



The Role of Academic Libraries in Promoting Agricultural Information Literacy among Vocational Agriculture Students: A Literature Review

Adi Sucipto^{1*}, Muhamad Abdul Muid², Moh. Azharul Kholili³

¹ Politeknik Pembangunan Pertanian Bogor, Bogor, Indonesia

² Universitas Islam Internasional Darullughah Wadda'wah, Pasuruan, Indonesia

³ Sekolah Tinggi Ilmu Tarbiyah Maskumambang, Gresik, Indonesia

¹adisucipto617@pertanian.go.id, ²abdulmuid@uiidalwa.ac.id, ³alazharulkholili@gmail.com

*Correspondence

Article Information:

Received: 14 April 2026

Revised: 26 May 2026

Accepted: 27 May 2026

Published: 29 May 2026

Keywords:

Academic Libraries,
Agricultural Information
Literacy, Information
Literacy, Vocational
Agriculture Students,
Library Instruction.

Abstract

Purpose – This study aims to examine the role of academic libraries in promoting agricultural information literacy among vocational agriculture students. The study addresses the growing importance of information literacy in agricultural education, particularly in response to technological advancement, information digitalization, and the increasing need for evidence-based decision-making in the agricultural sector.

Design/methods/approach – This study employs a library research approach using a literature review method. Data were collected from relevant scholarly publications related to academic libraries, information literacy, agricultural education, and vocational students' information needs. The collected literature was analyzed through thematic analysis and literature synthesis to identify major patterns, strategies, challenges, and opportunities.

Findings – The findings show that academic libraries play a strategic role in developing agricultural information literacy through library instruction, information literacy training, embedded librarian programs, collaboration with educators, and the use of digital technologies. The review also indicates that vocational agriculture students have diverse information needs, including academic, technical, professional, and digital information, which require adequate and relevant library support services.

Research implications/limitations – This study is limited to a literature-based analysis and does not include primary data from vocational agriculture students, librarians, or educators. Future research is recommended to conduct empirical studies to evaluate the effectiveness of library-based information literacy programs in vocational agricultural education.

Originality/value – This study contributes to the literature by highlighting academic libraries as key partners in strengthening agricultural information literacy and supporting students' academic success and professional readiness.

How to Cite this Article: Sucipto, A., Muid, M. A., & Kholili, M. A. (2026). The Role of Academic Libraries in Promoting Agricultural Information Literacy among Vocational Agriculture Students: A Literature Review. *Locana: Journal of Linguistics, Literature, and Language Education*, 1(1), 22–39. <https://doi.org/10.67245/locana.v1i1.22>

INTRODUCTION

In the contemporary digital era, the ability to access, evaluate, and utilize information effectively has become an essential competency for students in higher education. The rapid growth of digital information resources, scholarly databases, online repositories, and web-based learning environments requires students to possess adequate information literacy skills to support their academic activities and lifelong learning. Information literacy is generally understood as the ability to recognize information needs, locate relevant information, critically evaluate information sources, and apply information ethically and effectively. As higher education increasingly relies on information-rich learning environments, information literacy has become a fundamental component of academic success and professional development.

Numerous studies have demonstrated the significance of information literacy in improving students' learning outcomes. Information-literate students tend to show stronger academic engagement, better research performance, and higher achievement compared to those with limited information literacy competencies. Jones & Mastrorilli (2022) found that participation in information literacy programs positively influenced students' academic achievement, while Ashiq et al. (2025) reported through a meta-analysis that information literacy significantly contributes to academic performance across higher education contexts. Similarly, Mughari et al. (2024) revealed that students with stronger information literacy competencies are generally more engaged in learning activities and more successful in achieving academic goals. These findings indicate that information literacy is not merely a supporting skill but a critical competency that influences students' educational experiences and outcomes.

The importance of information literacy has become even more pronounced with the integration of digital technologies into higher education. Contemporary learning environments require students to navigate diverse information platforms, assess the credibility of digital content, and synthesize information from multiple sources. Shi et al. (2022) emphasized that smart learning environments can significantly enhance students' information literacy development through technology-supported learning activities. Likewise, Sun et al. (2022) highlighted that information literacy plays an important role in supporting effective online learning and sustainable educational development. In addition, Ogbuagu et al. (2022) argued that students' abilities to search, evaluate, and use online information have become indispensable in modern educational settings. Consequently, higher education institutions are increasingly expected to provide systematic support for the development of information literacy competencies among students.

Within this context, academic libraries have emerged as key institutions responsible for promoting information literacy. Traditionally viewed as repositories of knowledge resources, academic libraries have evolved into active learning centers that support teaching, learning, and research activities. Beyond providing access to books and databases, libraries increasingly offer instructional programs, workshops, consultations, and digital services designed to improve students' information literacy skills. Caffrey et al. (2022) explained that library instruction programs play a crucial role in helping students develop competencies related to information searching, evaluation, and utilization. Further, Zhao et al. (2023) demonstrated

that information literacy training significantly improves students' ability to access and utilize library resources effectively.

The growing involvement of academic libraries in information literacy initiatives reflects a broader transformation in librarianship. Academic librarians are now recognized as educators who contribute directly to student learning and academic development. Moin Ud Din et al. (2022) reported that university libraries increasingly integrate information literacy instruction into their educational services to support student success. Similarly, Rath (2022) noted that librarians perceive information literacy as a multidimensional concept encompassing critical thinking, information evaluation, and ethical information use. Moreover, Mbagwu et al. (2020) argued that academic libraries contribute substantially to educational quality and sustainable development by facilitating equitable access to information and knowledge. These developments suggest that academic libraries occupy a strategic position in fostering information literacy within higher education.

