better media and

information practices in the lead-up to the nation's general elections.[1] Penplusbyte's Media Literacy Hub website hosts quizzes and educational materials on MIL to aid visitors' learning[2] while DW Akademie (the media development arm of DW) has used a video contest to get young people to be more aware of their media habits.[3] Other interventions include engagements with teachers of secondary schools, MIL quizzes[4] and youth capacity-building sessions. There is also a growing research interest in the field as student dissertations begin to focus on MIL issues.

These efforts to incorporate MIL into school curricula are hampered by low interest and poor resources (Dadzie 2007). Even though there is a wealth of material available on MIL, young people face significant barriers to accessing it. Technology access remains a challenge, in particular due to limited internet bandwidth. Young people also face challenges with insufficient information materials in the library, information overload, the high cost of books and other information resources and information illiteracy (Ankamah, Gyesi, and Anaman 2021).

At the global level, concerns have also been raised about the focus in MIL discourse on personal responsibility. Besides the risk of instilling individuals with a false sense of confidence in their abilities, there is also the question of the advisability of placing the onus of monitoring media effects on the audience, rather than on media creators, social media platforms or regulators (Bulger and Davison 2018). Given the limited capacity of policy to both promote MIL and to monitor and address negative media effects, it is critical that individuals develop the necessary skills to navigate the complex media space. This forms the basis of our interest in young people's MIL.

Digital media access and MIL: an explore, engage empower model view

This study draws on the explore, engage, empower (EEE) model of MIL (Alagaran II 2015) to understand how the development of critical skills for navigating digital media accrues from the extent of one's access to digital media. The EEE is a process framework to aid the understanding and practice of MIL. The model classifies MIL competencies into three practical applications: explore, engage and empower (Alagaran II 2015).

Proponents of the model argue that these encompass the full breadth of critical competencies that people need in the digital age (Park 2017). First, individuals need the capacity to *explore* digital media, a need which combines (a) physical access to the necessary devices and infrastructures, and (b) the ability to play within the space (Alagaran II 2015). The *explore* competency in the model refers to identifying, accessing and retrieving information and media content using different skills and techniques such as how to create an email message or how or create and share a message on WhatsApp. It also calls for functional skills in using technology to perform activities such as locating information. Access to digital media therefore is an important prerequisite

[1] https://sics.ug.edu.gh/news/department-communication-studies-launches-media-and-information-literacy-project-%E2%80%9Cyouth-media
[2] https://www.themedialiteracyhub.org/
[3] https://akademie.dw.com/en/video-contest-spreads-mil-awareness-in-ghana-and-namibia/a-50923100
[4] https://sics.ug.edu.gh/news/news-update-%E2%80%9Cspot-fake%E2%80%9D-quiz-during-media-and-information-literacy-mil-week-celebration-2019

component of the ability to explore. In the digital era, access to digital devices and (at least some) digital literacy skills are critical competencies that Ghanaian youths must have. In today's world, therefore, the *explore* group of MIL competencies, to a large extent, connotes access to digital devices and spaces.

The *engage* class of competencies is composed of critically analysing and evaluating media and information content. This involves being able to closely examine the content with respect to issues such as racial, religious, gender and ethnic representations. It also involves understanding the media and how it frames issues, as well as being able to decode messages. The *engage* competency also requires that users are able to assess media and information content for credibility.

As a model that demonstrates the progression of skills, the EEE model identifies empowerment as the last class of competencies. The *empower* construct involves competencies such as creating or producing media and information content, and sharing and using information and media content in an ethical, safe and responsible manner leading to decision-making and action-taking. Creators are empowered through their expression of self and their viewpoint. In this sense, the empowerment competency is the ultimate dependent variable in the EEE model.

Guided by this model, the study tests the nature of the relationships between the three constructs (explore, engage and empower). It operationalises the explorative competency to mean access to digital media (i.e. the opportunity to explore, which is a function of one's access). The engagement competency is operationalised as the capacity for critical evaluation of digital media and content, while empowerment is tested as the capacity to create and share content in digital spaces.

Methodology

Given the study's interest in measuring youths' MIL levels and determining its spread, a quantitative approach was deemed suitable. A survey of students in senior high schools was used to gather the data. A multi-stage sampling approach was used to select five senior high schools in Ghana from which the sample was drawn. First, a simple random technique was used to select five out of the 630 senior high schools in the country as of 2019 (Ministry of Education programme-based budget, 2019). The names of all 630 senior high schools were uploaded into an SPSS file and a random number generator was used to select five of them as our empirical sites. From each school, a sample of 120 students (40 from each year group) was taken. Across the five schools, this resulted in a sample size of 600, representing about 0.5 per cent of the estimated one million secondary school population at the time (GNA 2024). This sample size is considered adequate (at $\leq$5 per cent risk of sampling error) (Yamane 1967).

