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Information Literacy Skill Standards and Models: A Comprehensive Literature Review

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Abstract

This paper provides a comprehensive review of key information literacy (IL) standards and theoretical models, exploring their development, implementation, and impact on educational practices. IL, defined as the ability to recognize information needs and effectively locate, evaluate, and use information, has become increasingly important in the digital age. The literature review examines the evolution of IL from its early focus on library skills to its integration with digital and media literacy. Major IL standards, including those developed by the Association of College and Research Libraries (ACRL), the International Federation of Library Associations and Institutions (IFLA), and UNESCO, are analyzed alongside theoretical models such as the Big6, the Seven Pillars, and Carol Kuhlthau's Information Search Process. The review highlights the critical role of IL in fostering critical thinking and lifelong learning, while also addressing challenges in implementing IL instruction and assessment. The paper concludes by discussing the need for ongoing adaptation of IL frameworks to meet the evolving demands of the digital information landscape.

Keywords: Information literacy, ACRL Standards, Big6 Model, Seven Pillars, Information Search Process, digital literacy, media literacy, educational practices.

Introduction

Information literacy (IL) is a critical skill in today's information-rich society. It encompasses the abilities to recognize when information is needed, and to locate, evaluate, and use the needed information effectively. This literature review aims to synthesize the various standards and models that have been developed to define and measure IL skills.

Definition of Information Literacy (IL)

Information literacy (IL) encompasses a set of abilities requiring individuals to recognize when information is needed and to locate, evaluate, and effectively use the needed information. According to the Association of College and Research Libraries (ACRL), an information-literate individual is capable of critical thinking and possesses a set of competencies that enable them to effectively find, evaluate, and use information in various contexts.

Importance of IL in the Digital Age

In today's digital age, the importance of IL has dramatically

increased due to the overwhelming amount of information available online. The digital revolution has transformed how information is accessed, shared, and utilized. Individuals must navigate a complex landscape of digital resources, ranging from academic databases to social media, making IL skills essential for academic success, professional development, and informed citizenship. IL helps individuals discern credible sources, avoid misinformation, and make well-informed decisions.

Purpose and Scope of the Literature Review

The purpose of this literature review is to provide a comprehensive analysis of the existing standards and models of IL, examining their historical evolution, key components, and impact on educational practices. By synthesizing the research, this review aims to highlight best practices, identify gaps, and suggest future directions for IL instruction and research. The scope includes major IL standards developed by educational and professional organizations, as well as theoretical models that guide IL instruction and assessment.

Historical Evolution of Information Literacy

The concept of IL has evolved significantly since its inception in the 1970s. Initially focused on library skills, the concept expanded to include critical thinking and problem-solving skills, particularly with the advent of digital technologies.

Early Concepts of IL (1970s-1990s)

The concept of IL emerged in the 1970s as the information environment began to expand rapidly. The term "information literacy" was first coined by Paul Zurkowski in 1974, who emphasized the need for individuals to be skilled in using information tools and resources. During this period, IL was primarily associated with library skills and the ability to use bibliographic databases.

In the 1980s and 1990s, the scope of IL broadened to include critical thinking and problem-solving skills. Educators and librarians recognized that IL was not just about finding information but also about evaluating and using it effectively. This period saw the development of various instructional programs aimed at enhancing students' IL skills, particularly in academic settings.

Emergence of Formal Standards and Frameworks

The late 1990s and early 2000s marked a significant shift with the development of formal IL standards and frameworks. The Association of College and Research Libraries (ACRL) published the "Information Literacy Competency Standards for Higher Education" in 2000, which became a foundational document for IL instruction in higher education. These standards outlined five key competencies, providing a structured approach to IL education.

Internationally, organizations such as the International Federation of Library Associations and Institutions (IFLA) and UNESCO also contributed to the development of IL guidelines and frameworks. The IFLA's "Guidelines on Information Literacy for Lifelong Learning" and UNESCO's "Media and Information Literacy Framework" highlighted the global importance of IL and its role in lifelong learning.

