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Assessing Media and Information Literacy (MIL) Among Undergraduate Students A Pilot Study of Maharaja Agrasen College, University of Delhi

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Abstract: Media and Information Literacy (MIL) is a crucial civic skill in digital societies, yet context-sensitive, grounded studies on Indian higher education students'competencies in MIL are only a few. This pilot study focused on one such gap and laid the groundwork for development and preliminary validation of a MIL questionnaire to address the needs of Indian undergraduate students with reference to UNESCO framework for MIL and Potter's cognitive model. It was administered to 50 students of Maharaja Agrasen College, University of Delhi. For this study, the exploratory diagnostic design focused on the clarity, structure, discriminant ability and conceptual validity of the instrument. Results suggested strong digital access with functional levels of competency in the more complex processes of information searching and organization. However, higher levels of evaluative and participatory literacy in the critical aspects of social and civic engagement with varied civic spheres, advanced verification, and the creation of multimedia resources were absent. The instrument provided strong evidence of face, content, and construct validity in the cognitive, attitudinal, and behavioral domains of literacy. Minor recommendations included removing binary response options, assessing critical AI literacy, and deepening the constructs of verification and civic action. The pilot has limitations of sample size and context but the questionnaire was found to be useful for further studies to measure MIL competencies.

Keywords: Media and Information Literacy (MIL), Media Literacy, Higher education, Prosumer culture, Critical media skills, AI literacy, Media education, Digital Literacy.

Introduction

Digital media are rapidly changing the ways in which young adults find, understand, and share information. As a result, Media and Information Literacy (MIL), within the framework of civic competency, has leapfrogged to the textbook definition of civic competency (UNESCO, 2021). In the current digital environment dominated by algorithms, users are not passive, detached recipients of media content. They are Prosumers, the people who as defined by Jenkins (2006) are the users who simultaneously consume, produce, and distribute media. This participatory culture, as a means of digital expression, is accompanied by the potential for abuse, including disinformation, polarised discourse, and the digital architecture of exploitation (Wardle & Derakhshan, 2017). According to Potter (2013), media literacy is a continuum and, as such, a media attribute is a collection of cognitive functions acquired through practice. But scholars are more concerned about if the contemporary youth are exercising citizenship in a critical way, or if they are simply digital natives with access and no agency or vision.

In India, one of the country's fastest-growing digital economies, the question acquires utmost importance. The IAMAI (2023) report reveals how affordable mobile data plans increased the spread of the digital economy, allowing crores of people to participate in digitally networked forms of news consumption, entertainment, and social expression. However, access to technology does not necessarily imply the ability to meaningfully engage with information. The socio-economic, educational, and, especially, the linguistic divides in the country raise valid concerns over the digital divide, focusing solely on access, as argued by Oxfam India (2022). Furthermore, the body of scholarship on MIL in the Indian higher education landscape focuses heavily on the quantification of media and technology use instead of the more vital aspects of the ethical use and interaction of media, as noted by Kumar (2019). For example, there are no systems in place to facilitate the integration of evaluation and creation of media, as prescribed in the 2016 revision of the Five Laws of Media and Information Literacy by UNESCO. This, instead, remains the ambit of isolated programmes and workshops.

To address the gap in conceptualization and methodologies, the current study does not aim to determine the levels of students' media literacy. It does, however, serve as a practice administration of the newly designed Media and Information Literacy questionnaire aimed at determining the extent to which the items measure the behavioral, perceptual, and attitudinal dimensions of Media and Information Literacy relevant to the Indian undergraduate context. This pilot study is exploratory in nature and tries to determine the clarity, consistency, and discriminant value of the items. It seeks to find if the respondents understand, differentiate, and engage with the question items.

The study looks at respondents not only as data points but also as indicators of questionnaire performance through their response patterns in the areas of information verification, platform preference, misinformation perception, and participatory creation. The insights gained from the respondents are diagnostic and can advance the discourse on Media and Information Literacy in India and help improve the questionnaire for further advance research.