Student records were obtained from the school administration and used as the sampling frame. For each year group, a simple random selection of four programme streams was used to identify the classes from which students should be selected. This was followed by a systematic selection of 10 students from each of the four selected programmes using the formula N = Number of students in a year group offering the programme divided by 10 (number of students to be selected from programme). Ultimately, 598 surveys were collected from respondents, with near gender parity (52 per cent male and 48 per cent female).

While an existing, validated scale for assessing MIL levels was preferred, our search of the extant literature did not yield any published and accessible scales. The sole work we found that included a quantitative measure of MIL was that by Lopes, Costa, Araujo and Ávila (2018) titled "Measuring media and information literacy skills: Construction of a test". However, the full scale was not accessible to the public. Under the circumstances, our only option was to develop our own standardised measure of the construct following appropriate psychometric processes. As a first step, we relied on extant conceptualisations of the construct to define its scope and dimensionality as well as indicators for the various dimensions. Thereafter, a team of information, media and communication scholars who are familiar with the construct assessed the extent to which the measure developed appeared to measure what it was supposed to measure (face validity).

Two pilot studies were conducted to test the instrument: the first pilot study was conducted with data gathered from 34 masters in communication studies students at the University of Ghana. A second pilot study involved a survey of a convenient sample of Ghanaians ($N = 340$). Analysis of these two rounds of data enabled a fine-tuning of the standardised test used to measure MIL. Besides this, care was taken to assess the internal properties of the construct measures.

The instrument for data collection was a structured questionnaire which was self-administered to the respondents, who were all literate. The language of the instrument was English and was kept simple to ensure that it was reader-friendly. With one exception (access to digital media measured nominally with a question for respondents to indicate whether they have access to a digital device, and the internet, when not in school), all substantive study constructs were measured using an objective test consisting of right and wrong answers. The test was developed using items created from a first round of research comprising a review of conceptual definitions of MIL and formative interviews.

Regarding the ability to access media, we used four items asking respondents to choose, from a list of options, the correct way to locate information for a given scenario. The scenarios were: the most appropriate place to seek information on a particular university's admissions; the most authoritative information on the history of Ghana, the most appropriate place to seek clarification on a class assignment; and in what situations they would not need to seek information. To assess their evaluative skills, we used five items through which respondents demonstrated their capacity for distinguishing fact from fiction, understanding the latent and manifest meanings of texts, deciphering intentions behind a social media post, and identifying missing perspectives from a story (from a fairness and balance viewpoint) amongst others. Finally, to measure their creative skills, respondents were tasked to identify the correct steps in making a social media post, sending an email, formulating a WhatsApp broadcast message, creating a video file and creating a Microsoft Word document.

A member of the research team and a trained graduate field assistant visited each school to conduct the data collection, after having secured approval from the national, regional, district (in some cases) and school heads of the Ghana Education Service.

Findings

The study sought to assess how media and information literate Ghanaian youths are and to examine the relationship between the access to digital spaces and MIL competencies—

critical evaluation and creation. This section details the evidence gathered, beginning with details about young people's access to digital devices and spaces.

Ghanaian youth's access to digital devices and spaces

In the first instance, the study sought to establish the levels of access that the sampled youths had to digital devices. The analysis revealed very high levels: eight out of every 10 respondents (83 per cent) reported having access to a digital device when not in school.

However, this access is nuanced in terms of the specific types of digital devices. As Figure 1 shows, nearly 70 per cent of the respondents indicated that they did not have ready access to computers outside of school. In other words, for every 10 respondents, about seven do not have access to a computer when not in school. Access to tablets is even more limited. As Figure 2 shows, over 85 per cent of respondents (eight in every 10) do not have access to tablets.

In sharp contrast, access to smartphones is very high. Figure 3 shows that out of every 10 respondents sampled, eight indicated that they have access to smartphones outside of school. Thus, it would appear that the generally high level of access to digital devices recorded is actually a function of access to smartphones.

In contrast to the high (83 per cent) levels of access to digital devices, access to the internet is much lower. Only a fifth of respondents (22 per cent) indicated that they have access to the internet outside of school. Internet access is much better in school, though not to a great extent. About 40 per cent of respondents indicated they have access to the internet while in school. However, that means that the majority—60 per cent—do not have access to the internet outside of school (Table 1). Whereas eight out of every 10 respondents have access to digital devices, when it comes to the internet only four out of every 10 respondents have access. This means that a good number of Ghana's school-going youths are living outside of the connected world (Table 2).