Influence of Technology and the Internet

The rise of the internet and digital technologies has profoundly impacted IL. The abundance of information available online has made it imperative for individuals to possess advanced IL skills to navigate digital environments effectively. The digital age has introduced new challenges, such as information overload, digital divide, and the prevalence of misinformation.

In response to these challenges, IL frameworks have evolved to include digital literacy, media literacy, and information ethics. The ACRL's "Framework for Information Literacy for Higher Education," introduced in 2015, reflects this evolution by emphasizing threshold concepts and meta literacy, recognizing the interconnected nature of digital and information literacy.

The integration of technology into IL instruction has also led to innovative teaching methods, including online tutorials, interactive modules, and the use of social media for information dissemination. These advancements underscore the dynamic nature of IL and the need for ongoing adaptation to technological changes.

This historical overview sets the stage for a deeper exploration of major IL standards and theoretical models, which will be examined in the following sections of this literature review.

Major Information Literacy Standards

ACRL Information Literacy Competency Standards for Higher Education (2000)

Overview of the Standards

The ACRL Information Literacy Competency Standards for Higher Education, established in 2000 by the Association of College and Research Libraries (ACRL), provided a foundational set of guidelines aimed at defining and promoting information literacy (IL) within higher education. These standards were designed to assist librarians and educators in developing IL programs, facilitating instruction, and assessing students' IL skills. The document formalized IL as a critical set of competencies essential for academic success, lifelong learning, and effective participation in society.

Key Competencies and Performance Indicators

The ACRL Standards identified five core competencies that an information-literate student should develop:

- 1. Determine the Nature and Extent of the Information Needed**
 - Students should be able to clearly define a research topic or information need and understand the range and types of information available to address it.
 - 2. Access Information Effectively and Efficiently**
 - This competency focuses on the ability to develop and implement effective search strategies, using appropriate tools and resources to find relevant information.
 - 3. Evaluate Information and Its Sources Critically**
 - Students must be able to assess the credibility, relevance, and reliability of information sources, and integrate this information into their knowledge base and value system.
 - 4. Use Information Effectively to Accomplish a Specific Purpose**
 - The ability to organize, apply, and communicate information effectively to achieve a desired outcome or complete a specific task.
 - 5. Understand the Economic, Legal, and Social Issues Surrounding the Use of Information**
 - This competency highlights the importance of understanding the ethical and legal considerations related to information use, including issues of plagiarism, intellectual property, and information privacy.
- Each competency was accompanied by performance indicators and outcomes that provided measurable benchmarks for assessing student progress.

Impact and Adoption in Higher Education

The ACRL Standards were widely adopted in higher education institutions across the United States and internationally. They influenced the design of IL instruction programs, curriculum development, and assessment practices. Many academic libraries integrated these standards into their instruction and outreach efforts, often collaborating with faculty to embed IL competencies into course syllabi and assignments. The standards also served as a foundation for accreditation processes, helping institutions demonstrate their commitment to fostering critical thinking and information skills among students.

IFLA Guidelines on Information Literacy for Lifelong Learning

Key Principles and Objectives

The IFLA Guidelines on Information Literacy for Lifelong Learning, published by the International Federation of Library Associations and Institutions (IFLA), aimed to promote IL as a critical skill for lifelong learning. These guidelines emphasize that IL is essential not only in formal education but also in personal, social, and professional contexts. The guidelines advocate for the integration of IL into all levels of education and across all disciplines, underscoring its role in enabling individuals to navigate the complexities of the information society.

Key Objectives of the IFLA Guidelines Include

- **Advocacy for IL:** Promoting awareness of the importance of IL among policymakers, educators, and the public.
- **Curriculum Integration:** Encouraging the inclusion of IL in educational curricula at all levels.
- **Support for IL Instruction:** Providing guidance for librarians and educators on designing and delivering effective IL programs.
- **Global Perspective on IL:** Emphasizing the universal relevance of IL and its role in achieving educational and societal goals globally.