Objectives and Research Questions

The study being an exploratory pilot study, it does not attempt to make final conclusions for Media and Information Literacy levels among undergraduate students. Its primary purpose, rather, is to assess the drafted MIL questionnaire's effectiveness as a diagnostic tool for capturing the behavioral, perceptual, and ethical nuances of awareness across the diverse territories of respondents, along with collecting some primary data on MIL. The questionnaire covers a host of areas and questions ranging from accessibility and preferences of media, verification practices, perceptions of misinformation, and tendencies towards content creation. Therefore, the importance of this pilot is in evaluating if questions in it are useful as intended. This assessment is not confined to a mere count of the responses but also includes clarity and interpretability, the spread of responses, and the section's resistance to social desirability.

Objectives directly related to the purpose of the study

To evaluate respondents' engagement with questionnaire items in order to determine whether or not the items were understood as intended and the degree of confusion, misinterpretation, or patterned acquiescence.
To examine response differences between main areas to determine whether items function and sufficiently provide the necessary conditions for psychometric strength.
To identify the signs of fatigue or redundancy, such as neutral responses, hastiness, or over-choice of socially acceptable responses, which can help in finding potential requirements for restructuring or reorganising the questionnaire.

In the case of this study, the goal was not to make any definitive inferential statements, but rather to determine whether demographic variables such as location, gender, and social category correlate to any variation in disposition allowing towards the suggestion that the tool has contextual sensitivity.
This is to determine whether the balance has been attained in an instrument that includes cognitive (knowledge), behaviour (action), and affective (attitude) elements as would be expected from the theoretical frameworks of MIL, particularly Potter's cognitive model (2013) and the holistic competency approach by UNESCO (2016).

Research Questions

Pilot-focused Research questions

Do the respondents show enough variability across the questionnaire items to support its future use as a discriminative tool in large-scale administration?

Are there any particular items or sections that may result in confusion, noncompliance, or patterned neutrality, suggesting the need for simplification, reorganization, or removal?

Which parts of the questionnaire (e.g., use of the platform, perception of misinformation, verification practices) capture the most engagement, and which parts are more likely to fall prey to social desirability bias or self-report inflation?

Do initial patterns indicate that particular demographic or contextual factors are associated with different orientations toward the MIL, suggesting that the tool is responsive to social positioning?

Does the response pattern within the cognitive, behavioral, and attitudinal spheres support the theoretical justification of the tool, or does it indicate a need for more rebalancing within these areas?

Methodology

Research Design

Here, and for the purpose of this study, a pilot survey design is adopted. The aim is not to make conclusive inferences regarding students' Media and Information Literacy (MIL) levels, but to assess the developed questionnaire tool for clarity, organization, and functional reliability.
The approach taken here is exploratory and diagnostic in nature and is designed to assess patterns of respondent engagement and interpretive repetitiveness and divergence without reference to any predictive or associative statistical relationship. This approach points to best practice in pre-validation and field-testing of survey instruments, as shown by DeVellis (2017).

Participants and Sampling

The pilot questionnaire was administered to undergraduate students of Maharaja Agrasen College, University of Delhi, coming from various social and educational backgrounds and subject streams. Participation was voluntary and was motivated by engagement without incentives. For this stage of the work, the only accessibility here was the use of convenience sampling, or instrument evaluation, and not proportional demographic representation was made. This is because the purpose was not generalisation to a wider population. It was important, however, to collect demographic data such as gender, geolocation (urban/rural), and social category to estimate the degree to which the questionnaire was contextually sensitive and varied across different dimensions of the social identities.

Instrument and Structure

The questionnaire was adapted from UNESCO MIL framework and looked at different themes according to the main pillars of MIL:
Demographic and socio-cultural background
Media access and platform use
Understanding and evaluation of information and verification practices
Perception of Misinformation and Fake News
Content creation, participatory and sharing behaviors

The majority of the items contained closed-ended questions and utilized either multiple-choice or 5-point Likert-type scales. This was done to facilitate the response-entry process and assist in identifying patterns in the data during the pilot analysis. This served as a useful measure of cognitive load and fatigue associated with the questionnaire.