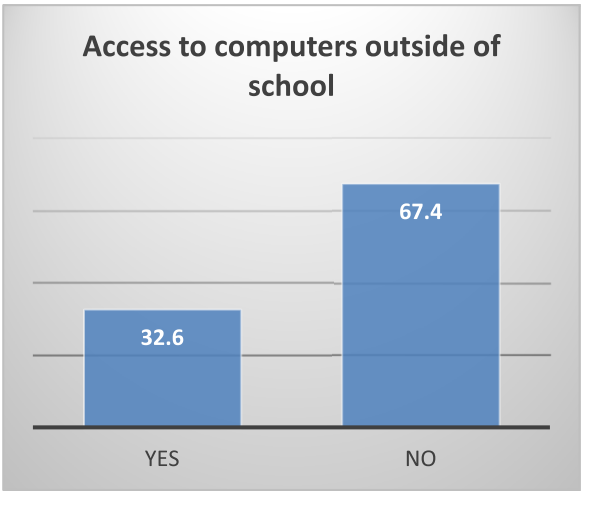

Figure 1. Access to computers outside of school.

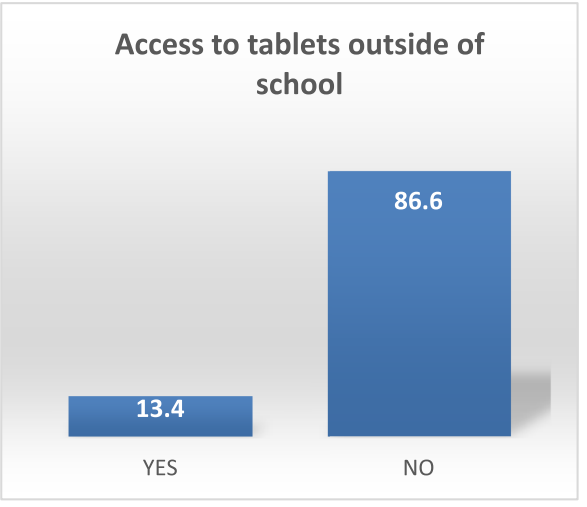

Figure 2. Access to tablets outside of school.

Further, the study found that connectivity in schools is dependent on the class of school. The Ghana Education Service ranks senior high schools according to the level of resources available in the school, as Category A, B, C or D in descending order. Per our findings, the higher the class of school, the better the connectivity students have (Table 3). For instance, while about 40 per cent of Grade A school students have access to the internet while in school, only half of that number (21 per cent) is recorded for grade B schools. This was followed in decreasing order by students in Grades C and D schools (16 and 7 per cent, respectively).

As explained in the methodology section, our interest in the access variable is two-fold. Besides access as a means to an end, we also explore it as a capacity variable. We sought to gauge the capacity of respondents to make decisions about the right places to look for information and to know where to look. Respondents were given scenarios in which to determine (1) the most appropriate place to seek information on university admissions,

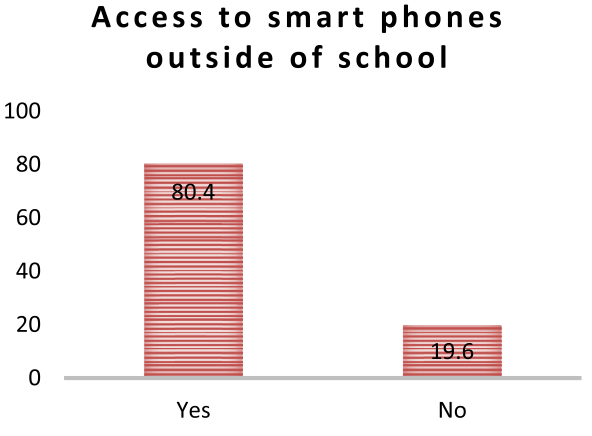

Figure 3. Access to smartphones outside of school.

Table 1. Access to digital devices.

Digital device ownership	Frequency	Per cent
Yes	496	82.9
No	102	17.1
Total	598	100.0

Table 2. Access to the internet.

Access to internet	When in school		When not in school	
	Frequency	Percent	Frequency	Percent
Yes	131	21.9	245	41.1
No	466	78.1	351	58.9
Total	597	100.0	596	100.0

Table 3. Access to internet in school and school classification.

Internet access in school	Classification of schools				Total
	Category A	Category B	Category C	Category D	
Yes	56	48	19	8	131
	43.1%	21.1%	15.7%	6.8%	21.9%
No	74	180	102	110	466
	56.9%	78.9%	84.3%	93.2%	78.1%
Total	130	228	121	118	597
	100.0%	100.0%	100.0%	100.0%	100.0%

(2) the most authoritative information on the history of Ghana, (3) the best way to seek clarification on a class assignment and (4) under what circumstances they would not need to search for any information externally.