While information literacy has been extensively investigated in general higher education contexts, its application within agricultural education presents unique considerations. Agriculture is a knowledge-intensive field that requires students to access and interpret various forms of scientific, technical, and practical information. Agricultural students frequently rely on information from research articles, extension publications, government reports, digital databases, and industry resources to support learning and decision-making processes. Therefore, agricultural education increasingly demands strong information literacy competencies that enable students to identify reliable information sources and apply information effectively in academic and professional contexts.

Several studies have highlighted the importance of information literacy among agricultural students. Parmar & Pateria (2020) found that digital information literacy competencies are essential for students in agricultural universities because they facilitate effective access to digital information resources. Similarly, Jing et al. (2024) reported that agricultural students' information literacy levels are influenced by multiple factors, including educational experiences, access to information resources, and technological competencies. Furthermore, Salauddin (2024) revealed that users of agricultural university libraries often experience challenges related to information seeking, emphasizing the need for targeted literacy support. Dilrukshi & Wickramasooriya (2026) also demonstrated that information needs and information-seeking behaviors within agricultural contexts are becoming increasingly complex due to the expansion of digital information environments. Collectively, these studies suggest that agricultural students require specialized information literacy competencies that extend beyond general information literacy skills.

The need for information literacy development becomes particularly important in vocational agricultural education. Unlike students in conventional academic programs, vocational agriculture students are expected to integrate theoretical knowledge with practical applications relevant to agricultural industries and workplaces. As a result, they must be capable of accessing, evaluating, and utilizing diverse agricultural information sources to support both learning and professional practice. Zhaoxia & คำเจริญ (2025) emphasized the importance of educational information literacy development among students at vocational agricultural institutions, highlighting its contribution to academic learning and professional preparedness. Nevertheless, despite the growing recognition of information literacy in

vocational education, studies specifically focusing on agricultural information literacy among vocational agriculture students remain relatively limited.

A review of the existing literature reveals that previous studies have predominantly examined information literacy in higher education, the instructional role of academic libraries, and information literacy among agricultural students separately. Research has also explored information literacy programs implemented by academic libraries and the information needs of agricultural learners. However, limited scholarly attention has been devoted to understanding how academic libraries specifically contribute to the development of agricultural information literacy among vocational agriculture students. Furthermore, the existing literature remains fragmented, making it difficult to obtain a comprehensive understanding of the relationships among academic libraries, information literacy initiatives, and vocational agricultural education.

Therefore, this literature review aims to synthesize existing studies concerning the role of academic libraries in promoting agricultural information literacy among vocational agriculture students. Specifically, the review seeks to examine the conceptual foundations of agricultural information literacy, explore the contributions of academic libraries to information literacy development, identify the information needs of vocational agriculture students, and analyze strategies, challenges, and opportunities related to agricultural information literacy promotion. By integrating findings from relevant literature, this study seeks to provide a comprehensive conceptual understanding that may support future research and educational practices in vocational agricultural education and academic librarianship.

METHOD

This study employed a *library research* approach using a *literature review* method to examine the role of academic libraries in promoting agricultural information literacy among vocational agriculture students. This approach was selected because the study aimed to identify, analyze, and synthesize findings from previously published studies in order to develop a comprehensive understanding of the concepts, roles, strategies, challenges, and opportunities related to agricultural information literacy within the context of vocational education. Through a literature review, this study integrates relevant theoretical perspectives and empirical findings to provide a broader conceptual understanding of the topic.

The data were obtained from scientific literature compiled by the researchers. The sources consisted of academic articles addressing information literacy, academic libraries, agricultural information literacy, agricultural students, vocational agricultural education, information-seeking behavior, and information literacy services in higher education settings. All retrieved documents were screened based on their relevance to the research focus by examining their titles, abstracts, keywords, and overall content.

Data collection was conducted through a documentation study. Literature that met the inclusion criteria was subsequently classified into several major themes, including information literacy in higher education, the role of academic libraries in information literacy development, information literacy in agricultural education, the information needs of agricultural students, and vocational agricultural education. Following the classification process, each reference was

mapped according to its contribution to the introduction, results and discussion sections, as well as the development of the study's conceptual framework.

The data were analyzed using thematic analysis and literature synthesis. Thematic analysis was employed to identify recurring themes and patterns emerging from the selected studies. Subsequently, literature synthesis was conducted by comparing, connecting, and integrating findings from different studies that shared conceptual relevance. Through this process, the study moved beyond merely describing previous research and developed a conceptual argument regarding the relationships among academic libraries, information literacy programs, the information needs of agricultural students, and the development of agricultural information literacy competencies.

To ensure data trustworthiness, only academically credible and relevant sources were included in the analysis. The validity of the findings was further strengthened through source triangulation by comparing results from multiple studies addressing similar themes. In addition, a systematic process of literature mapping and thematic categorization was conducted to ensure that each argument presented in the discussion was supported by clear theoretical and empirical evidence. Consequently, the synthesized findings are expected to provide a comprehensive understanding of how academic libraries contribute to the development of agricultural information literacy among vocational agriculture students.

RESULTS AND DISCUSSION

Conceptualizing Agricultural Information Literacy

The rapid advancement of information and communication technologies has transformed the ways individuals access, obtain, and utilize information across various sectors, including agriculture. In this context, information literacy has emerged as an essential competency that enables individuals to recognize information needs, locate relevant information sources, evaluate the quality of information, and use information effectively in decision-making processes. Initially, the concept of information literacy was primarily developed within educational and library settings. However, as information needs have become increasingly specialized across disciplines, the concept has evolved to address the specific characteristics and demands of particular fields, including agriculture.

Within the agricultural sector, information literacy extends beyond the ability to search for and use information. It also encompasses the capacity to understand, interpret, and apply agricultural information to support learning, research, and professional practice. Tian et al. (2023) argued that access to accurate and reliable information is a critical factor in promoting sustainable agricultural development. High-quality information enables individuals to understand technological innovations, environmental changes, and emerging agricultural practices that can enhance productivity and efficiency. Consequently, information literacy serves as a foundation for evidence-based decision-making in agricultural contexts.