Data Collection

The questionnaire was circulated among undergraduate students of Maharaja Agrasen College, University of Delhi, using Google Forms. It was chosen for its wide accessibility on both mobile and desktop devices. The students received the survey link through their class representatives and teachers. Respondents were allowed to complete the survey at their own pace, and no time limit was set. The responses were time-stamped through Google Forms, and all pertained to July 2024.

Results

Profile of the Respondents

50 respondents participated in the study, out of which 50% were male and 50% female. All respondents were within the 18 to 22 years age bracket, with most frequent ages being 19 and 20 years, 32% each. Most of them were from an urban background, Urban 82%, Rural 12%, Suburban 6%. The respondents' socio-economic profile showed a reasonable balance of lower and lower-middle income respondents. 32% of them were in the below ₹ 1.25 lakh income group, 32% in the ₹ 1.25–5 lakh range, 16% in the ₹5–8 lakh range, and 20% were in the above ₹ 8 lakh income group. The sample had respondents from Maharaja Agrasen College (92%), "Other" colleges (6%), and Bharati College (2%). Other colleges and Bharati College respondents were similar to Maharaja Agrasen College, hence they were not excluded.

Access and frequency of use of media

Availability of devices and connectivity was found to be high. 100% of the respondents use mobile phones, 76% used laptops, Wi-Fi (72%), TV (62%), while access to cameras was 34%, smartwatches (32%), and desktop computers (28%), which was lower than mobile, laptop, and TV. In terms of regular exposure, online media was nearly universal and extensive, with 94% using it Everyday. Online media exposure was followed by the use of AI tools integrated into routine tasks - Everyday 54%, Weekly 28%. Print habits remained comparatively strong - Everyday 42%; Weekly 30%, and Radio remained largely peripheral Rarely 66%. Library access was found to be mixed - Everyday 26%, Weekly 24%, Monthly 26% suggesting differentiated academic access.

Media Use Purposes

Purposes of media use differed by medium. Most online activity is oriented around interests/hobbies and educational/work purposes, with 40% of the respondents using online media for interests/hobbies and 38% for educational/work purposes, followed by entertainment - 12% and no clear purpose 10%. 70% used AI tools mostly for educational/work purposes, and 18% for interest/hobby activities, with entertainment use being very minimal at 4%. Similar to online activities, print media use was mostly driven by needs (66%). In contrast, TV use was primarily for entertainment by 62% of the respondents. Library use was mostly need-driven, in the case of 80% of the respondents.

Information-seeking and organization competencies

Self-reported competencies for operation in digital environments were high. For search/locate tasks, online showed Agree/Strongly Agree for 84% of the respondents, and AI tools for 80% of the respondents. For gather/save/organize tasks, Online reaches Agree/Strongly Agree at 82%, and with AI tools being similarly high (Agree/Strongly Agree: 82% across all tasks; with Strongly Agree at 56% for AI tools specifically). These patterns revealed functional MIL competencies with a strong digital emphasis and early use of AI as an information-seeking tool.

Capabilities in producing content

There is uneven confidence in production across modalities. 72% respondents said they were able to produce content for online media and 78% said Yes when they were asked if they were able to prepare written reports/notes for publication. Confidence decreases with more technical modalities: video (Yes: 60%) and graphics (Yes: 34%). This indicates that although basic text and simple multimodal production is prevalent, skills in design are more advanced.

Verification practices and critical engagement

The study found that not everyone engages with verification practices consistently, 42% do it and 36% sometimes, whereas 22% do it infrequently, indicating a long tail of inconsistent verification, with 12% indicating no verification at all. Civic engagement communicative behaviors show low participation, with 39% commenting on news sites, 78% sharing and commenting on social media, and 34% reporting the creation of problem-solving and solution-oriented content. Civic participation in respondents through traditional public forums was found to be much lower, as evidenced by 30% of the respondents reporting letters to the editor or articles and only 16% participating through TV or Radio. This suggests the dominance of platform-heavy civic participation.