As the evidence in Figure 4 shows, respondents were better able to determine where to seek information about university admissions than any of the other tasks. The task recording the lowest performance involved determining where to seek clarification on

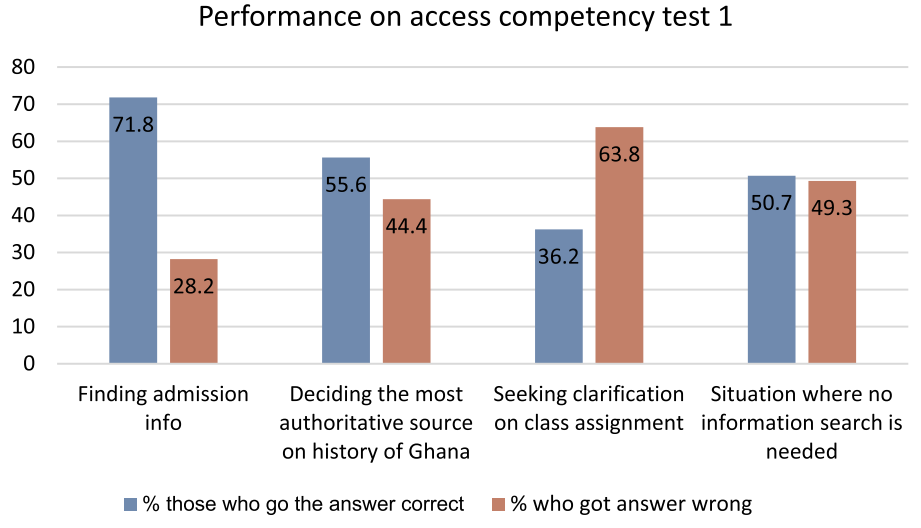

Figure 4. Performance on access competency test 1.

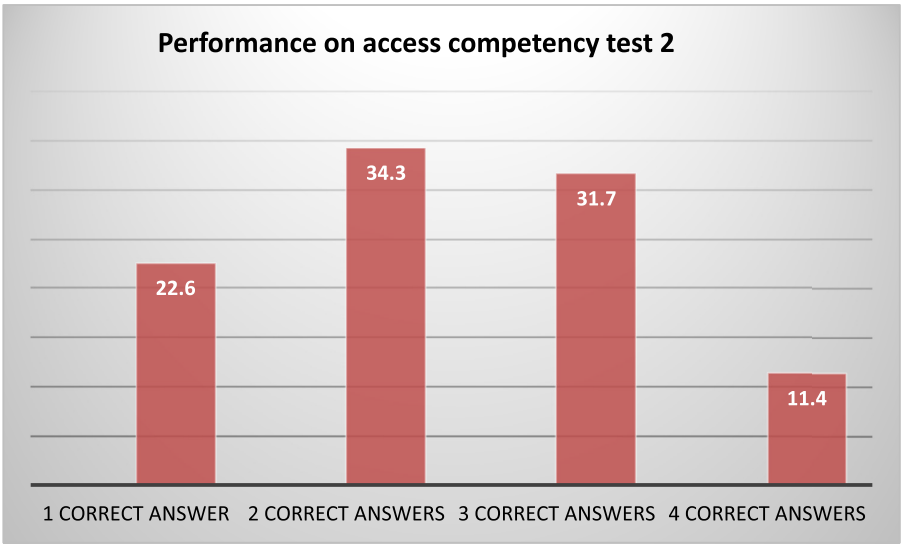

Figure 5. Performance on access competency test 2.

a class assignment. Interestingly, half of the respondents could not differentiate between situations that required information search and those that did not.

Overall though, the study's findings point to a low general capacity for accessing information among respondents. Only 11 per cent of respondents scored correct on all four questions. The remaining 89 per cent scored between one and three items correctly. Indeed, one in every five respondents (22 per cent) answered only one question correctly (Figure 5).

Links between access and capacity to evaluate and create content in digital spaces

The study also examined the implications of young people's access to digital spaces. First, it sought to establish whether more access results in an improved capacity for critically evaluating content they encounter within digital spaces. This was based on the EEE premise that exploration engenders engagement. In other words, having access to explore should enable individuals to become more savvy about the affordances and threats in digital spaces.

To validate this premise, the study first assessed respondents' capacity to critically evaluate material in digital spaces. A five-item test required respondents to decipher (1) the main purpose of an advertisement, (2) the potential effect of a given social media post on people, (3) a missing piece that could make a given news story balanced, (4) the key message in a given infographic and (5) two things about a given photo that made it potentially fake.

Respondents generally fared well on this test, with the item scored least correctly recording at least 60 per cent of respondents. They were better able to identify fake photos (94 per cent) and the potential impacts of a given social media post on people (80 per cent). There was near parity in the numbers who scored the remaining test items correctly (Figure 6).

