

DIGITAL LITERACY SKILLS AND COMPETENCIES IN PUBLISHING SCHOLARLY CONTENT AND COLLABORATIVE COMMUNICATION: A STUDY AMONG GFGC LIBRARIANS

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Abstract *The study aims to investigate the librarians' digital publishing skills and the competencies in communicating the scholarly content collaboratively. The study considered the librarians working in Government First Grade Colleges (GFGC) of Karnataka State. A survey method was used; 297 librarians took part in the study. The study findings indicated a considerable proficiency in traditional tasks like digital content creation, document formatting, and lower competencies were observed in the cyber security, metadata management, digital inclusivity, and copyright. Related to collaborative communication skills, a strong familiarity with digital evaluation and highlighted the significant gap in ethical consideration in the digital environment, accessibility, and in using the advanced collaborative tools. The findings underscore the need for professional development programs for digital up skilling to equip librarians for effective scholarly communication in an evolving digital landscape.*

Keywords: *Digital Literacy Skills, Scholarly Publishing, Collaborative Communication, Scholarly Communication, Academic Librarians, Government First Grade Colleges (GFGCs), Professional Development*

INTRODUCTION

The role of librarians has undergone a significant transformation in the digital age, expanding from traditional custodians of physical collections to dynamic facilitators of information literacy, digital publishing, and collaborative scholarly communication (Khoo & Majid, 2019). The digital native library user expects comprehensive support in digital content management in the present complex digital information environment (Haddow & Klobas, 2004). This necessitates a diverse set of technical, management, and interpersonal skills among library professionals. The librarians need proficiency and expertise in digital archiving, open access, metadata management, cybersecurity, and in using the advanced tools for collaborative communication, along with their established roles such as cataloguing, reference service, and user education (Morales et al., 2014). Yet, the extent to which librarians possess these competencies remains unclear and likely varies widely based on demographic factors, individual experience, and institutional context. Therefore, understanding the current

status of digital skills and competencies of librarians is essential for addressing skill gaps, informing professional development programs, and ensuring libraries remain at the forefront of scholarly communication. This study aims to assess the librarians' skills in digital content publishing and management, and evaluate their competencies in collaborative communication necessary for effective scholarly engagement. By providing an in-depth analysis of these factors, the study offers key insights to guide policy decisions, workforce planning, and training initiatives, ultimately strengthening the library profession's capacity to meet the demands of evolving academic environments.

LITERATURE REVIEW

The evolving role of librarians in the digital age has been extensively studied, emphasizing the shift from traditional custodianship to active participants in scholarly communication and digital content management. Khoo and Majid (2019) emphasized the significance of digital publishing, metadata handling skills for librarians in

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supporting digital scholarship. Haddow and Klobas (2004) noted the challenges faced by librarians in adopting the novel techno innovations in libraries and highlighted the gap between research and practice in the Library and Information Science, and suggested sustained professional development programs to address the gap. Morales, Knowles, and Bourg (2014) focused on the social justice and inclusivity in libraries, emphasizing the skill disparities among librarians and their impact on the quality and institutional equity. Suggested that librarians equip themselves to meet the diverse needs of the 21st century library users in the digital environment.

Luo, Strong, and Simon (2021) highlighted the significance of developing digital skills for librarians to support the stakeholders and highlighted the role of ongoing training programs in bridging the gap in their proficiency in digital content management and access.

Tenopir et al. (2017) discuss how academic librarians contribute beyond traditional duties into areas like research data management, digital publishing, and metrics analysis. Emphasized the need for embedding these into curricula to meet the modern academic expectations. Mounce and Banks (2019) identified that a lack of formal training for librarians in the digital collaboration platforms, citation management software, and online peer review processes. According to Vision and Wulf (2018), librarians should be well-versed in technological tools, including the ethical norms and accessibility standards, to ensure equitable scholarly communication.

The present study assesses the sixteen scholarly publishing skills and eighteen collaborative communication competencies. This study also foregrounds less explored but increasingly important domains, including digital analytics, cybersecurity, ethical considerations, and digital accessibility, highlighting specific gaps that require targeted

capacity-building. Moreover, the empirical approach with a substantial sample size enhances the generalizability of findings and offers actionable insights for professional development and workforce planning. Through this integrative and data-driven methodology, the study contributes a more holistic and actionable perspective on librarians' readiness to meet the challenges of modern digital scholarly communication, filling critical gaps left by earlier, more fragmented investigations.

OBJECTIVES OF THE STUDY

- To assess the librarians' skill levels in various aspects of scholarly content publishing.
- To evaluate librarians' competencies in effective collaborative communication relevant to scholarly work.
- To identify skill gaps and areas of low familiarity among librarians in both publishing and collaborative communication domains.