Audience Orientation and Reach

For content publishing, there is evidence of early audience professionalization, but practices remain inconsistent. Respondents are evenly split over cross-posting, and audience consideration is only sometimes achieved. For example, on the monitoring variable, 38% reported sometimes, 26% often, and 12% always, reflecting a low but developing use of audience analytics. Self-reported audience reach shows clustering at the lower tail, with 48% reporting as their upper limit 100, and mid-size groups are meaningful, with 26% reporting 1,000 and 12% 500. A minority reaches 10,000 (8%) or over 10,000 (6%), indicating potential “prosumer”.

The Adoption of AI in MIL practices.

The data shows the early mainstreaming of AI in daily practices of MIL: daily usage marked at 54% and weekly at 28% with 70% citing reasons of education and work. This is perhaps due to high self-reported confidence in competence in searching and organizing tasks with the assistance of AI. Nonetheless, because the overall verification rate is low in the data, there is a pedagogic opportunity to couple AI-enabled searching with a level of educational instruction centered on credibility assessments, the triangulation of sources, and the verification of information.

Discussion

In summary, the overall pilot reflects a digitally confident and urban-leaning student cohort and consists of high-intensity online engagement accompanied by routine adoption of AI and foundational skills in MIL, predominantly in the searching and organizing components. Text-based production skills are significantly better than design-heavy creation. Although verification practices exist, they are inconsistent, and civic expression appears to be largely digitally native and public expression is through legacy means. These patterns indicate that focused teaching on verification, visual, and graphic production with analysis of audience attention would bring immediate improvements.

The pilot findings show that although students possess functional and operational media skills, there are still significant gaps in the critical and creative areas of Media and Information Literacy, particularly in the gaps of critique and creative synthesis. The habits of fact verification are inconsistent, demonstrated by the data where 42% of students said they "always" or "often" verify information, and 22% said they "rarely" or "never" verify. The predominance of text-based information in content creation demonstrates the lack of visual and graphic content: 72% of students said they can create online content while only 34% said they can produce graphics or media that is more than just a text, a limitation in 21st-century digital communication. Civic engagement is largely platform-heavy, as 78% participate through social media, but fewer extend their voice to public fora such as news websites (38%), letters or articles to editors (30%), or TV/radio participation (16%). Furthermore, the lack of strategic publishing in terms of audience response monitoring and cross-platform posting are underdeveloped skills, with just 12% and 40% practicing these behaviors, respectively. Overall, the use of AI tools is high as 54% use them daily and 70% for academic or work-related tasks. In contrast, critical AI literacy is poor as students even use AI without evaluating the information for accuracy, bias, and reliable sources.

Interpretation for Pilot Study Objectives

This pilot focused on assessing the clarity, effectiveness, and fit of the questionnaire in the scope of a larger study on Media and Information Literacy (MIL) competencies.

The instrument mostly serves its intended purpose, but there are still some areas that may need some adjustments to improve conceptual clarity and diagnostic utility. Students mentioned that they extensively use AI tools, but the questionnaire did not look into the AI aspect in detail. Asking about critical AI literacy can capture the contemporary tools of MIL more closely. Same way, the civic-engagement items looked at general participation behaviours well, but a distinction that can be made in the study between performative and substantive civic engagement is much clearer.

The questionnaire's sensitivity can be improved with some changes to item structure. Binary (Yes/No) formats in behaviour-based items can be replaced with scaled or scenario-based questions to capture variation in the consistency or depth of engagement. These changes can increase the chances of capturing and reporting behavioural aspects accurately.

Improvements to the full study's analytical value should be implemented. Considering the qualitative aspects of MIL, including lived experiences, attitudes toward disinformation, and personal accounts of online involvement, should be prioritized, as these aspects generally remain unaddressed in quantitative-focused approaches. To measure MIL more accurately, further studies could include media scenario-based and performance-based assessments and self-reported assessments. These efforts will better construct validity and can offer more comprehensive perspectives on students' media engagement.