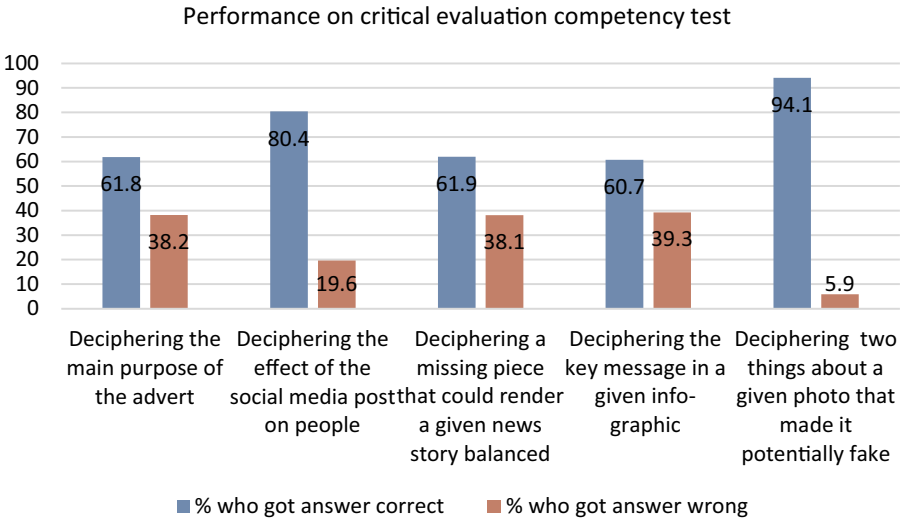

Figure 6. Performance on critical evaluation competency test.

The study found that respondents had slightly better capacity for evaluating information online. Eighteen per cent of respondents scored correct on all five test items. This represents seven per cent more than the number recorded for the capacity for accessing information. Those who scored only one answer correctly represent less than five per cent of respondents, whereas the result for access competency was over 20 per cent (Figure 7).

Regarding whether access enhances critical evaluation capacity, a regression model was computed using access to devices, and access to the internet in school and out of school, as predictors. As Tables 4 and 5 show, the model estimated explains about

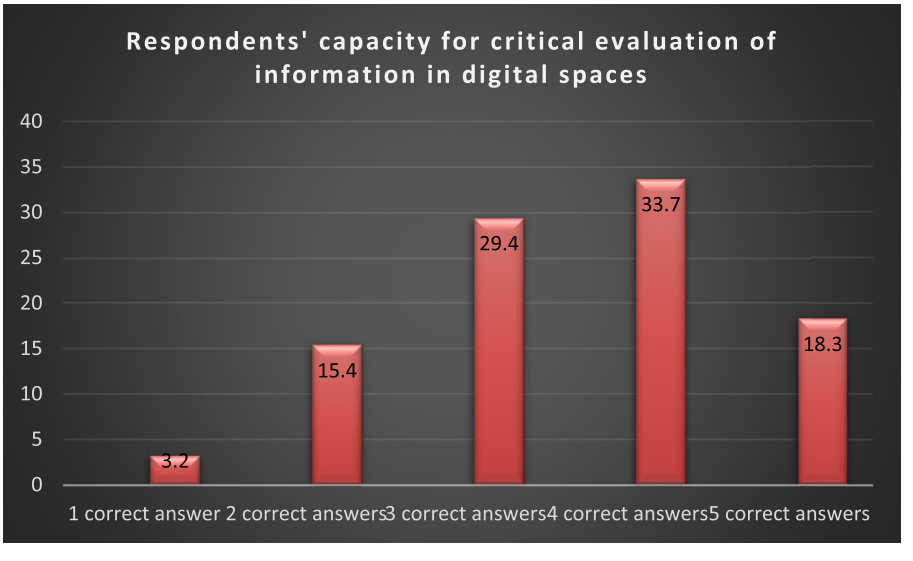

Figure 7. Respondents' capacity for critical evaluation of information in digital spaces.

Table 4. Model summary on links between access to digital tools and critical evaluation skills.

Model	R	R^2	Adjusted R^2	Std. error of the estimate
1	.275a	.076	.071	1.01893

a. Predictors: (constant), access to digital device, access to the internet.

Table 5. Report on the analysis of variance (ANOVA) on links between links between access to digital tools and critical evaluation skills[5] and critical evaluation skills.

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	49.709	3	16.570	15.960	.000a
	Residual	607.354	585	1.038		
	Total	657.063	588			

a. Dependent variable: critical evaluation.
b. Predictors: (constant), access to internet out of school; access to internet in school; access to digital devices.

Table 6. Coefficients on links between access to digital tools and critical evaluation skills.

		Unstandardised coefficients		Standardised coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	4.578	.226		20.261	.000
	Internet access out of school	−.553	.090	−.258	−6.151	.000
	Internet access in school	.012	.101	.005	.114	.909
	Digital device access	−.206	.114	−.073	−1.811	.071

Dependent variable: critical evaluation.

seven per cent of variance in the dependent variable (critical evaluation) and was statistically significant (F (3, 585 = 15,960), $p = 0.00$).