Global Perspective on IL

The IFLA Guidelines reflect a global perspective on IL, recognizing the diverse educational and cultural contexts in which IL is practiced. The guidelines highlight the need for IL programs to be adaptable to different regions and communities while maintaining core principles that promote critical thinking, effective information use, and lifelong learning. They also stress the importance of collaboration among librarians, educators, and other stakeholders to advance IL on a global scale.

UNESCO Media and Information Literacy Framework

Integration of Media Literacy with Information Literacy

The UNESCO Media and Information Literacy (MIL) Framework integrates media literacy with information literacy, recognizing the interconnected nature of these competencies in the digital age. The framework is based on the understanding that media and information are converging, and individuals need the skills to critically analyze media content as well as access and use information effectively.

Skills and Competencies Outlined by UNESCO

The UNESCO MIL Framework outlines a comprehensive set of skills and competencies, including:

- **Accessing Information and Media:** The ability to locate, retrieve, and use information and media content from a variety of sources.
- **Critical Evaluation:** The capacity to critically assess the credibility, accuracy, and bias of information and media content.
- **Creation and Communication:** Skills in creating, producing, and sharing information and media content responsibly.
- **Ethical Use of Information:** Understanding the ethical and legal implications of information and media use, including issues related to copyright, privacy, and digital rights.

- **Cultural Understanding:** Recognizing and respecting cultural diversity in media and information content.

The UNESCO framework advocates for the integration of these skills into educational systems and promotes MIL as a key component of citizenship education, enabling individuals to participate fully in democratic societies.

Association of College and Research Libraries (ACRL) Framework for Information Literacy for Higher Education (2015)

Shift from Standards to a Framework

In 2015, the ACRL introduced the Framework for Information Literacy for Higher Education, marking a significant shift from the earlier standards-based approach. The Framework is based on the concept of threshold concepts—core ideas and processes that are critical for students to master in order to progress in their understanding of IL. Unlike the prescriptive nature of the 2000 Standards, the Framework provides a more flexible, conceptual approach to IL instruction, allowing for adaptation to diverse educational contexts and disciplines.

Six Threshold Concepts

The ACRL Framework is organized around six threshold concepts, known as frames:

1. Authority is Constructed and Contextual

- Understanding that the credibility of information depends on the context in which it is produced and used, and that authority is a dynamic, social construct.

2. Information Creation as a Process

- Recognizing that information is created through various processes and that the form and dissemination of information impact its value.

3. Information Has Value

- Acknowledging that information possesses several dimensions of value, including as a commodity, as a means of education, and as a tool for influencing social change.

4. Research as Inquiry

- Viewing research as an iterative process that involves asking questions, exploring information, and refining understanding over time.

5. Scholarship as Conversation

- Understanding that scholarly discourse is a conversation in which ideas are debated, critiqued, and built upon over time.

6. Searching as Strategic Exploration

- Recognizing that information searching is a complex, non-linear process that requires flexibility, persistence, and the use of multiple strategies.

Implementation and Challenges

The implementation of the ACRL Framework has presented both opportunities and challenges for academic institutions. The flexible nature of the Framework allows for creativity in IL instruction, enabling educators to tailor their teaching to the specific needs of their students and disciplines. However, the shift from concrete standards to a more abstract framework has also raised concerns about the difficulty of assessing student learning and the need for extensive professional development for librarians and educators. Institutions that have adopted the Framework have found it to be a valuable tool for fostering deeper engagement with IL

concepts and for promoting a more integrated approach to teaching and learning. However, challenges remain in ensuring that the Framework is effectively integrated into curricula and that educators are adequately supported in its use.

Theoretical Models of Information Literacy

Big6 Model

Overview

The Big6 Model, developed by Mike Eisenberg and Bob Berkowitz, is a widely recognized process model for information literacy that is particularly popular in K-12 education. The model provides a structured, step-by-step approach to solving information problems, making it accessible for students and educators alike. The Big6 framework is designed to help users efficiently find, evaluate, and use information, with a focus on developing critical thinking and problem-solving skills.

Six Stages of the Big6

1. Task Definition

- The first stage involves clearly defining the task at hand and identifying the specific information needs. This includes understanding the nature of the problem and determining the type of information required to address it.

