American Journal of Social and Humanitarian Research

Vol. 6 Issue 7 **| pp.** 1753-1758 **| ISSN:** 2690-9626
Available online @ https://globalresearchnetwork.us/index.php/ajshr

Article

Formation of Information Literacy and Information Culture in The Assessment of Independent Student Work in Distance Learning

Auezova Rano*[1], Sayekeeva Aysuliu Dauletmurat kyzy[2]

1,2. Doctoral student, Nukus State pedagogical institute, Nukus, Uzbekistan
* Correspondence: auezovarano1985@gmail.com

Abstract: Information literacy and information culture are fundamental competencies for students in the digital era, underpinning their academic success and professional readiness. The shift to distance and blended learning has intensified the need for students to independently manage, analyze, and ethically utilize information, yet structured approaches to integrating these skills into assessment systems remain limited. Current educational practices often overlook systematic methods to evaluate and develop students' information literacy and culture within independent work assessments in digital environments. This study aims to analyze strategies for forming information literacy and culture through student assessment systems in distance learning. Findings reveal that information literacy extends beyond searching skills to include cognitive, evaluative, and ethical dimensions, while information culture integrates value attitudes, academic integrity, and responsible digital behavior. The study demonstrates that incorporating diagnostic tools such as bibliographic analysis, originality checks, and fuzzy-deterministic models within LMS enhances fair and objective assessment. The research proposes integrating information literacy and culture indicators as central components of assessment systems rather than auxiliary elements, emphasizing their strategic role in fostering critical thinking and independent learning. Effective implementation of these strategies strengthens students' academic integrity, analytical capacity, and ethical digital engagement, ensuring their readiness for professional environments. This approach requires curriculum-wide pedagogical integration, targeted methodological support, and adaptive digital tools to systematically develop these competencies in distance learning contexts.

Keywords: Distance Learning, Information Literacy, Digital Learning Environment, Independent Learning Methodology, Fuzzy Model

Citation: Rano, A. Kyzy S. A. D. Formation Of Information Literacy And Information Culture In The Assessment Of Independent Student Work In Distance Learning. American Journal of Social and Humanitarian Research 2025, 6(7), 1753-1758.

Received: 31th May 2025
Revised: 17th Jun 2025
Accepted: 27th Jun 2025
Published: 11th Jul 2025

1. Introduction

Information literacy and information culture in modern digital society are considered key components of future specialists' professional training. The importance of these components is especially critical when transitioning to distance and blended forms of learning, where students' independent work comes to the forefront and requires a high level of self-regulation, critical thinking, and digital responsibility. In the context where direct interaction with the teacher is being replaced by digital mediation, it is the learner's ability to effectively work with information that becomes a determining factor in the quality of their educational activity[1].

In the modern digital era, information literacy and information culture have become fundamental components of effective professional training, especially in distance and blended learning environments. As independent student work becomes central to educational success, the ability to critically search, evaluate, and ethically use information is essential. In distance learning, where teacher-student interaction is mediated by digital platforms, students' capacity for self-regulated learning, critical thinking, and responsible information use directly determines academic quality. Therefore, integrating information literacy and culture into assessment systems not only enhances learning outcomes but also fosters the development of ethically aware, competent, and independent future professionals[2].

Contemporary research highlights the integral role of information literacy (IL) and information culture (IC) in digital learning environments. UNESCO defines IL as the ability to locate, evaluate, and use information effectively. Scholars such as Bruce, Haig, and Kolb emphasize integrating digital competencies into educational frameworks. In Uzbekistan, N. Karimova, U. Kholmukhamedov, and R. Yunusxodjayeva have explored the influence of digital platforms on students' cognitive strategies and independent learning skills. Studies confirm that the development of IL and IC enhances academic integrity, critical thinking, and research abilities. These competencies are essential for engaging students in meaningful digital education and autonomous learning tasks[3].