Agricultural information literacy can be defined as an individual's ability to identify agricultural information needs, locate relevant information sources, evaluate the credibility of information, and apply that information effectively to address agricultural problems and challenges. Unlike general information literacy, agricultural information literacy possesses a more specialized focus because it involves scientific, technical, economic, social, and environmental information related to agricultural activities. Kumar & Devi (2020) emphasized

that agricultural information users must be able to select information that is relevant to local conditions and practical needs, as information that is effective in one context may not necessarily be applicable in another.

Agricultural information literacy is also closely associated with individuals' ability to access diverse information sources. Today, agricultural information can be obtained from scholarly journals, research reports, extension publications, agricultural databases, government websites, digital platforms, social media, and professional communities. The availability of these diverse information channels creates significant opportunities for knowledge acquisition; however, it also presents challenges in identifying accurate and trustworthy information. Afrianto et al. (2022) demonstrated that digital platforms can improve access to agricultural knowledge, yet their effectiveness largely depends on users' abilities to understand, evaluate, and apply the information they receive.

Previous studies have highlighted the strong relationship between information literacy and the adoption of agricultural innovations and technologies. Du et al. (2025) found that higher levels of information literacy contribute significantly to individuals' capacities to understand and adopt new agricultural technologies. Individuals with strong information literacy skills tend to actively seek information, compare multiple sources, and utilize available knowledge to support decision-making processes. In contrast, limited information literacy may hinder the effective adoption of innovations that could otherwise improve agricultural productivity and sustainability.

In addition to supporting innovation adoption, agricultural information literacy plays a crucial role in agricultural decision-making. According to Wann et al. (2024), access to relevant information and the ability to evaluate information quality are essential determinants of effective decision-making in agricultural contexts. Decisions regarding crop selection, technology utilization, resource management, and marketing strategies increasingly depend on accurate and reliable information. In an increasingly complex information environment, the ability to distinguish valid information from misinformation has become a fundamental component of agricultural information literacy.

From an educational perspective, agricultural information literacy is not only important for agricultural practitioners but also for students preparing to enter the agricultural workforce. Students must develop the ability to access and utilize academic and professional information sources relevant to their field of study. This competency has become increasingly important as modern agriculture relies heavily on data-driven technologies, digital tools, and research-based innovations. Therefore, agricultural information literacy can support students in understanding scientific developments, enhancing critical thinking skills, and preparing for future professional responsibilities.

Beyond technical competencies, agricultural information literacy also incorporates a critical dimension involving the evaluation of information quality. The rapid expansion of internet-based information resources has increased both the availability of information and the risk of exposure to inaccurate or misleading content. Information that lacks scientific validity may result in inappropriate decisions and ineffective agricultural practices. Consequently, the ability to assess source credibility, verify information accuracy, and compare information from multiple sources has become an essential component of

agricultural information literacy. These competencies enable individuals to develop more objective, evidence-based perspectives when addressing agricultural issues and challenges.

Based on the literature reviewed, agricultural information literacy can be understood as a multidimensional concept that encompasses the abilities to identify information needs, access relevant information sources, evaluate information quality, and apply information effectively within agricultural contexts. Agricultural information literacy not only supports learning and knowledge development but also contributes to informed decision-making, innovation adoption, and capacity building in the agricultural sector. Therefore, developing agricultural information literacy is particularly important for vocational agriculture students, as it equips them with the competencies needed to navigate information-rich learning environments and meet the demands of an increasingly knowledge-based agricultural workforce.

Academic Libraries as Literacy Learning Hubs

The role of academic libraries in higher education has evolved significantly over the past few decades. Traditionally, academic libraries were primarily viewed as repositories of books and information resources that supported teaching and research activities. However, the rapid expansion of digital information, technological innovation, and changing learning environments has transformed academic libraries into dynamic learning hubs that actively contribute to students' academic development. In contemporary higher education, academic libraries are increasingly recognized not only as providers of information resources but also as facilitators of learning, critical thinking, and information literacy development.

One of the most significant contributions of academic libraries is their role in promoting information literacy among students. Information literacy has become a fundamental competency required for academic success, particularly in an era characterized by information abundance and rapid technological change. As students are exposed to vast amounts of information from various digital and traditional sources, they need guidance in identifying reliable information, evaluating source credibility, and using information ethically and effectively. Academic libraries have responded to these challenges by developing a wide range of information literacy initiatives designed to enhance students' abilities to navigate complex information environments.

Library instruction has emerged as one of the primary strategies through which academic libraries support information literacy development. According to Withorn et al. (2020), library instruction provides students with structured opportunities to develop skills related to information searching, source evaluation, and research practices. These instructional activities often include workshops, classroom-based sessions, database training, and individualized consultations that help students become more effective users of information resources. Rather than focusing solely on access to information, library instruction emphasizes the development of critical competencies that enable students to engage with information in meaningful and informed ways.

The increasing importance of library instruction reflects a broader shift in the professional identity of academic librarians. Traditionally perceived as custodians of information resources, librarians are now recognized as educators who contribute directly to student learning. Nichols Hess (2020) argued that teaching has become an integral component of academic librarianship, particularly in the context of information literacy education. As a

result, librarians are increasingly involved in curriculum-related activities, instructional design, and collaborative teaching initiatives. This transformation highlights the growing recognition of librarians as educational partners within higher education institutions.

The role of librarians as educators is particularly important in supporting students' development of critical information skills. Abdullahi et al. (2024) emphasized that librarians require a diverse set of competencies, including pedagogical knowledge, technological expertise, and communication skills, to effectively deliver information literacy programs. Through their instructional roles, librarians assist students in developing the ability to formulate research questions, identify appropriate information sources, evaluate evidence, and apply information ethically. These competencies are essential for academic success and lifelong learning, particularly in information-intensive disciplines such as agriculture.