The data presents surprising findings. There appears to be an inverse relationship between access to internet out of school and critical evaluation competencies ($B = -.533$; Sig. = .000) (Table 6). This means that the more access respondents have to the internet outside of school setting, the lower their capacity for critical evaluation. In contrast, access to the internet in school appears to boost one's critical evaluation competencies, albeit to a non-significant extent ($B = -.012$; Sig. = .909). In the case of access to digital devices, the study found that its effect on critical evaluation competency is negative, such that the more access there is, the less critical evaluation competency one might show ($B = -.206$; Sig. = .071). Again, this link is not statistically significant. Together, these findings suggest that access by itself does not improve critical evaluation competency. This contradicts extant expectations (Falloon 2020) and suggests that more needs to be done beyond boosting access to empower young people to become conscious and critical in their information consumption within digital spaces.

The study also assessed whether young people's access to digital spaces enhances their capacity to contribute to these spaces by creating and sharing their own content. According to the EEE, exploration yields engagement and empowerment. By this logic, access (or the opportunity to explore) should enable not only engagement skills but also empowerment skills, which we define as the capacity to participate and contribute. Five test items were used to assess the students' creation skills by asking them to identify, from a list of options, the correct steps in (1) making a social media post, (2) creating a video file on a phone, (3) sending an email, (4) creating a WhatsApp broadcast message and (5) using a computer to create a Microsoft Word document. While the

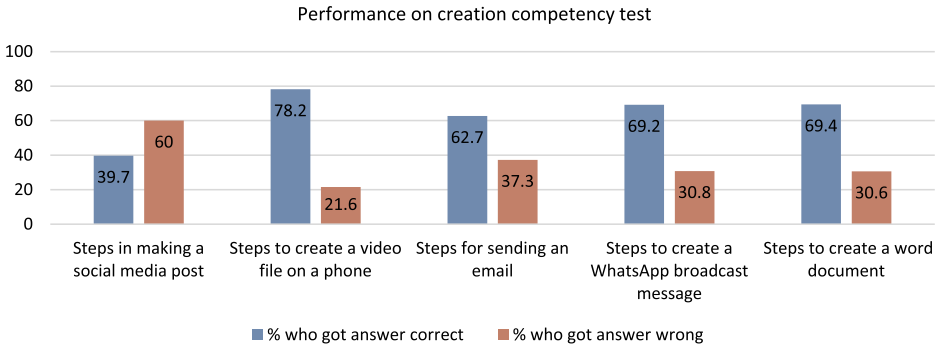

Figure 8. Performance on creation competency.

respondents generally fared well on the test assessing this competency, the scores are much lower than those for critical evaluation. The item with the best performance recorded 78 per cent of respondents. This is in contrast to the 94 per cent that was achieved for critical evaluation. In other words, the study observed that respondents are better at analysing materials in digital spaces than they are at contributing to and participating within digital spaces. The scores on the creation competency test are closer to those on the access competency test, where the best and worst-scored items recorded 72 per cent and 36 per cent respectively (Figure 8). By way of specifics, the study found that respondents were best at using a phone to create a video. This is followed, in order, by their ability to create a Word document, create a message broadcast to contacts, send an email and make a social media post.

Overall, though, the study's findings point to a generally low capacity for creating digital content. Only 10 per cent of respondents scored correct on all five test items. The remaining 90 per cent scored between one and four items correctly, with only one in every 10 respondents (22 per cent) scoring only one question correctly (Figure 9).

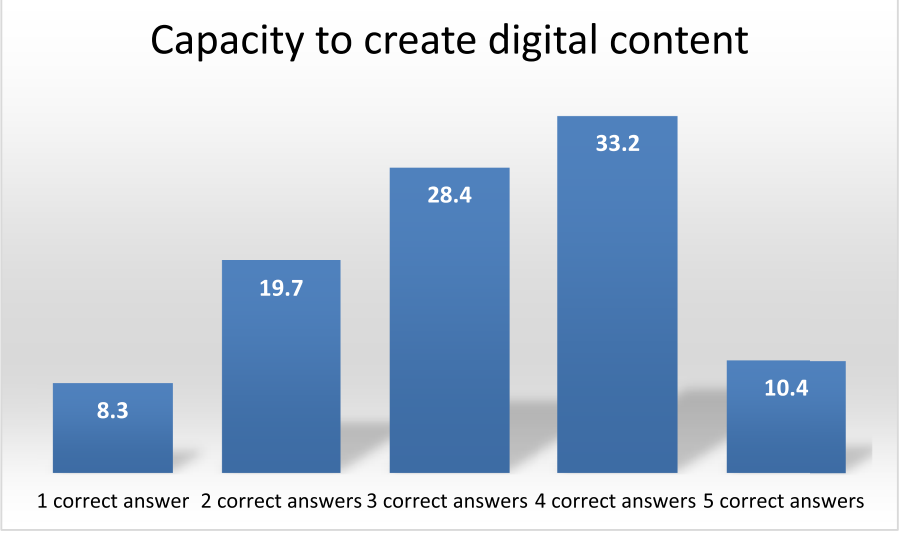

Figure 9. Capacity to create digital content.

