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# Data Literacy Questionnaire for Educators

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## ABSTRACT

This questionnaire emerges within an increasingly digitized education context, driven by the exponential growth of Artificial Intelligence (AI) [1]. Generative Artificial Intelligence [2] facilitates educational activities, providing teaching productivity support, critical thinking, and personalized learning [3]. Nevertheless, data literacy is a necessary element for the effective use of AI, as needing more required knowledge would help in selecting the appropriate model for a specific task [4] or understanding the ethical and privacy issues involved in data usage [5, 6]. Thus, the ability to process, organize, analyze, and comprehend data is known as data literacy [7], enabling the detection of errors in datasets and evaluating the quality and reliability of results generated by AI [8].

Educational data management has significantly improved teaching-learning processes [9-11]. Given the importance of this advancement, a self-assessment questionnaire on data literacy for Primary and Secondary School teachers is presented. This instrument aims to enhance the development of relevant competencies in data management, effectively providing educators and researchers with an evaluation tool to identify needs and areas for improvement. This report is also available in Spanish [12].

## KEYWORDS

Data Literacy; Questionnaire; Primary Education; Secondary Education; Educator.

## RECOMMENDED CITATION

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# DATA LITERACY QUESTIONNAIRE FOR EDUCATORS

The principal objective of this questionnaire focuses on understanding how, when, and to what extent the handling of educational data takes place in the stages of Primary and Secondary Education. When referring to educational data, we denote the actions of students on digital platforms or applications, such as access, total time, submissions, grades, interactions, learning outcomes of projects, and activities developed at the institution, among others. Thus, this process of digital information manipulation is called "Data Literacy," characterized by the ability to read, comprehend, create, and communicate data and information.

The questionnaire below contains various statements regarding handling educational data or 'Data Literacy', and it seeks to understand your perception of your competence in handling educational data (the skills necessary to manage data effectively). Therefore, a Likert-type scale ranging from perceived capability (1 to 4) to current practice (5 and 6) for the task stated in each statement will be presented. Indicate the extent to which you can develop the following knowledge or key-activities, considering that:

1. I do not feel capable.
2. I can complete this task with assistance.
3. I can complete this task in basic terms.
4. I am capable of fully completing this task.
5. I undertake this task as part of my professional practice.
6. I undertake this task as part of my professional practice, assisting and teaching others.

<b>DATA LITERACY FOR EDUCATORS</b>		1	2	3	4	5	6
1	To use data from digitized learning environments (e.g., learning activities in virtual classrooms, applications, or other tools) to identify the learning problems of the students and groups I teach.						
2	To use data from digitized learning environments to solve problems in educational practice with the students and groups I teach.						
3	To document problem-solving processes identified through data using reports, memos, journals, or other tools.						
4	To use different data sources to get knowledge from my teaching practice and student learning.						
5	To use evaluation, content transmission or visualization tools that allow me to work with raw data to extract quick and elaborate results (e.g., Google/Microsoft Forms, Moodle Quiz, Google Data Studio).						
6	To understand how to analyze, manage, and aggregate data within my teaching role.						
7	To make modifications in the design of learning activities based on issues detected in students through data.						
8	To readjust my teaching practice learning activities based on data-determined issues.						
9	To consider student activity data in implementing learning activities.						
10	To consider student activity data in assessing and evaluating learning activities.						
11	To use meaningful tables, charts, and data visualizations to represent and communicate data.						
12	To test assumptions about student learning or my teaching practice through data representation.						
13	To evaluate patterns and trends through data visualization or representation elements.						

<b>DATA LITERACY FOR EDUCATORS</b>		1	2	3	4	5	6
14	To synthesize and explain different data sets through data visualization or representation elements.						
15	To consider the ethical aspects of data visualization, representation, and dissemination processes.						
16	To know the privacy policies and legal implications of data management and disclosure in the educational context of the classroom.						
17	To know the organizational chart, roles and internal processes of the educational institution related to the management and disclosure of data in the education context of the classroom (e.g., Data Protection Officer of the institution, Data Protection Guide of the institution).						
18	To monitor student performance through data.						
19	To generate actionable insights into student performance and needs through data handling.						
20	To change content delivery, teaching practice, and student tracking based on data outcomes.						
21	To understand the learning contexts from which data for decision-making has been extracted.						
22	To promote student use of self-monitoring tools in digital environments (e.g., virtual classrooms, data-enabled apps).						
23	To facilitate student use of data visualization tools for self-assessment in digital learning activities.						
24	To encourage student reflection on their learning through data obtained in digital environments.						

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