In addition to instructional activities, academic libraries support information literacy through the provision of diverse information resources and learning services. The transition from print-based collections to digital information environments has expanded students' access to scholarly materials, databases, institutional repositories, and open-access resources. According to Ali et al. (2023), academic libraries have increasingly integrated information literacy services into their broader educational missions by combining resource provision with instructional support. This integration enables students to develop both access-related skills and higher-order information competencies necessary for academic and professional contexts.

The emergence of digital technologies has further strengthened the role of academic libraries as learning hubs. Modern libraries provide access to digital platforms, online databases, virtual learning environments, and research support services that facilitate independent learning and information exploration. These developments have allowed libraries to extend their educational functions beyond physical spaces and engage students through flexible and technology-enhanced learning opportunities. Consequently, academic libraries have become central actors in fostering students' ability to learn, adapt, and engage with information in digital environments.

Another important dimension of academic libraries' educational role involves addressing contemporary information challenges. The growing prevalence of misinformation and disinformation has increased the need for critical information evaluation skills among students. Johnston et al. (2026) argued that academic libraries play a crucial role in helping learners navigate increasingly complex information ecosystems by promoting critical thinking and evidence-based information practices. Through information literacy initiatives, libraries can equip students with the competencies needed to identify misleading information, assess source reliability, and make informed decisions based on credible evidence.

The contribution of academic libraries is particularly relevant in the context of agricultural education. Students in agricultural programs are required to access and utilize information from a wide range of sources, including scientific journals, extension publications, government reports, technical databases, and digital knowledge platforms. The diversity and complexity of these information sources require students to possess strong information literacy competencies. Academic libraries can support this need by providing access to specialized agricultural resources and by offering instructional programs that help students effectively search, evaluate, and use agricultural information. Through these functions,

libraries contribute not only to students' academic performance but also to their professional preparedness as future agricultural practitioners.

Overall, the literature demonstrates that academic libraries have evolved into multifunctional learning hubs that support information literacy development through instruction, resource provision, educational collaboration, and technological innovation. Their role extends beyond information access to encompass the cultivation of critical thinking, research competencies, and lifelong learning skills. For vocational agriculture students, academic libraries represent a strategic environment for developing the agricultural information literacy competencies necessary to succeed in both academic and professional settings. Therefore, understanding the educational role of academic libraries is essential for examining how these institutions contribute to the promotion of agricultural information literacy among vocational agriculture students.

Information Needs of Vocational Agriculture Students

Information is a fundamental resource that supports learning, problem-solving, and decision-making processes in educational settings. In vocational agricultural education, access to relevant and reliable information is particularly important because students are required to integrate theoretical knowledge with practical skills applicable to real-world agricultural contexts. Unlike students in many other disciplines, vocational agriculture students must continuously engage with information related to agricultural production, technological innovation, environmental sustainability, agribusiness, and rural development. Consequently, understanding their information needs is essential for developing effective information literacy programs and library services that support their academic and professional development.

Information needs generally arise when individuals recognize a gap between their existing knowledge and the knowledge required to accomplish a particular task or solve a specific problem. In agricultural education, these needs are often shaped by the dynamic nature of the agricultural sector, which is characterized by rapid technological advancement, changing environmental conditions, evolving market demands, and continuous scientific innovation. As a result, students require access to current and accurate information that can support both classroom learning and practical agricultural activities.

Previous studies have shown that agricultural learners depend on a wide range of information sources to support their educational and professional activities. Obi & Oladokun (2023) found that students in agricultural institutions frequently seek information related to crop production, livestock management, agricultural technology, climate conditions, pest control, and agribusiness practices. In addition to technical information, students also require access to academic resources such as scholarly journals, textbooks, research reports, and digital learning materials that support their coursework and research activities. These diverse information needs highlight the complexity of information use within agricultural education.

Information-seeking behavior plays a significant role in determining how effectively students can meet their information needs. Samim et al. (2020) reported that agricultural students often utilize multiple channels when searching for information, including libraries, online databases, academic journals, websites, social media platforms, and professional networks. The increasing availability of digital information has expanded students' opportunities to access knowledge; however, it has also increased the challenges associated

with identifying credible and relevant information sources. As a result, students must possess adequate information literacy skills to navigate increasingly complex information environments.

The information needs of agricultural learners are also influenced by the specific characteristics of agricultural knowledge itself. Agricultural information is often multidisciplinary, combining elements of natural sciences, environmental studies, economics, technology, and social sciences. Jalali et al. (2020) emphasized that users of agricultural information frequently require information that is both scientifically valid and practically applicable. Therefore, students must be capable of locating information that not only provides theoretical explanations but also offers practical solutions to agricultural problems. This requirement distinguishes agricultural information needs from those found in many other academic disciplines.

Several studies have identified challenges that affect access to agricultural information. Gudeta et al. (2021) found that information users in agricultural contexts often encounter barriers such as limited access to information resources, insufficient digital competencies, inadequate infrastructure, and difficulties in evaluating information quality. Similarly, Gebeyehu & Jira (2024) reported that information-seeking behavior in agricultural settings is influenced by factors including technological access, educational background, and familiarity with available information systems. These findings suggest that access to information alone is insufficient; students also require the skills necessary to effectively locate, evaluate, and utilize information.

For vocational agriculture students, information needs extend beyond academic requirements and are closely connected to future professional responsibilities. Vocational education emphasizes the development of practical competencies that prepare students for employment and industry participation. Consequently, students require information that supports both theoretical understanding and practical application. They need access to information on agricultural innovations, sustainable farming practices, emerging technologies, market trends, government policies, and industry standards. Such information enables students to develop professional competencies that are relevant to contemporary agricultural workplaces.

