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UNIVERSITI TEKNOLOGI MARA®

RONA TINTA

EDISI 2026



STUDENT SATISFACTION WITH ONLINE REFERENCE SERVICES: ACCESSIBILITY, INFORMATION ACCURACY, AND TECHNOLOGY

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The rapid development of information and communication technologies has transformed academic library service delivery, with online reference services (ORS) increasingly used to provide academic assistance beyond the physical library. ORS enables students to seek assistance through channels such as email, live chat, social media, e-guides, and online databases. Its importance became particularly evident during the COVID-19 pandemic, when restrictions on physical access accelerated the adoption of virtual services and increased students' reliance on digital channels for academic support.

Accessibility and Responsiveness of Online Reference Services

Accessibility is a fundamental characteristic of ORS because digital services allow students to obtain assistance regardless of their physical location. Evidence from the COVID-19 period demonstrates the value of providing multiple channels to accommodate different information-seeking circumstances. Begum and Elahi (2021) found that students used both asynchronous services, including email and e-guides, and synchronous services such as WhatsApp and live chat. These findings indicate that flexibility in service channels can help libraries maintain academic support when conventional access is limited. However, making a service available online does not necessarily make it accessible to everyone. Students often favour general search engines because they are familiar, easy to use, and provide rapid results. Together, these findings suggest that the perceived accessibility of ORS depends partly on the effort required to locate and use them. In addition, the importance of websites, social media, and other communication channels is increasing awareness and engagement with digital library resources.



Figure 1: The PERMATA UiTM portal allows you to access various types of databases and reference materials in a single, user-friendly interface.

Responsiveness is closely related to accessibility because students also evaluate whether assistance can be obtained within a reasonable time. This proved that users valued rapid responses, mobile accessibility, and multiple channels in contactless digital library services. Although students recognise libraries as sources of reliable and personalised academic assistance, they also expect a level of speed and convenience comparable to other online information services. This creates a tension between the professional, librarian-mediated nature of ORS and the immediacy of platforms such as Google and social question-and-answer services. Importantly, responsiveness cannot be concentrated to speed

alone. Users' perceptions are also influenced by librarians' expertise and the relevance of their responses. Consequently, a rapid but generic response may not provide the same value as a timely response that addresses the user's specific academic need.

Information Accuracy, Credibility and Relevance

Accessibility must be accompanied by reliable information if ORS is to provide meaningful academic support. Students use academic libraries partly because library-mediated assistance is expected to provide information that is credible, accurate, and relevant to scholarly work. Habiba and Islam (2022) identified authority, reliability, currency, and accuracy as important criteria in evaluating information credibility. The role of librarians is particularly important in this context. This suggests that the value of ORS lies not only in delivering information but also in guiding students towards appropriate sources. Such professional assistance can distinguish librarian-mediated reference services from community-driven platforms. Students use platforms such as Google and social media during information seeking but continue to value libraries for reliable and personalised academic assistance. Thus, ORS should be easy and convenient to use, but they must also provide trustworthy and academically reliable help.

Besides that, insufficient information literacy with difficulties in searching for, evaluating, and using information may reflect both service characteristics and users' information-seeking capabilities. For ORS, the implication is that accurate information and professional guidance are closely connected to user trust and perceived service quality. Accordingly, the present study treats information accuracy as an important dimension of service quality because students' satisfaction is likely to depend on whether the information provided through ORS is perceived as correct, reliable, and relevant to their academic needs.

Technology and Emerging AI

The technological environment through which ORS is delivered also shapes users' experiences. Oseghale (2022) identified unreliable internet connections, complicated interfaces, and inadequate digital infrastructure as barriers to effective electronic resource use. This issue is particularly relevant given students' exposure to digital services that prioritise simplicity and speed. Users favour systems that reduce effort and produce prompt results, ease of use and rapid access to information. Therefore, platform usability can influence satisfaction independently of the quality of the information ultimately obtained.

Technology may also provide opportunities to improve ORS. Zhang and Yin (2024) identified AI and smart search technologies as potentially useful for faster information retrieval, personalised recommendations, and user engagement. AI-driven chatbots as capable of handling common enquiries, managing high inquiry volumes, and providing continuous assistance. These capabilities may improve scalability and responsiveness by allowing librarians to devote greater attention to more complex enquiries. However, it indicates that automation has limitations. The continuing importance of human librarians for complex questions requiring contextual understanding and professional judgement. This suggests that technological development and user capability should be considered together. AI can make library services faster and easier to access, but librarians are still important because they provide human knowledge, judgment, and personalised help. A sophisticated platform



Figure 2: Live chat offers several unique benefits that regular search engines cannot match.

may not improve the user experience if students encounter difficulties understanding or navigating it.

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