Analysis of Media and Information Literacy Questionnaire

Instrument validation process

The newly developed MIL questionnaire focuses on assessing higher education students' access, usage, critical engagement, content creation, civic participation, and AI-mediated literacy. At this stage, validation concentrates on face, content, and construct validation alongside neutrality, clarity, response format appropriateness, logical order, ethicality, and sequencing scanning and so on. The analysis of pilot responses focused on whether items produced meaningful variance, steered clear of bias, and sufficiently captured the MIL construct to be measured.

Face Validity

Face validity refers to the extent to which the questionnaire seems to measure the intended construct at the surface level. The analyses by the experts and the student pilots resulted in confirming the questionnaire's strong face validity as the items captured the vital constituents of MIL, including: media access, information search and verification, content creation, ethical engagement, and civic participation. The contemporary relevance of the tool was also captured with the focus on AI tools. The pilot results confirmed the intended item separations and the differentiation of responses. Students were able to make conclusions on the contrasts of media used on a daily basis and those that were used on an infrequent basis, as indicated with the open access radio (66%) and AI tools (54%) where the distinction of predominantly rare access was evident. This variation demonstrated that the respondents appreciated the distinctions in the study categories. The instrument also demonstrated high face validity expected to understand the complex components of MIL that students possess.

Content Validity

Content validity refers to whether or not the entirety of the domain encompassing the construct has been included. This instrument was developed in accordance with the UNESCO MIL competencies. This was done to assure that the instrument development was in harmony with global standards. The questionnaire covers the major MIL domains comprehensively: access to media and technology; the frequency, purposes, skills of media utilisation; information searching, organisation; fact verification; content creation; engagement in civic and public sphere activities; and AI literacy. The item breadth enabled the pilot study to capture varying dimensions of MIL, demonstrated by respondents' skill self-assessments that varied in degree. For instance, respondents exhibited high confidence in online information searching and organisation (over 80% in agreement or strongly agreeing), but considerably lower confidence in content creation (28% identified graphics as a content type they could produce) and graphics-based content creation. Minor content under-representation was observed in two areas: (a) specific methods in information verification and (b) critical AI literacy (evaluation of AI content, bias, and ethical use). Although these gaps suggest the need for a few targeted additions to ensure fuller domain representation, the instrument reflects strong content validity for a newly developed tool.

Construct Validity

Construct validity finds if the questionnaire's items relate to the theoretical construct it aims to measure logically. Data from the pilot shows the question clusters behaved according to the theoretical expectations of the MIL competencies. For instance, the instrument differentiates between media access (devices and media availability), functional competencies (searching, saving, organizing), creative competencies (content production across modalities), and critical engagement (fact-checking and civic participation). Data also showed meaningful and consistent patterns, including a substantial difference between high levels of social media engagement (78% reported engaging through sharing and commenting) and relatively low levels of participation in public civic engagement (e.g., only 38% of the audience commented on news websites, 30% wrote letters or articles to the editor, 16% engaged through TV or radio). This supports construct validity in that the tool captured variations in the sociocivic participation dimensions expected. While comprehensive construct validation (e.g. factor analysis) is set aside for large-scale testing, there is initial evidence that suggests the item clusters are consistent in relation to the intended conceptual framework.

Neutrality and Bias Check

Through analysis it was found that the questionnaire is balanced and uses neutral language, avoids leading questions or value-laden phrasing. No positive behaviours were pre-assumed, and response options included both desirable and undesirable answers. The data showed that 22% of respondents stated they "Never" or "Occasionally" fact-checked content, suggesting respondents felt comfortable reporting socially non-desirable behaviour, supporting the absence of response pressure or bias. No emotionally charged questions were identified. Hence, neutrality is strong in the instrument.

Clarity and Comprehension Check

Clarity was assessed by the pilot and no significant confusion was seen regarding wording or item intent. It can be seen in Response patterns which indicated the ability to make distinctions between platforms, activities, and competencies. For example, respondents appropriately differentiated the frequency of library access (26% daily; 26% monthly; 24% weekly; 20% rarely), indicating understanding of scale and item framing. Minor clarification may be required in civic-related items to ensure all respondents interpret "public-sphere participation" consistently. Overall, clarity was found to be high.