The increasing digitalization of agricultural information has further transformed students' information needs. Today, agricultural knowledge is disseminated through digital databases, online extension services, mobile applications, e-learning platforms, and social media networks. While these technologies provide greater access to information, they also require students to possess the ability to critically assess information quality and reliability. The abundance of available information may create confusion if students lack the necessary competencies to distinguish between credible sources and unreliable content. Therefore, information literacy becomes a crucial factor in helping students effectively utilize digital agricultural information resources.

Academic libraries can play a strategic role in addressing the information needs of vocational agriculture students. By providing access to specialized agricultural resources, research databases, digital collections, and information literacy training programs, libraries can help students develop the competencies needed to navigate agricultural information environments. In addition, library services can support students in identifying appropriate

information sources, improving search strategies, and evaluating information critically. Such support is particularly important given the complexity and diversity of information required in agricultural education.

Overall, the literature indicates that vocational agriculture students possess diverse and evolving information needs that reflect the multidisciplinary and dynamic nature of the agricultural sector. Their information needs encompass academic, technical, professional, and digital dimensions that require access to reliable information and strong information literacy competencies. Understanding these needs is essential for designing effective educational strategies and library services that support the development of agricultural information literacy. Consequently, academic libraries have an important responsibility to provide both information resources and educational support that enable vocational agriculture students to become effective users of agricultural information in academic and professional contexts.

Strategies for Promoting Agricultural Information Literacy

The development of agricultural information literacy among vocational agriculture students requires systematic and sustainable efforts involving various educational stakeholders, particularly academic libraries. As information environments become increasingly complex and technology-driven, students need not only access to information resources but also guidance in developing the competencies necessary to locate, evaluate, and utilize information effectively. Consequently, academic libraries play a strategic role in designing and implementing programs that support the development of agricultural information literacy.

One of the most widely implemented strategies is *library instruction*. This approach refers to structured educational activities designed to improve students' information literacy skills through workshops, classroom sessions, tutorials, and individual consultations. Grabowsky & Weisbrod (2020) emphasized that library instruction helps students develop competencies related to information searching, source evaluation, database utilization, and academic research practices. Through these instructional activities, students gain a better understanding of how to identify relevant information sources and apply information effectively in academic and professional contexts. For vocational agriculture students, library instruction can be tailored to include agricultural databases, scientific journals, extension publications, and other specialized information resources relevant to their field of study.

Another important strategy is the implementation of information literacy training programs that focus on research and critical information evaluation skills. Ajiboye et al. (2022) found that information literacy and research skills programs significantly contribute to students' abilities to identify information needs, retrieve relevant information, and evaluate source credibility. Such programs are particularly important in agricultural education because students frequently encounter diverse forms of information originating from scientific, governmental, industrial, and digital sources. Developing critical evaluation skills enables students to distinguish reliable information from inaccurate or misleading content, thereby supporting evidence-based learning and decision-making.

The integration of information literacy into academic curricula has also been recognized as an effective strategy for enhancing student competencies. Rather than treating information literacy as a stand-alone activity, many institutions incorporate information literacy outcomes into course objectives and learning activities. This approach allows students

to develop information literacy skills within authentic disciplinary contexts. For vocational agriculture students, curriculum integration can encourage the use of agricultural information resources in assignments, projects, field studies, and problem-solving activities. Such experiences help students understand the practical relevance of information literacy while strengthening their ability to apply information in agricultural settings.

The *embedded librarian* model has gained increasing attention as an innovative strategy for promoting information literacy. Under this model, librarians collaborate closely with academic staff and become actively involved in teaching and learning processes. Harkness et al. (2021) explained that embedded librarians provide direct support to students throughout academic courses by assisting with research activities, information retrieval, and resource evaluation. Similarly, DaLomba et al. (2020) demonstrated that librarian involvement within academic programs can significantly improve students' information literacy competencies. Through continuous interaction with students and instructors, embedded librarians create opportunities for contextualized learning that aligns information literacy instruction with disciplinary needs.

Collaboration between librarians and educators represents another essential component of effective information literacy development. Information literacy is most effective when it is supported by multiple stakeholders rather than being treated solely as the responsibility of libraries. Partnerships between librarians, lecturers, and vocational instructors can facilitate the design of learning activities that incorporate information literacy outcomes into course content. Such collaboration is particularly important in agricultural education, where students must learn to access and apply information from diverse scientific and professional sources. By working together, librarians and educators can ensure that information literacy competencies are aligned with both academic requirements and industry expectations.

The growing availability of digital technologies has also expanded opportunities for promoting agricultural information literacy. Academic libraries increasingly utilize online learning platforms, digital repositories, virtual workshops, and multimedia instructional resources to reach students beyond traditional classroom settings. These technologies provide flexible learning opportunities and enable students to access information literacy support regardless of time and location. Furthermore, digital learning tools can expose students to a broader range of agricultural information resources, including open-access databases, online extension services, agricultural applications, and professional knowledge networks.

In addition to formal instructional programs, academic libraries can foster agricultural information literacy by creating supportive learning environments that encourage independent information exploration. Access to specialized collections, research support services, and expert guidance can motivate students to engage more actively with information resources. Libraries can also organize thematic workshops, research clinics, and training sessions focusing on agricultural information needs and emerging issues within the agricultural sector. Such initiatives contribute to the development of lifelong learning habits that remain valuable beyond formal education.

Overall, the literature suggests that the promotion of agricultural information literacy requires a combination of instructional, technological, and collaborative strategies. Library

instruction, information literacy training, curriculum integration, embedded librarianship, educational partnerships, and digital learning initiatives collectively contribute to the development of students' information competencies. For vocational agriculture students, these strategies provide essential support in navigating increasingly complex information environments and preparing for professional roles that require effective information use. Therefore, academic libraries play a central role in facilitating the development of agricultural information literacy through diverse and integrated educational approaches.