Table 7. Coefficients on links between access to digital devices and internet, and critical evaluation skills.

Coefficients[a]					
	Unstandardised coefficients		Standardised coefficients		
Model	B	Std. error	Beta	t	Sig.
(Constant)	4.004	.243		16.505	.000
Access to internet out of school	−.520	.096	−.230	−5.395	.000
Access to internet in school	.193	.109	.076	1.776	.076
access to digital devices	−.304	.124	−.100	−2.445	.015

a. Dependent variable: creating and sharing

Regarding whether access enhances the capacity to create and share content, regression analysis results showed similarly contrasting findings to those reported for the links between access to devices and the internet, and critical evaluation competencies. Access to internet out of school is inversely related to capacity for creating and sharing content in digital spaces ($B = -.520$; Sig. = .000) [Table 7]. The same can be said of access to digital devices ($B = -.304$; Sig. = .015). In other words, the more access respondents had to the internet when out of school, and also to digital devices (which can only occur out of school since such devices are banned in schools), the lower their ability to create and share digital content. On the other hand, access to the internet in school appears to be positively related to the capacity for creating and sharing content in digital spaces. But the relationship is not statistically significant (Table 7). Tables 8 and 9 show, the model estimated explains about six per cent of variance in the dependent variable (critical evaluation) and was statistically significant (F (3, 572 = 12.645), p = 0.00).

Table 8. Model summary on links between access to digital devices and internet, and critical evaluation skills.

Model summary				
Model	R	R^2	Adjusted R^2	Std. error of the estimate
1	.249[a]	.062	.057	1.08493

Predictors: (constant), access to internet out of school; access to internet in school; access to digital devices

Table 9. ANOVA results on links between access to digital devices and internet, and critical evaluation skills.

ANOVA[b]						
Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	44.653	3	14.884	12.645	.000[a]
	Residual	673.285	572	1.177		
	Total	717.938	575			

a. Dependent variable: creating and sharing
b. Predictors: (constant), access to internet out of school; access to internet in school; access to digital devices

Discussion

This study set out to ascertain young people's access to digital spaces in Ghana and the implications of such access for the development of MIL skills—critical evaluation skills and content creation skills. Findings show that when not in school, young people's access to digital devices (phones, tablets, computers) is very high (83 per cent). Mobile phones are the most accessible, followed by computers and tablets, in that order. On the one hand, this signals that young people have a good opportunity to be part of the connected world. However, the evidence of access to the internet belies this point. Both in and out of school, the majority of respondents indicated that they did not have access to the internet. For a nation averaging 68 per cent internet penetration (World Bank 2021), the finding shows that a good number of Ghana's youths are being left behind. And, in being left behind, they miss the opportunity and savviness that familiarity with digital spaces is expected to bring. This is of critical concern as it signals that not only do they not have access to the expansive resources on the internet (Berson and Berson 2003), they are also denied the opportunity for exploration in digital spaces that the EEE imagines will build their engagement skills (Moon and Bai 2020). Adjin-Tettey and Garman (2022) have also alluded to this challenge. In a world that is becoming increasingly connected and digitally driven (Gretter and Yadav 2016) this finding also means that Ghana's youth may not be adequately prepared to succeed in the media and information ecology within which they will spend their productive years.

The findings also suggest, however, that some opportunity may lie in the school system for enhancing the connectivity of Ghana's youths. As the study found, schools present a bigger opportunity for plugging school-going youths into the connected world. Thus, efforts at enhancing the inclusiveness of the cybersphere (Adjin-Tettey 2022; Mutsvairo and Bebawi 2019; Ocloo, Ayisi, and Oye 2022) must seriously consider enhancing connectivity in schools, and in a manner that makes it universally available. Careful thought must, however, go into overcoming existing fault lines of inequality and inequity arising out of current structures in the school system that ensure only students in better endowed schools are assured of connectivity. Irrespective of the class of schools, students should be able to leverage the vast resources online for their academic work (Zhang 2006). Not only does this ensure that the first element of the EEE is addressed through the school system, it also ensures that young people's access to and use of the internet occurs with mediation from teachers or under supervision. Given the generally lax media regulatory space, particularly as regards digital spaces, such mediation may also ensure that young people learn to consume information ethically before they gain full freedom to access content online.