METHODOLOGY

The present study adopted a quantitative explanatory research design to examine the librarians' digital publishing skills and collaborative communication practices. A structured questionnaire was designed and used to collect the required data. It comprises both closed-ended and Likert scale items. A questionnaire was distributed among 430 government first-grade college working librarians, including permanent and guest librarians. Data received from 297(69.06%) librarians among 430 working librarians across various government first-grade colleges in Karnataka state. Collected data were analyzed using descriptive statistics such as frequency and percentage, with results presented in tabular form.

DATA ANALYSIS AND INTERPRETATION

Table 1: Demographic Profile of Respondents

Sr. No.	Demographic Criteria	Responses	Percentage%
1	Gender Distribution	Male	200(67.3%)
		Female	97(32.7%)
		Total	297(100.0%)
2	Age Group	25-30 years	27(9.1%)
		31-40 years	48(16.2%)
		41-50 years	181(60.9%)
		above 50	41(13.8%)
		Total	297(100.0%)

Sr. No.	Demographic Criteria	Responses	Percentage%
3	Designation	senior scale librarian	124(41.8%)
		selection grade librarian	144(48.5%)
		guest librarian	29(9.8%)
		Total	297(100.0%)
4	Professional Experience	1-5 years	31(10.4%)
		6-10 years	8(2.7%)
		11-15 years	203(68.4%)
		16-20 years	1(.3%)
		above 20 years	54(18.2%)
		Total	297(100.0%)

According to the data presented in Table 1, 200 (67.3%) of the respondents are male, while 97 (32.7%) are female. Most librarians are male, aged 41–50, with 11–15 years of experience, and primarily belong to the Selection Grade and Senior Scale designations. The largest group is aged 41–50 years (60.9%, 181 librarians), followed by those above 50 years (13.8%, 41 librarians), and 31–40 years (16.2%, 48 librarians). The two senior designations (“Selection Grade Librarian” at 48.5% and “Senior Scale Librarian” at 41.8%) collectively account for over 90% of the sample. Guest Librarians, often contract or temporary, are only 9.8% (29 librarians), suggesting most surveyed hold long-term or

promoted roles. The majority have 11–15 years of experience (68.4%, 203 librarians), with 18.2% above 20 years, and only a small fraction (2.7%) in the 6–10-year bracket. Only 10.4% have 1–5 years of experience, and minimal representation in the 16–20 year category, possibly due to shifts in hiring or promotions within that bracket.

This demographic detail shows that the field is dominated by experienced, permanent, and mainly male librarians who are generally mid-career or above. The small proportion of younger or less experienced staff may be a concern for future workforce planning and may hint at barriers for new entrants or a lack of recent hiring.

Table 2: Librarians’ Skills in Publishing Scholarly Content

Sr. No.	Criteria	Level of Skills				
		Poor	Average	Good	Very good	Excellent
1	Digital content creation	75 (25.3%)	35 (11.8%)	45 (15.2%)	44 (14.8%)	98 (33.0%)
2	Document formatting and type setting	74 (24.9%)	38 (12.8%)	46 (15.5%)	106 (35.7%)	33 (11.1%)
3	Graphic design and image editing	95 (31.9%)	48 (16.2%)	73 (24.6%)	68 (22.9%)	13 (4.4%)
4	HTML coding	108 (36.4%)	71 (23.9%)	61 (20.5%)	47 (15.8%)	10 (3.4%)
5	Content management system	86 (29.0%)	72 (24.2%)	69 (23.2%)	50 (16.8%)	20 (6.7%)
6	Metadata management	109 (36.7%)	69 (23.2%)	65 (21.9%)	40 (13.5%)	14 (4.7%)
7	Reference management tools	79 (26.6%)	70 (23.6%)	69 (23.2%)	53 (17.8%)	26 (8.8%)
8	Digital archiving and preservation	90 (30.3%)	60 (20.2%)	73 (24.6%)	52 (17.5%)	22 (7.4%)
9	Open access publishing platforms	75 (25.3%)	61 (20.5%)	72 (24.2%)	61 (20.5%)	28 (9.4%)
10	Understanding of copy right and licensing	86 (29.0%)	65 (21.9%)	70 (23.6%)	59 (19.9%)	17 (5.7%)

Sr. No.	Criteria	Level of Skills				
		Poor	Average	Good	Very good	Excellent
11	Online collaboration and communication tools	83 (27.9%)	66 (22.2%)	72 (24.2%)	58 (19.5%)	18 (6.1%)
12	Social media and content promotion	74 (24.9%)	65 (21.9%)	78 (26.3%)	56 (18.9%)	24 (8.1%)
13	Digital analytics and metrics	98 (33.0%)	63 (21.2%)	68 (22.9%)	49 (16.5%)	19 (6.4%)
14	Multimedia integration	97 (32.7%)	55 (18.5%)	76 (25.6%)	57 (19.2%)	12 (4.0%)
15	Mobile optimization	82 (27.6%)	57 (19.2%)	82 (27.6%)	56 (18.9%)	20 (6.7%)
16	Cyber security and data privacy	97 (32.7%)	71 (23.9%)	60 (20.2%)	57 (19.2%)	12 (4.0%)

As per Table 2, Librarians report the highest skill levels in digital content creation and document formatting, but generally rate themselves lower in technical and emerging areas like graphic design, HTML coding, and metadata management.