Challenges, Opportunities, and Conceptual Framework for Agricultural Information Literacy Development

Despite the growing recognition of agricultural information literacy as an essential competency, its development among vocational agriculture students is accompanied by various challenges. One of the primary challenges involves unequal access to information resources and digital technologies. Although digital transformation has expanded the availability of information, not all students have equal opportunities to access high-quality information resources, technological infrastructure, or reliable internet connectivity. Such disparities may limit students' ability to engage effectively with information and reduce the overall effectiveness of information literacy initiatives.

Another significant challenge relates to students' varying levels of information literacy and digital competency. Rathod (2025) noted that many learners continue to experience difficulties in locating relevant information, evaluating source credibility, and applying information effectively. These challenges become more pronounced in agricultural contexts, where information often originates from multiple sources with varying levels of reliability and scientific rigor. Students who lack adequate information literacy skills may struggle to distinguish between evidence-based information and misinformation, potentially affecting both academic performance and future professional decision-making.

The rapid expansion of digital information environments has also introduced new challenges associated with misinformation and disinformation. Johnston et al. (2026) argued that higher education institutions increasingly face the responsibility of preparing students to navigate complex information ecosystems characterized by information overload and varying information quality. In agricultural contexts, inaccurate information regarding farming practices, agricultural technologies, environmental management, or market conditions may have significant consequences. Therefore, developing critical evaluation skills has become an essential component of agricultural information literacy.

Institutional factors may also influence the effectiveness of information literacy initiatives. In some educational settings, information literacy remains insufficiently integrated into curricula and learning activities. Limited collaboration between academic libraries and teaching staff can reduce opportunities for students to develop information literacy skills within disciplinary contexts. Furthermore, constraints related to staffing, funding, technological resources, and professional development may affect libraries' capacities to deliver comprehensive information literacy programs. These challenges indicate that the successful promotion of agricultural information literacy requires institutional commitment and coordinated support from multiple stakeholders.

While these challenges are significant, the literature also highlights numerous opportunities for advancing agricultural information literacy. The ongoing digital

transformation of higher education has created new possibilities for information access, knowledge sharing, and instructional innovation. Merga & Mat Roni (2025) emphasized that digital technologies provide unprecedented opportunities for developing information literacy through online learning environments, interactive educational resources, and technology-enhanced instruction. Such developments enable academic libraries to reach broader student populations and provide more flexible learning opportunities.

The increasing availability of open-access resources and digital agricultural information platforms represents another important opportunity. Students now have access to a wide range of scholarly publications, agricultural databases, extension materials, and professional networks that were previously difficult to obtain. These resources can support both academic learning and professional skill development. Furthermore, digital tools allow students to engage with current agricultural knowledge, emerging technologies, and global agricultural issues in ways that were not possible in traditional information environments.

Recent discussions have also emphasized the importance of critical information literacy as a framework for addressing contemporary information challenges. Bouaamri & Otiike (2025) argued that information literacy should extend beyond technical information skills and include critical awareness of information production, dissemination, and use. This perspective is particularly relevant for vocational agriculture students, who must evaluate information from diverse stakeholders, including researchers, policymakers, industry actors, and digital media sources. Developing critical information literacy can help students become more reflective and responsible information users.

Based on the synthesis of the literature, a conceptual framework for agricultural information literacy development can be proposed. The framework suggests that academic libraries function as the primary enabling environment through the provision of information resources, instructional programs, technological support, and professional guidance. These library-based interventions facilitate the development of agricultural information literacy competencies, including information identification, information access, information evaluation, information utilization, and critical information awareness. The development of these competencies is further influenced by students' information needs, digital environments, educational experiences, and institutional support systems.

The framework further proposes that enhanced agricultural information literacy contributes to several educational and professional outcomes. Students who possess strong agricultural information literacy competencies are more capable of accessing reliable information, engaging in evidence-based learning, adopting agricultural innovations, and making informed decisions. Ultimately, these competencies support academic success, professional readiness, lifelong learning, and adaptability within an increasingly information-driven agricultural sector (Muid, 2026).

Overall, the literature demonstrates that the development of agricultural information literacy is influenced by both challenges and opportunities arising from technological, educational, and institutional factors. While barriers related to information access, digital competency, and information quality remain significant, advances in digital technologies, educational innovation, and library services provide promising opportunities for improvement. Consequently, academic libraries occupy a strategic position in facilitating

agricultural information literacy development and supporting vocational agriculture students in becoming competent and critical users of agricultural information.

CONCLUSION

This literature review demonstrates that academic libraries play a crucial role in promoting agricultural information literacy among vocational agriculture students. Agricultural information literacy is a multidimensional competency that encompasses the ability to identify information needs, access relevant information sources, evaluate information critically, and utilize information effectively in academic and professional contexts. As the agricultural sector becomes increasingly driven by information, technology, and innovation, these competencies are essential for supporting evidence-based learning, informed decision-making, and professional preparedness. The findings also reveal that academic libraries have evolved from traditional information repositories into learning hubs that actively support information literacy development through library instruction, information literacy training, educational collaboration, and digital learning services.

The review further indicates that vocational agriculture students possess diverse information needs that include academic, technical, professional, and digital dimensions. To address these needs, students require not only access to reliable information resources but also the skills necessary to navigate increasingly complex information environments. Although the development of agricultural information literacy faces challenges such as unequal access to information resources, varying levels of digital competency, misinformation, and limited institutional integration of information literacy initiatives, significant opportunities are provided by digital transformation, open-access resources, technological innovation, and the expanding educational role of academic libraries.