The study's findings also showed that Ghana's youths are generally lagging in their MIL skills. Across tests for access, critical evaluation and creation competencies, less than 15 per cent of respondents managed to score 100 per cent correct. What this means is that a good number struggle with things as basic as using a phone to create a video, sending an email, and deciphering the latent purpose and effects of messages, as well as where to look for certain pieces of information. While the evidence points to a better capacity for critical evaluation than for accessing information, and for creating and sharing content, we believe that, generally, attention needs to be paid to enhancing the MIL of Ghana's youths. The current and envisaged media and information ecology of the future is digitally

driven (Ayamga et al. 2023). For Ghana's youth to be competitive and successful within this ecology, they need to be digital-media savvy (Muchira 2023). In other words, for the true promise of the EEE to be realised, capacity-building efforts must be enhanced through curriculum revisions or extracurricular activities. As Ocloo, Ayisi, and Oye (2022) have noted, the current senior high school curriculum does not adequately address this need.

Whereas one would expect (as suggested by the EEE) that the opportunity to explore (which is operationalised in this study as access; Swart 2023) could enhance MIL capacity (Metherell et al. 2022l; Ozor and Toner 2022), the study's findings suggest a more nuanced and intricate relationship. First, it found that access to the internet out of school is negatively related to critical evaluation and creation competencies. In contrast, access to the internet in school may boost these competencies, albeit to a non-significant extent. We propose that, perhaps, because internet access out of school is often synonymous with minimal adult supervision or mediation (O'Reilly et al. 2023), its use is more casual, leading young people to apply fewer critical and creative skills (ibid). In contrast, internet access in schools is supervised (King and Alperstein 2014), forcing better use practices that eventually lead to the development of critical MIL competencies.

The same logic may explain why increased access to digital devices is negatively related to both critical evaluation and creation competencies. Given that digital devices such as phones and tablets are not allowed in schools, those who reported having access to them could only do so outside of school. Thus, it would appear that, by the same token as that explained above, such access to digital devices, with its lack of adult mediation context, means youths can use them merely for fun, thus losing the opportunity to learn through them. Together, these findings give credence to the call by Bulger and Davison (2018) to not leave the acquisition of MIL skills to chance and personal responsibility. As our study shows, just hoping that by opening digital spaces up to young people they will develop skills for navigating it may be misguided. Indeed, this might lead to a reduction in whatever baseline competencies they may have.

Conclusions, implications and recommendations

The foregoing discussion leads to a number of conclusions. In the first instance, it appears that Ghana's youths have appreciable levels of access to digital spaces through their access to digital devices and to the internet. Importantly, the findings suggest that access by itself does not improve critical evaluation competency, indicating that more needs to be done to complement access to empower young people to become conscious and critical in their information consumption within digital spaces. Thus, access should not be considered an end in itself, as it must be accompanied by requisite levels of MIL training to enable young persons to properly leverage the benefits of the digital sphere. There is a need to actively build the capacity of young people to effectively access information if they are to be able to take advantage of their access to digital devices and the internet to serve any productive interests.

The study's findings also lead to the conclusion that Ghana's youths have differing levels of MIL competencies. Their strongest competency is that of critically evaluating information. This is followed by the capacity for creating and sharing and the capacity for accessing information, in that order. Thus, while capacity building is generally needed, its design must be tailored to focus more on building competencies for accessing

information. This is critical given the evidence that the more adept a person is with lower-order MIL skills, the better they fare with the higher-order competencies. What this means is that efforts to improve the information access competency will yield bonus dividends by enhancing competencies for critical evaluation and for creating and sharing content.

While the EEE model assumes equitable access to effectively "explore", "engage", and "empower" oneself, the data has shown that access is unequal and unevenly distributed, with access in schools having a positive impact. Overall, the findings of this study give credence to the postulates of the EEE model by signalling that when young people have the wherewithal to explore, they also have the opportunity to engage and be empowered through their use of digital devices and access to the internet. In particular, it enhances their development of skills needed for engagement and for empowerment. However, further explorations are needed with regards to our findings relative to the inverse relationship between access to the internet and the development of competencies for effectively accessing information. While we hazard some explanations for this, we believe further and concrete empirics-based explanations are needed. Future scholars should also explore the layered nature of access and its nuanced implications, with consideration for different levels of access around the world. Access is not one-dimensional or uniform. Rather, it appears to be tempered by certain underlying factors such as the class of school. Further research into the demographic and other underpinnings of differing levels of access and their implications is urgently needed if we are to see any success in the effort to make digital spaces more open around the globe. Importantly, we echo the assertion that access is only a means to an end. The clamour to expand access is important in its own right. But perhaps even more critical is giving young people the capacity to effectively participate and thrive in these spaces. This calls for more attention to mainstreaming MIL into school curricula and public discourses. Education policymakers and actors, education-based civil society organisations and educational institutions are therefore encouraged to actively pursue interventions that build the MIL capacities of young people.

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