2. Information Seeking Strategies

- In this stage, students develop a plan for finding the necessary information. This includes identifying all possible sources and selecting the best ones to use based on criteria such as reliability, relevance, and accessibility.

3. Location and Access

- The third stage focuses on locating the selected sources and accessing the information they contain. This involves using tools like library catalogs, databases, and search engines effectively.

4. Use of Information

- Once the information is accessed, students must extract relevant data, taking notes and organizing the information in a way that is useful for the task at hand. This stage emphasizes the critical evaluation of the information gathered.

5. Synthesis

- In this stage, students integrate the information from various sources to create a coherent product or response. This could involve writing a paper, creating a presentation, or producing another form of output that effectively communicates the information.

6. Evaluation

- The final stage involves assessing the completed task and the process used to achieve it. Students evaluate both the effectiveness of their product and their information-gathering process, identifying areas for improvement.

Application in K-12 Education

The Big6 Model is extensively used in K-12 education due to its simplicity and practical approach. It is often incorporated into school curricula, where it helps students develop research skills that are critical for academic success. The model's step-by-step guidance makes it particularly useful for younger students who are still developing their information literacy skills.

Seven Pillars of Information Literacy (SCONUL)

Overview

The Seven Pillars of Information Literacy is a model developed by the Society of College, National and University Libraries (SCONUL) in the UK. The model presents IL as a set of interconnected skills and competencies that are essential for effective information use. Unlike linear models, the Seven Pillars framework represents IL as a circular process, where learners can enter and exit at different points depending on their needs and context.

The Seven Pillars

1. Identify

- Recognizing an information need and understanding the scope of the information required to address it.

2. Scope

- Assessing the extent of the information needed, understanding the types of sources available, and considering the appropriate methods to gather information.

3. Plan

- Developing strategies for locating information, including choosing the right search tools and methodologies.

4. Gather

- Collecting information from a variety of sources, effectively searching databases, catalogs, and other information systems.

5. Evaluate

- Critically assessing the information found, determining its reliability, validity, and relevance to the task.

6. Manage

- Organizing and storing information efficiently, including the use of reference management tools and maintaining accurate records of sources.

7. Present

- Synthesizing and presenting the information in an appropriate format, whether through writing, presentations, or other media, and communicating the findings effectively.

Adaptation to Various Educational Contexts

The Seven Pillars model is adaptable across different educational levels and disciplines. It has been widely used in higher education to guide IL instruction and is flexible enough to be applied in various contexts, from undergraduate research projects to advanced academic work. The model encourages students to develop a reflective approach to their information-seeking behaviors and to see IL as an ongoing, iterative process.

Information Search Process (ISP) by Carol Kuhlthau

Overview

Carol Kuhlthau's Information Search Process (ISP) model is a pioneering theoretical framework that focuses on the cognitive and affective aspects of information seeking. Unlike models that primarily address the procedural aspects of information literacy, the ISP model emphasizes the emotional and psychological experiences that individuals go through during the information search process.

Six Stages of the ISP Model

1. Initiation

- This stage involves recognizing the need for

information and experiencing feelings of uncertainty and apprehension. The user begins to explore the topic and consider possible ways to address the information need.

2. Selection

- In this stage, the user selects a general topic or problem to focus on. As decisions are made, feelings of uncertainty may decrease, but the user may still feel doubtful about the direction they are taking.

3. Exploration

- The exploration stage is marked by a deeper investigation into the topic. Users often experience confusion and frustration as they encounter inconsistent or contradictory information, leading to a sense of information overload.

4. Formulation

- During the formulation stage, the user begins to develop a clearer understanding of the topic. They start to focus on specific aspects of the information that are most relevant, and their confidence in the search process increases.

5. Collection

- The collection stage involves gathering information that is directly related to the focused topic. Users feel more in control of their search, and their confidence continues to grow as they accumulate relevant information.

6. Presentation

- In the final stage, the user synthesizes the information gathered and presents it in a coherent format. This stage is often accompanied by feelings of relief and satisfaction as the task is completed.