Despite its contributions, this study is limited by its reliance on previously published literature and the relatively small number of studies that specifically examine the relationship between academic libraries, agricultural information literacy, and vocational agriculture students. Therefore, future research is recommended to conduct empirical investigations involving students, librarians, and educators to better understand the effectiveness of library-based information literacy programs. Further studies may also explore the integration of agricultural information literacy into vocational curricula and examine how digital technologies can be utilized to strengthen information literacy competencies in agricultural education.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

ChatGPT was used by the author(s) as a supporting tool during the preparation of this manuscript to enhance clarity, readability, and linguistic quality. The author(s) independently evaluated and revised the AI-assisted outputs and accept full responsibility for the final content of the manuscript.

REFERENCES

Abdullahi, A., Amao, M. A., Abubakar, U., & Ibrahim, M. M. (2024). Information Literacy Skills of Librarians and Service Delivery in the 21st Century: A Comprehensive Analysis. *African*

- Journal of Humanities and Contemporary Education Research*, 15(1), 390–398. <https://doi.org/10.62154/twqmk778>
- Afrianto, W. F., Wati, S. I., Putra, R. P., & Hidayatullah, T. (2022). Empowerment of Farmers Through the Online Extension in Improving Agricultural Information Literacy. *Jurnal Pengabdian Magister Pendidikan IPA*, 5(2), 374–378. <https://doi.org/10.29303/jpmpmi.v5i2.1637>
- Ajiboye, B. A., Onifade, F. N., Ogunlana, E. K., & Oladeinde, A. A. (2022). Information Literacy and Research Skills Programme for Postgraduate Students: The First-Hand Experience of a Federal University of Agriculture in Nigeria. *African Journal of Library, Archives and Information Science*, 32(1), 97–108. <https://doi.org/10.4314/6p416089>
- Ali, N., Shoaib, M., & Abdullah, F. (2023). Information literacy and research support services in academic libraries: A bibliometric analysis from 2001 to 2020. *Journal of Information Science*, 49(6), 1593–1606. <https://doi.org/10.1177/01655515211068169>
- Ashiq, M., Hira, A., & Saeed, A. (2025). The relationship between information literacy and academic performance: A meta-analysis study. *Performance Measurement and Metrics*, 27(1), 81–97. <https://doi.org/10.1108/PMM-04-2025-0020>
- Bouaamri, A., & Otiike, F. (2025). Integration of Critical Information Literacy Skills in Academic Libraries in Africa. *Open Information Science*, 9(1). <https://doi.org/10.1515/opis-2025-0020>
- Caffrey, C., Lee, H., Withorn, T., Clarke, M., Castañeda, A., Macomber, K., Jackson, K. M., Eslami, J., Haas, A., Philo, T., Galoozis, E., Vermeer, W., Andora, A., & Kohn, K. P. (2022). Library instruction and information literacy 2021. *Reference Services Review*, 50(3–4), 271–355. <https://doi.org/10.1108/RSR-09-2022-0035>
- DaLomba, E., Kavanaugh, E., Manbeck, K., O’Neill, S., Soldevilla, K., Watson, M., & McLaughlin, E. (2020). The Use of an Embedded Librarian to Enhance Student Information Literacy Skills: A Pilot Study. *Journal of Occupational Therapy Education (JOTE)*, 4(2). <https://doi.org/10.26681/jote.2020.040204>
- Dilrukshi, W. P. T., & Wickramasooriya, H. (2026). Patterns of Information Seeking and User Needs of Agricultural Scientists: A Case Study Based on Major Research Institutes in Sri Lanka’s Plantation Sector. *Journal of the University Librarians Association of Sri Lanka*, 29(1). <https://doi.org/10.4038/jula.v29i1.8114>
- Du, Y., Feng, H., Zhang, Q., & Zheng, S. (2025). Influence of Information Literacy on Farmers’ Green Production Technology Adoption Behavior: The Moderating Role of Risk Attitude. *Agriculture*, 15(7). <https://doi.org/10.3390/agriculture15070701>
- Gebeyehu, H. Z., & Jira, Y. S. (2024). An assessment of information seeking behavior of agricultural agents to retrieve need-based information in Sidama regional state of Ethiopia. *Heliyon*, 10(7). <https://doi.org/10.1016/j.heliyon.2024.e28540>
- Grabowsky, A., & Weisbrod, L. (2020). The Effectiveness of Library Instruction for Graduate/Professional Students: A Systematic Review and Meta-Analysis. *Evidence Based Library and Information Practice*, 15(2), 100–137. <https://doi.org/10.18438/ebliip29657>
- Gudeta, A., Lemma, T., & Ndemo, E. (2021). Information Needs and Information Seeking Behavior of Agricultural Researchers of Fadis and Mechara Agricultural Research Centers, Ethiopia. <https://papers.ssrn.com/abstract=3874806>