For the ‘Digital Content Creation’, 33% rate themselves “Excellent,” with 15.2% “Good” and 14.8% “Very Good,” but a quarter (25.3%) still cite “Poor” skills. For ‘Document Formatting and Typesetting’, Strong skills were noted, with 35.7% “Very Good” and 15.5% “Good,” but 24.9% still “Poor”. For ‘Graphic Design and Image Editing, HTML Coding, Metadata Management’, its observed that the highest “Poor” responses (around 32–36%), and very few “Excellent” (3–5%), suggesting these technical skills are underdeveloped and for ‘Content Management Systems, Digital Archiving, Open Access Platforms’, higher numbers in “Average” and “Poor” compared to “Excellent,” revealing

substantial skill gaps in these essential areas for modern scholarly communication. It’s observed that skills around copyright, digital analytics, cyber security, and mobile optimization are middling, with about one-third or more indicating “Poor” skills, and few (generally less than 10%) feeling “Excellent”. Proficiency with online collaboration, reference management, and social media is slightly better but still leaves a significant gap for professional development.

While core content creation and formatting skills are relatively high, which matches traditional library roles; there is a widespread need for up skilling in areas involving technology, design, and online tools. The relatively lower skill ratings in digital analytics, cyber security, and emerging platforms suggest that librarians must pursue more extensive professional development to fully support 21st century scholarly communication.

Table 3: Skills for Effective Collaborative Communication of Scholarly Content

Sr. No.	Criteria	Responses				
		Very Unfamiliar	Unfamiliar	Somewhat Familiar	Familiar	Very Familiar
1	Information literacy	15 (5.1%)	24 (8.1%)	44 (14.8%)	102 (34.3%)	112 (37.7%)
2	Digital evaluation of online sources	20 (6.7%)	37 (12.5%)	57 (19.2%)	130 (43.8%)	53 (17.8%)
3	Understanding digital publishing platforms	21 (7.1%)	42 (14.1%)	77 (25.9%)	120 (40.4%)	37 (12.5%)
4	Digital writing and editing skills	22 (7.4%)	55 (18.5%)	89 (30.0%)	99 (33.3%)	32 (10.8%)
5	Citation management software	26 (8.8%)	56 (18.9%)	90 (30.3%)	84 (28.3%)	41 (13.8%)
6	Open accessing copy right knowledge	24(8.1%)	68(22.9%)	77(25.9%)	95(32.0%)	33(11.1%)
7	digital collaboration tools	23 (7.7%)	70 (23.6%)	84 (28.3%)	92 (31.0%)	28 (9.4%)

Sr. No.	Criteria	Responses				
		Very Unfamiliar	Unfamiliar	Somewhat Familiar	Familiar	Very Familiar
8	Understanding digital metrics	30 (10.1%)	72 (24.2%)	74 (24.9%)	93 (31.3%)	28 (9.4%)
9	Data management and sharing	33 (11.1%)	61 (20.5%)	85 (28.6%)	90 (30.3%)	28 (9.4%)
10	Digital privacy and security	32 (10.8%)	63 (21.2%)	87 (29.3%)	95 (32.0%)	20 (6.7%)
11	Online presentation skills	30 (10.1%)	51 (17.2%)	77 (25.9%)	108 (36.4%)	31 (10.4%)
12	Visual communication skills	32 (10.8%)	64 (21.5%)	80 (26.9%)	94 (31.6%)	27 (9.1%)
13	Online peer review process	32 (10.8%)	58 (19.5%)	81 (27.3%)	91 (30.6%)	35 (11.8%)
14	Digital archiving and preservation	34 (11.4%)	61 (20.5%)	72 (24.2%)	99 (33.3%)	31 (10.4%)
15	Adaptability to new technology	31 (10.4%)	57 (19.2%)	77 (25.9%)	103 (34.7%)	29 (9.8%)
16	Online community engagement	36 (12.1%)	55 (18.5%)	82 (27.6%)	97 (32.7%)	27 (9.1%)
17	Digital accessibility and inclusivity	32 (10.8%)	66 (22.2%)	72 (24.2%)	97 (32.7%)	30 (10.1%)
18	Ethical considerations in digital research and communication	36 (12.1%)	68 (22.9%)	76 (25.6%)	89 (30.0%)	28 (9.4%)

Table 3 indicates that the librarians are generally most familiar with information literacy, digital evaluation, and digital writing, but less so with advanced digital collaboration, analytics, and inclusivity topics.