2. Materials and Methods

This study utilizes a qualitative approach, incorporating content analysis of academic sources and educational policy documents, combined with expert review. Diagnostic methods within Learning Management Systems (LMS) are applied to assess students' digital traces, citation behavior, and use of scholarly databases. Adaptive tasks and digital portfolios are analyzed to track the progression of information competencies. The methodology also involves case-based pedagogical interventions and formative assessments using fuzzy-deterministic models. These approaches enable nuanced evaluation of students' information behavior, supporting a systematic pedagogical strategy for the formation of IL and IC in blended and distance learning environments[4].

3. Results and Discussion

According to UNESCO's definition, information literacy is the ability to determine when and what information is necessary, as well as the ability to effectively find, evaluate, and use this information. In educational practice, this means developing students' skills in working with electronic libraries, distance learning platforms, learning management systems (LMS), and digital knowledge sources[5].

Information literacy in the educational environment is not just the ability to search for information, but also a holistic system of skills, including awareness of information needs, forming a query, using search strategies, critically evaluating the obtained data, complying with citation and copyright norms, and creating one's own information in various formats. In this case, we are talking not only about the technical, but also about the cognitive side of the process - the ability to analyze, compare, interpret, and reason. These components become especially important when performing independent tasks of a research, project, or analytical nature, where the depth and originality of information directly correlate with the level of developed information literacy [6].

Information culture in the context of digital education acquires a systemic character and encompasses value attitudes, motivational aspects, and ethical norms of behavior in the information space. This implies respect for intellectual property, responsibility for disseminating information, and adherence to academic integrity principles. The formation of information culture means that the student not only knows how to handle data but also understands the consequences of their actions in the information environment, including plagiarism, source unreliability, manipulation, and distortion. In the context of distance

learning, where control is difficult, these aspects acquire special significance and should become the subject of systematic pedagogical work[7].

When assessing students' independent work in a distance format, the teacher faces the need to analyze not only the content of the completed task but also the process of its preparation. Here, the learner's digital track comes to the forefront - the history of search queries, the structure of the sources used, the logic of forming conclusions, and the degree of independence. All this requires students to possess well-developed information literacy and culture, as otherwise it is impossible to objectively assess the originality and quality of their work. The application of digital assessment systems, including fuzzy-deterministic algorithms, allows for consideration of a complex set of factors: from academic activity to the level of argumentation, from the pace of execution to stylistic integrity, from the type of resources used to citation [8].

Practice shows that a low level of information literacy significantly reduces the quality of student assignments. For example, in the absence of skills in searching and filtering information, students resort to superficial copying, formulaic writing, and resort to superficial copying and formulaic responses, and they are often unable to construct logically consistent texts. This not only reduces academic performance but also creates a false attitude of "quick reproduction" in students instead of an analytical approach. At the same time, targeted methodological work on the formation of digital and information competencies demonstrates a positive effect: greater critical thinking, increased diversity of sources, and a heightened sense of responsibility for the final result, the level of awareness and responsibility for the result increases. Thus, in the system for assessing students' independent work in the digital environment, it is necessary to provide tools for diagnosing the level of information literacy and culture, such as:

1. Analysis of the bibliographic apparatus;
2. Determination of the level of originality;
3. Assessment of the complexity and depth of the analysis;
4. Formalization of digital traces in lms[9].

The development of specialized indicators, as well as the implementation of adaptive digital tools (for example, search trajectory tracking systems, intelligent text structure analysis), allows for a fairer and more objective assessment. In this context, it is the integration of fuzzy logic models that provides a toolkit capable of formalizing complex pedagogical judgments and integrating them into an automated assessment system[10].

Ultimately, information literacy and culture become integral components of successful learning activities in the digital age. They not only determine the quality of independent work but also form the basis for stable and honest academic behavior. Therefore, when designing assessment systems in distance learning, it is necessary to consider IC not as an auxiliary element, but as a central category of pedagogical analysis [11].