Response Format and Scaling Adequacy

The chosen formats to gather responses suited the tracked constructs well. Several frequency scales (Never→Everyday), Likert scales, multi-select, and Yes/No formats were appropriately designed to assess behaviours, access, and competencies. There was the greatest discriminative ability with the frequency scales. Nonetheless, there are two situations in which scaling would improve: a) the content creation items capture the presence of ability but not the level of proficiency, and b) Yes/No formats for complex behaviours (e.g., content creation, civic actions) constrain depth. Inclusion of proficiency gradation for content creation and frequency scaling for civic behaviours would enhance sensitivity in measurement. Response formats are appropriate with moderate refinements.

Logical Flow, Sequencing, and Length Appropriateness

The questionnaire displays a logically coherent structure, moving from demographic background to access, usage, skills, and then to critical engagement and creative/civic outputs. This sequencing corresponds to cognitive flow and minimizes cognitive fatigue. During the pilot, the time to completion averaged 12–15 minutes, which is acceptable for academic surveys. There was no evidence of fatigue-related response bias

(e.g., sudden straight-lining at the end of the survey). For full-scale deployment, the length is appropriate and well-balanced.

Ethical Adequacy

The ethical consideration within the educational context for the outlined research remains intact and well handled. The research does not touch on particular sensitive matters and does not pose any psychological, moral, or reputational risk. Questions that pertain to sensitive personal domains are designed to avoid risk as they remain optional and within ethical limits. The risk is low and manageable with the regular information and consent compiled from the participants.

Pilot Based Instrument Performance Review

These pilot results showed that the instrument was able to achieve and capture meaningful diversity among the key MIL constructs, particularly strengths (e.g., strong digital access, high use of AI tools and online media) and gaps (e.g., irregular verification practices, limited multimedia proficiency, low civic-public engagement). The instrument was able to deliver actionable and useful information to determine the gaps and strengths to be scaled. The ability to provide insights is a stronger attribute of this tool and requires little to no changes to be made in this area.

Findings Aligned to Research Questions

This section presents a concise alignment of the pilot findings with the research questions that guided the development and preliminary validation of the Media and Information Literacy (MIL) questionnaire.

RQ1: Do the respondents show enough variability across the questionnaire items to support its future use as a discriminative tool in large-scale administration?

The pilot demonstrates sufficient variability across key domains of the instrument, indicating that the items possess discriminative capacity. Clear responses were observed in media access dimension, self-reported operational skills, verification behaviours, and civic engagement. The absence of uniform or ceiling effects across most items suggests that the response patterns are heterogeneous. This variability supports the tool's suitability for large-scale administration where differentiation among respondents is essential.

RQ2: Are there particular items or sections that may result in confusion, non-compliance, or patterned neutrality, suggesting the need for simplification, reorganisation, or removal?

Overall item clarity and comprehension were adequate, and no systematic confusion was seen. But the pilot did identify areas for refinement to minimise potential limitations in future administration. Binary (Yes/No) items relating to complex behaviours have bearing for response sensitivity and these can be converted into scaled formats. Minor ambiguity in the interpretation of civic-engagement items was seen which can be because of lack of awareness and warrants some change suiting understanding of students. These findings suggest the need for selective item modification rather than removal or restructuring of entire sections.

RQ3: Which parts of the questionnaire capture the most engagement, and which parts are more likely to fall prey to social desirability bias or self-report inflation?

The Pilot showed items related to access, media use, and operational competencies had high engagement and got detailed responses, reflecting familiarity and comfort with the subject matter, while sections relating to verification and civic participation showed indications of potential social desirability influence. AI related

questions saw high levels of AI-enabled tasks, while respondents showed self-reported verification and civic behaviours patterns consistent with over-reporting of ideal responses. Although the pilot did not include formal social desirability checks, the variability in these areas indicates benefit from incorporating measures to detect inflation, using scenario-based or behaviourally anchored items.

RQ4: Do initial patterns indicate that particular demographic or contextual factors are associated with different orientations toward the MIL, suggesting that the tool is responsive to social positioning?