With related to the 'Information Literacy' skills, 37.7% of respondents indicated "Very familiar," 34.3% of them as "Familiar." Followed by 43.8% of them familiar with 'Digital Evaluation', 43.8% "Familiar." Indicates strong competencies in evaluating the quality of the content. 44.1% of them are familiar with 'Digital Writing and Editing', and about 40-42% of the respondents are familiar with citation management skills, open access knowledge, and digital curation tools. it's observed that a significant number of the respondents remain unfamiliar with the same. More respondents were familiar with the 'Digital Archiving, Adaptability to New Technology, Online Presentation'.

The majority of the respondents indicated 'Very unfamiliar' for 'Understanding Digital Metrics, Data Management, Digital Accessibility and Inclusivity, Ethical Digital Practices', and a moderate level of familiarity/knowledge on 'Online Community Engagement, Visual Communication, Online Peer Review', which indicates a dire need for training and development.

On the whole, the GFGC librarians are confident with basic skills such as information literacy and digital evaluation. However, the librarian's skill and competencies in the use of advanced collaboration tools, such as digital data management, metric applications, and ethical practices, are underdeveloped. Therefore, a pedagogical approach in developing and enhancing the skills and competencies in this regard is suggested.

MAJOR FINDINGS OF THE STUDY

The major findings of the study are as follows:

With related to the demographics of the respondents, the sample is predominantly male (67.3%), with women representing 32.7%. Most librarians are aged 41–50 (60.9%) and hold either Selection Grade (48.5%) or Senior Scale (41.8%) positions. A significant majority (68.4%) have 11–15 years of professional experience, indicating an experienced but aging workforce.

With related to the Scholarly Publishing Skills, librarians excel in traditional areas like digital content creation (33% "Excellent"), and document formatting (35.7% "Very good"), but report low proficiency in technical domains including

HTML coding (36.4% “Poor”), metadata management (36.7% “Poor”), and cybersecurity (32.7% “Poor”).

With related to the Collaborative Communication Skills, high familiarity was observed for information literacy (72% “Familiar” or “Very familiar”) and digital evaluation of sources (61.6% “Familiar” or “Very familiar”). Conversely, skills such as digital accessibility, ethical digital research practices, and data management showed considerable unfamiliarity, indicating persistent gaps in contemporary and advanced competencies.

SUGGESTIONS

The study reveals substantial gaps in technical and digital skills among librarians, particularly in areas like cybersecurity, digital accessibility, and metadata management. Addressing these gaps can help libraries function as inclusive public institutions that empower all segments of society with equitable access to information and digital literacy. Librarians who enhance their competencies in digital content creation, online communication tools, and social media can play a pivotal role in promoting digital literacy among the public, fostering an informed citizenry equipped to navigate the information-rich landscape of the 21st century. Skilled librarians contribute to communities by delivering quality services that support lifelong learning and workforce development, especially as information needs and modes of access undergo rapid evolution. Therefore, based on the study results, the following suggestions were made:

- *Capacity Building:* Suggested for organizing the ongoing training in advanced digital skills, especially for HTML coding, metadata curation, cybersecurity, and analytics, to strengthen digital scholarly publishing support.
- *Recruitment and Succession Planning:* Suggested to hire and mentor younger librarians to ensure knowledge transfer and institutional continuity as the current workforce ages.
- *Digital Inclusivity & Ethics:* Integrate programs focusing on digital accessibility, inclusivity, and ethical practices in scholarly communication to bridge observed skill gaps and align with global best practices are suggested.
- *Foster Cross-Designation Collaboration:* Encourage knowledge exchange among librarians from different designations to harmonize skill levels and promote organizational learning.

CONCLUSION

The present study is about proficiency level among librarians in Government First Grade Colleges (GFGCs) of Karnataka regarding digital publishing skills and collaborative communication practices. This study reveals that while librarians have retained strong traditional and content-based skills, there are significant gaps in emerging technical, collaborative, and ethical domains of scholarly communication. The respondents group consists of the highly experienced; there is a need for a pedagogical approach for professional development and inclusive policies. Enhancing the librarians’ awareness of open access, open science, and digital rights management, and ethical considerations will contribute to developing information-literate academicians. And the study suggests offering continuing education programs to ensure and equip librarians in digital scholarship and collaborative research, to strengthen the status of the libraries and take a leading role in digital transformations as an active partner in disseminating the knowledge for the academic success.

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