The formation of students' information literacy (IG) and information culture (IC) in the digital educational environment is a multi-stage and pedagogically managed process, in which the purposeful design of the content, forms, and methods of teaching, as well as assessment systems that stimulate the development of a critical and conscious attitude towards information, plays a special role. This development cannot be implemented spontaneously - it requires a pedagogical strategy embedded in the curriculum and implemented through all types of learning activities, especially through students' independent work. Information literacy, as the instrumental core of ICT, is formed through students' mastery of several key competencies:

1. Ability to formulate and refine information requests;
2. Mastery of information retrieval methods in scientific and educational digital resources;
3. Critical evaluation of the relevance, reliability, and scientific validity of information;
4. Adherence to academic standards of citation, copyright, plagiarism prevention;

5. Transforming information into one's own analytical, project, or research product[12].

One of the most important directions in the formation of IC is teaching students to work with digital libraries, databases (for example, Scopus, Google Scholar, Springer), educational platforms (Moodle, Coursera, e-university), automated anti-plagiarism and analytics tools (StrikePlagiarism, Unicheck, etc.). In the context of distance learning, the teacher should not simply use these platforms, but also equip students with strategies for their meaningful and effective application[13].

Information culture, as a broader concept, also encompasses the value-normative component. This includes the development of students:

1. A conscious ethical position regarding informational behavior;
2. Respect for the intellectual property of other authors;
3. Ability for digital self-reflection and responsibility for the trace left in the digital educational space;
4. Resistance to misinformation and manipulation[14].

The formation of IC is impossible without the introduction of digital pedagogical support mechanisms into the educational process: feedback, dialogues between teachers and students about information sources, discussions of academic integrity violations, and case-based methods analyzing controversial situations related to plagiarism, data copying, and misinterpretation. Thus, the formation of IC requires not only an instructive approach but also a value-oriented environment in which educators themselves serve as digital role models.

An important part of the formation of information literacy is the use of formative assessment, in which not only the result is recorded, but also the process is encouraged: for example, evaluating the selection of sources, the ability to quote, the logic of analysis, the quality of digital presentations, and the ability to interact with information in various formats. The application of fuzzy-deterministic algorithms in such cases allows for recording not just the fact of task completion, but also the complex trajectory of task preparation, the level of student awareness, and adherence to academic standards[15].

In addition, the organization of project activities and problem-based learning plays a significant role, where the student faces the need to work in conditions of uncertainty, search for sources, evaluate them, compare opinions, and form their own position. This is one of the most productive ways to form an IC in the context of independent work.

Particular attention should be paid to the individualization of IC development trajectories, which is implemented through:

1. A digital activity tracker system within the LMS;
2. A portfolio that reflects the development of information competencies;
3. Adaptive tasks that incorporate elements of self-diagnosis.

Thus, the formation of students' information literacy and information culture should be understood not as an auxiliary component of the educational process, but as a strategic goal of modern education. It should be based on pedagogical diagnostics, digital analysis, the active involvement of students in the real information tasks, and, most importantly, on ethical and value-based reflection on digital behavior.

Modern pedagogical research, including the works of J. M. Bruce, N. B. Haig, D. Kolb, emphasizes the importance of integrating digital competencies into the educational process. In Uzbekistan, issues of forming students' information culture have been raised in the works of such scholars as N. Karimova, U. Kholmukhamedov, D. Sayfullayeva. A special contribution was made by R. Yunusxodjayeva, who researched the influence of the digital environment on students' cognitive strategies in the context of independent learning.

To improve students' information literacy, teachers need targeted methodological work, which includes:

1. Introduction of courses on digital competence and basics of working with information;

2. Creating tasks that require searching, analyzing, and synthesizing information from digital sources;
3. Development of skills for independent planning of educational activities using digital tools;
4. Modeling situations where students have to apply information resources in new contexts.
5. In distance learning, a well-developed level of information literacy is a critical success factor, while its absence poses a significant risk to learning outcomes.