Pilot patterns indicate potential for contextual variation in MIL orientations. For example, the sample's predominantly urban profile coincided with high digital access indicating that socio-contextual factors may shape MIL behaviours. While formal comparative or inferential analysis was not feasible due to the limited and uneven composition of the pilot sample, these early observations call for systematic examination of demographic and contextual influences in a larger and more diverse sample. The pilot thus indicates that the tool has the potential to capture contextual sensitivity, contingent on expanded sampling in the full study, hence it is useful.

RQ5: Does the response pattern within the cognitive, behavioural, and attitudinal spheres support the theoretical justification of the tool, or indicate a need for rebalancing?

The response patterns provide initial support for the theoretical distribution of domains within the instrument. Cognitive and functional competencies (e.g., information searching and organisation) were consistently rated high, whereas behavioural and attitudinal components associated with critical engagement, creative production, and civic participation reflected lower and more uneven patterns. These distinctions align with the theoretical expectation that cognitive competencies typically develop earlier and more rapidly than critical or civic-oriented behaviours. The pilot indicates the value of retaining the tripartite structure; however, additional items that strengthen behavioural and attitudinal measurement would increase the balance and diagnostic capacity of the tool.

Conclusion

The pilot study focused on understanding the scope and utility of a Media and Information Literacy (MIL) questionnaire that seeks to study the status of Media and Information Literacy among undergraduate students through dimensions of students' media access and usage, critical engagement, content creation, civic participation and so on. The results of the pilot study indicated that the instrument is appropriate and can be successfully implemented on a larger scale, as it showed meaningful distinctions across the primary components of Media and Information Literacy. Students demonstrated advanced media competencies, especially in digital media, information retrieval, and active use of AI tools, but there are concerning deficiencies in the higher order critical and creative dimensions of Media Literacy in them. The pilot study highlighted weaknesses in critical fact-verification, advanced visual and multimedia content creation, and public civic discourse that transcends social media.

The validation through face, content, and construct validity checks also confirmed that the questionnaire meets the foundational MIL constructs in a coherent, clear, and ethically sound conceptual framework for wider use. While minor enhancements pertaining to critical AI literacy coverage, measuring the verification methods in a more varied way to strengthen the range, and scaling proficiency for content creation would improve the instrument's diagnostic potential in the full study, the pilot results show that the questionnaire is methodologically sound and contextually appropriate and will provide useful data on the emerging patterns of MIL in higher education learners. The instrument's diagnostic potential makes it ready to assist in a significant study needing a sophisticated and broad instrument to measure the evolving MIL in learners' digital and AI-integrated media, as the pilot study suggests.

Limitations

The pilot study provides some useful insights, but it is not without its limitations. With only 50 respondents, most of whom were from a single institution, the study's findings may not be applied to other educational, socio-economic, or geographical contexts. While self-reported data contain useful information about attitudes and awareness, it may not adequately reflect actual behaviours or performance. Some of the constructs, especially critical engagement and verification related strategies, were assessed with single-item indicators, and this should be noted as a limitation of depth of construct assessment for this stage. Furthermore, without scenario-based or performance-based items, the tool measures self-perceived competence, not actual competence. None of this is intended to diminish the value of the pilot, but rather to highlight the need for broader sampling and targeted tool refinement prior to use on a larger scale.

Future scope

The outcomes from this pilot study open many new possibilities for research. A study of this type can expand the sample for a more robust comparative and inferential analysis across different fields, institutions, and locations. Subsequent applications of this instrument can improve from incorporating multi-item scales for the core areas of critical MIL, especially verification strategies, civic engagement, and AI literacy, for reliability assessment and more comprehensive validation. The use of scenario-based assessments, media analysis tasks, or brief performance items can further improve construct validity by capturing demonstrated competencies rather than self-reports. For example, Longitudinal designs with pre- and post-intervention can assess the sensitivity of the identified constructs better, also making it a useful instrument for assessing MIL training. Future research on the subject can include more qualitative elements to provide a richer understanding of student rationale, barriers, and media engagement practices, and the values they relate to.

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