- Harkness, S. J., Rusk, F. A., & Rubio, R. (2021). Using an Embedded Librarian Model to Increase Information Literacy in Political Science Research Methods. *Journal of Political Science Education*, 17(3), 385–405. <https://doi.org/10.1080/15512169.2019.1667810>
- Jalali, A., Bagheri, A., Allahyari, M. S., Aghjehgheshlagh, F. M., Surjula, J., & Michailidis, A. (2020). Information needs and information seeking behaviour of dairy farm managers. *International Journal of Sustainable Agricultural Management and Informatics*, 6(2), 107–122. <https://doi.org/10.1504/IJSAMI.2020.108359>
- Jing, Q., Panyadee, C., Kaewtip, S., & Yossuck, P. (2024). The Level of Information Literacy and its Influencing Factors of Agricultural Students in Higher Education of Yunnan, China. *วารสารผลิิตกรรมการเกษตร*, 6(3), 30–38.
- Johnston, N., Yerbury, H., & Henninger, M. (2026). Academic Librarians and Information Literacy Practice in an Age of Mis/Disinformation. *Journal of the Australian Library and Information Association*, 75(2), 321–339. <https://doi.org/10.1080/24750158.2026.2648061>
- Jones, W. L., & Mastroilli, T. (2022). Assessing the Impact of an Information Literacy Course on Students' Academic Achievement: A Mixed-Methods Study. *Evidence Based Library and Information Practice*, 17(2), 61–87. <https://doi.org/10.18438/ebliip30090>
- Kumar, D., & Devi, J. (2020). Farmers' Perspective on Agricultural Information Literacy: A Case Study of Jind District, India. *Library Philosophy and Practice (e-Journal)*. <https://scholarworks.sjsu.edu/libphilprac/3836>
- Mbagwu, F. C., Lyaka, M., Kiwelu, J. E., Nyantakyi-Baah, L., & Holmner, M. A. (2020). Achieving sustainable development goals two and three: Role of academic libraries. <http://hdl.handle.net/2263/80588>
- Merga, M. K., & Mat Roni, S. (2025). School Library Professionals' Perceptions of Students' Digital Information Literacy. *Journal of Library Administration*, 65(4), 397–411. <https://doi.org/10.1080/01930826.2025.2475701>
- Moin Ud Din, G., Mairaj, M. I., & Sheikh, A. (2022). Information literacy instruction in university libraries of Islamabad, Pakistan: A study of librarians' perceptions, practices, barriers, and strategies. *The Electronic Library*, 40(6), 698–711. <https://doi.org/10.1108/EL-10-2021-0193>
- Mughari, S., Naveed, M. A., & Rafique, G. M. (2024). Information literate students are more engaged and successful: Role of information literacy in higher education. *Online Information Review*, 49(2), 418–437. <https://doi.org/10.1108/OIR-09-2023-0478>
- Muid, M. A. (2026). Information Literacy Skills of Students in Pesantren Environments: A SCONUL Seven Pillars Analysis in Language Learning Contexts. *Literaturia: Journal of Linguistics, Literature, and Language Teaching*, 1(1), 17–26. <https://doi.org/10.38073/literaturia.v1i1.4649>
- Nichols Hess, A. (2020). Academic Librarians' Teaching Identities and Work Experiences: Exploring Relationships to Support Perspective Transformation in Information Literacy Instruction. *Journal of Library Administration*, 60(4), 331–353. <https://doi.org/10.1080/01930826.2020.1721939>
- Obi, B. B., & Oladokun, B. (2023). Security Measures in Meeting Information Needs and Seeking Behaviour of Agricultural Science Students in Nigerian Universities. *Southern African Journal of Security*, 1, 12-pages-12 pages. <https://doi.org/10.25159/3005-4222/14383>

- Ogbuagu, O. P., Paul, O., Onyenachi, J. C., & Ezenwa, E. N. (2022). Online Information Searching and Evaluation Skills of Postgraduate Students of Library and Information Science in Michael Okpara University of Agriculture, Umudike. *Lagos Journal of Library and Information Science*, 11(1 and 2), 230–242.
- Parmar, S., & Pateria, R. K. (2020). Digital information literacy competencies among pg students of CCS Haryana Agricultural University, Hisar: A study. *International Journal of Information Dissemination and Technology*, 10(2), 88–93.
- Rath, L. (2022). Factors that influence librarian definitions of information literacy. *The Journal of Academic Librarianship*, 48(6), 102597. <https://doi.org/10.1016/j.acalib.2022.102597>
- Rathod M. S., G. (2025). *Challenges and Barriers to Implementing Information Literacy Programs in Higher Education: A Study of Karnataka's Academic Institutions*. <https://doi.org/10.2139/ssrn.5581192>
- Salauddin, N. (2024). An investigation into the unveiling of information-seeking anxiety among agriculture university library users. *Collection and Curation*, 43(4), 129–140. <https://doi.org/10.1108/CC-11-2023-0037>
- Samim, A. W., Kumar, P., & Kaur, P. (2020). Information Seeking Behaviour of Post Graduate Students of Punjab Agricultural University, Ludhiana. *Journal of Community Mobilization and Sustainable Development*, 15(2), 413–419.
- Shi, Y., Peng, F., & Sun, F. (2022). A Blended Learning Model Based on Smart Learning Environment to Improve College Students' Information Literacy. *IEEE Access*, 10, 89485–89498. <https://doi.org/10.1109/ACCESS.2022.3201105>
- Sun, C., Liu, J., Razmerita, L., Xu, Y., & Qi, J. (2022). Higher Education to Support Sustainable Development: The Influence of Information Literacy and Online Learning Process on Chinese Postgraduates' Innovation Performance. *Sustainability*, 14(13). <https://doi.org/10.3390/su14137789>
- Tian, X., Sun, R. Y., & Li, Z. H. (2023). EFFECTS OF INFORMATION LITERACY ON FARMERS' TRANSITION TO GREEN PRODUCTION. *Applied Ecology and Environmental Research*, 21(4), 3445–3463. https://doi.org/10.15666/aeer/2104_34453463
- Wann, T., Khongtim, J., & Chyne, R. C. (2024). Assessing the impact of information literacy on farmers' decision-making processes: A mixed-methods approach. *IFLA Journal*, 50(3), 463–478. <https://doi.org/10.1177/03400352241261730>
- Withorn, T., Messer Kimmitt, J., Caffrey, C., Andora, A., Springfield, C., Ospina, D., Clarke, M., Martinez, G., Castañeda, A., Haas, A., & Vermeer, W. (2020). Library instruction and information literacy 2019. *Reference Services Review*, 48(4), 601–682. <https://doi.org/10.1108/RSR-08-2020-0057>
- Zhao, S., Luo, R., Sabina, C., & Pillon, K. (2023). *The Effect of Information Literacy Training on Graduate Students' Ability to Use Library Resources*. <https://doi.org/10.5860/crl.84.1.7>
- Zhaoxia, M., & คำเจริญ, น. (2025). Development of educational information literacy of vocational students at Guangxi Vocational University of agriculture in China. *วิทยาการบรรณารักษะสมัยใหม่*, 2(5), 264–275.