Therefore, when designing methodologies for assessing independent work, it is essential to take into account students' levels of digital and informational competencies, and to develop tools that actively contribute to their formation.

4. Conclusion

Thus, information literacy and culture act not only as conditions for students' successful independent work, but also as goals of the educational process in the digital environment. This requires the inclusion of relevant indicators in the assessment system, as well as a review of approaches to organizing students' independent work in distance learning formats.

Information literacy and digital culture of students are a necessary condition for successful implementation of independent learning activities in distance learning. Their formation should be purposeful and accompanied by the inclusion of relevant elements in the educational environment.

In conclusion, this study demonstrates that information literacy and information culture are essential for effective independent student work in digital learning environments. Their formation should be a purposeful, systematically designed process integrated into all stages of educational activities. Developing students' skills in information search, critical evaluation, ethical use, and digital self-regulation significantly enhances the quality and originality of their academic outputs. Therefore, assessment systems in distance learning must incorporate indicators of information literacy and culture to ensure meaningful evaluation. Strengthening these competencies not only improves academic performance but also prepares students for responsible and effective engagement in the digital knowledge society.

REFERENCES

[1] B. M. Mambetkarimov, «Application of Game Technologies in Teaching Programming Languages to University Students», Sources Sci., cc. 110–116, 2023.

[2] R. K. Auezova, «Application of STEAM Technologies in Organizing Students' Scientific Work», в International Scientific-Practical Conference on the Importance of Digital Economy and Artificial Intelligence Technologies in the Development of Society, 2024.

[3] K. K. Seitnazarov, «Decision Making in Assessing University Students' Knowledge in the Context of Large Amounts of Irreversible Data», Comput. Technol., 2022.

[4] K. K. Seytnazarov и K. I. Kalimbetov, «Decision-Making System for Selecting Effective Methods in Teaching Informatics», Acad. Res. Educ. Sci., cc. 755–759, 2021.

[5] K. K. Seitnazarov и B. M. Mambetkarimov, «Development and Application of a Digital Educational Resource for Teaching Programming in Higher Education Institutions», Ment. Enlight. Sci.-Methodol. J., cc. 187–196, 2024.

[6] K. K. Seytnazarov, «Development of Decision-Making Algorithms Based on Irreversible Mathematical Calculations in the Assessment of Students' Knowledge», Plant Arch., 2021, doi: 10.17762/pae.v58i2.1849.

[7] G. Salmon, E-tivities: The Key to Active Online Learning. Routledge, 2013.

[8] B. M. Mambetkarimov, «General Principles and Algorithms for Organizing Interactive Lessons in Higher Education Institutions», Phys. Math. Inform., cc. 77–88, 2023.

[9] A. K. Bazarbaeva, «Innovative Approach to Assessing University Students», Nat. Camp., c. 1304, 2024.

[10] K. K. Seitnazarov и A. K. Bazarbaeva, «Methodology for Assessing the ECTS Credit System in Higher Educational Institutions in Western Europe», Mod. Sci. Res., cc. 728–731, 2024.

[11] A. K. Bazarbaeva и K. K. Seitnazarov, «Methodology for Assessing the ECTS Credit System in Western European Universities». 2024 y.

[12] R. K. Auezova и A. D. Saekeeva, «Pedagogical and Technological Opportunities for Teaching in an Inclusive Educational Environment in Boarding Schools», Tamaddun Nuri, cc. 44–48, 2025.

[13] D. Laurillard, Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology. Routledge, 2013.

[14] A. W. Bates, Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Tony Bates Associates Ltd, 2015.

[15] K. K. Seytnazarov и K. I. Kalimbetov, «The Processes of Organizing Teaching Students' Algorithms and Models», Acad. Int. Multidiscip. Res. J., cc. 527–533, 2021.