

## TEACHING SCIENTIFIC LITERACY IN ADULT EDUCATION

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### ABSTRACT

Scientific literacy is one of the most important dimensions of modern education, as it is associated with the ability of individuals to understand, evaluate and utilize scientific information in their daily lives. In adult education, scientific literacy acquires particular importance, because it contributes to the development of critical thinking, to the making of informed decisions and to the active participation of citizens in social issues related to science and technology. This paper examines the importance of scientific literacy in adult education, analyzes its main dimensions and presents the role of the adult educator in the formation of scientifically literate citizens.

**Keywords:** scientific literacy, adult education, critical thinking, lifelong learning, scientific knowledge.

### INTRODUCTION

Modern society is characterized by the continuous production and dissemination of scientific knowledge. Issues such as climate change, public health, new technologies and the digital transition require citizens to have the ability to understand scientific information and assess its reliability. In this context, scientific literacy is not only about the possession of scientific knowledge, but mainly the ability to use this knowledge to solve problems and participate in decision-making.

Adult education is an important area for the development of scientific literacy, as it is addressed to people with different experiences, educational backgrounds and needs. Through appropriate educational processes, adults can strengthen their ability to critically approach scientific information and actively participate in the knowledge society.

### The concept of scientific literacy

Scientific literacy refers to an individual's ability to use scientific knowledge, processes and ways of thinking in order to understand the natural world and make evidence-based decisions.

The concept includes:

- **Knowledge of scientific concepts**

It concerns the understanding of basic scientific principles and theories. This knowledge allows individuals to interpret phenomena and connect science with everyday reality.

- **Understanding the scientific process**

Scientific literacy includes understanding how scientific knowledge is produced. Citizens need to know the importance of observation, hypothesis, experiment and evaluation of data.

- **Critical evaluation of scientific information**

In the modern information age, the ability to evaluate sources is essential. Distinguishing between reliable scientific knowledge and misinformation is a basic skill of the scientifically literate citizen.

## **Adult education and scientific literacy**

Adult education is based on the principle that adults already possess knowledge, experiences and perceptions that influence the learning process. According to adult education theories, learning is most effective when it is linked to real problems and personal needs of learners. Scientific literacy in adult education does not aim to create expert scientists, but to develop citizens who can understand and utilize science in their daily lives. For example, an adult with developed scientific literacy can evaluate health-related information, understand environmental problems, or critically examine technological applications.

## **The importance of scientific literacy for adult learners**

Scientific literacy offers multiple benefits such as:

- **Development of critical thinking**

Scientific thinking enhances adults' ability to examine data, question arbitrary claims, and seek evidence-based answers.

- **Empowering citizens**

Participation in democratic societies requires informed citizens. Many social issues have a scientific dimension and understanding them helps to shape responsible attitudes.

- **Tackling disinformation**

The spread of false or unsubstantiated information makes it necessary to develop skills in evaluating sources and arguments.

## • Adapting to social and technological changes

Science and technology are constantly changing the way we live and work. Scientific literacy helps adults meet new demands.

## The role of the adult educator

The adult educator has a crucial role in cultivating scientific literacy. He or she does not simply act as a transmitter of knowledge, but as an animator and facilitator of learning. Basic practices of the educator include:

- connecting scientific knowledge to learners' experiences,
- using real social and environmental problems,
- encouraging dialogue and argumentation,
- developing information search and evaluation skills.

The educational process must create an environment where adults feel they can express opinions, revise perceptions and build new knowledge.

## Challenges in the development of adult scientific literacy

Despite its importance, the development of scientific literacy faces several challenges. One of them is the diversity of educational levels and experiences of adult learners. In addition, negative attitudes towards science or the perception that it is a difficult and remote field can act as an inhibitor. Digital misinformation is also a particular challenge. Easy access to information via the internet requires new skills of evaluation and critical processing.

## CONCLUSION

Scientific literacy is a key element of adult education, as it strengthens critical thinking, autonomy and social participation. In a world where science influences people's lives every day, the ability to understand and utilize scientific information is an essential skill. Adult education can contribute significantly to the development of this ability, through participatory and experiential learning processes. The role of the educator is decisive, as he is called upon to create conditions that encourage investigation, dialogue and a critical approach to knowledge. Therefore, scientific literacy is not only an educational goal, but also a prerequisite for the active participation of adults in modern society.

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