Cognitive and Affective Focus

The ISP model is unique in its emphasis on the user's feelings and thoughts at each stage of the information-seeking process. Kuhlthau's model highlights the importance of understanding these emotional responses, as they can significantly impact the effectiveness of the search process and the user's overall experience. The model has been widely used in both educational and professional settings to help users navigate the often complex and emotionally challenging process of information seeking.

Framework for IL in Higher Education (SAILS)

Overview

The Standardized Assessment of Information Literacy Skills (SAILS) project developed a comprehensive framework for assessing IL skills in higher education. The SAILS framework is based on the ACRL Information Literacy Competency Standards and is designed to provide institutions with a reliable and valid tool for measuring students' IL competencies. The framework uses a standardized, multiple-choice assessment format to evaluate various aspects of IL across a range of educational contexts.

Assessment of IL Skills

The SAILS framework focuses on several key areas of IL, including:

- **Developing Search Strategies**
 - The ability to construct effective search queries and select appropriate databases and resources.
- **Evaluating Sources**
 - Assessing the credibility, relevance, and reliability of information sources.

- **Understanding the Information Landscape**

- Recognizing the different types of information sources and their respective roles within the broader information ecosystem.

- **Ethical Use of Information**

- Understanding issues related to plagiarism, copyright, and the responsible use of information.

Alignment with ACRL Standards

SAILS is closely aligned with the ACRL Standards, ensuring that the assessment tool measures the competencies identified as critical for information literacy in higher education. This alignment allows institutions to benchmark their students' IL skills against established standards and provides data that can be used to improve IL instruction and curriculum design.

Application and Impact

The SAILS framework has been widely adopted by colleges and universities to assess the effectiveness of their IL programs. The data collected through SAILS assessments have been used to inform curriculum development, identify areas where students may need additional support, and demonstrate the value of IL instruction to institutional stakeholders. The standardized nature of the assessment also allows for comparisons across institutions, contributing to the broader understanding of IL in higher education.

Comparative Analysis of IL Standards and Models

While each IL standard and model has its unique features, they share common goals of promoting critical thinking, effective information use, and lifelong learning. The ACRL standards and framework, IFLA guidelines, UNESCO framework, and various theoretical models offer diverse approaches to defining and teaching IL.

Impact on Educational Practices

IL standards and models have significantly influenced educational practices. Librarians and educators use these frameworks to design IL instruction, develop curricula, and assess student learning. Successful IL programs often involve collaboration between librarians and faculty, integrating IL into subject-specific courses.

Challenges and Future Directions

Implementing IL standards and models faces several challenges, including limited resources, varying levels of institutional support, and the need for ongoing professional development. Future research should explore the impact of emerging technologies on IL and develop new strategies to address these challenges.

Conclusion

The literature on information literacy (IL) standards and models underscores the pivotal role that IL plays in education and lifelong learning. These standards and models provide essential frameworks for developing the skills necessary to navigate an increasingly complex and information-rich world. The evolution of IL—from its early focus on library skills to its current integration with digital and media literacy—reflects the dynamic nature of information environments and the growing demand for critical thinking, ethical use of information, and adaptability.

As technology continues to advance and information landscapes become more intricate, the relevance of IL only intensifies. Theoretical models such as the Big6, the Seven

Pillars, and Kuhlthau's Information Search Process provide valuable insights into the processes of information seeking and use, offering educators and librarians effective tools for instruction and assessment. Additionally, frameworks like the ACRL Standards and the SAILS assessment emphasize the need for measurable outcomes in IL education, ensuring that learners are equipped with the competencies necessary for academic success and informed citizenship.

However, as information environments evolve, there is an ongoing need to adapt and refine these standards and models. Future developments in IL will likely involve greater emphasis on digital literacy, ethical considerations in information use, and the integration of IL across various disciplines and educational levels. By continuously revisiting and updating IL standards and models, educators and institutions can ensure that they meet the changing needs of learners, preparing them for the challenges and opportunities of the digital age.

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