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CONTENT AND STRUCTURE OF THE ENVIRONMENTAL LITERACY OF SECONDARY SCHOOL TEACHERS BASED ON AN ETHNOPEDAGOGICAL APPROACH

Khurramov Isroil Abdurashidovich

Scientific Secretary, Abdulla Avloni National Institute of Pedagogical Mastery, PhD in Pedagogical Sciences, Associate Professor

Abstract

The article reveals the content and structure of the environmental literacy of secondary school teachers on the basis of an ethnopedagogical approach. Environmental literacy is interpreted as an integrative quality comprising cognitive, motivational-axiological, ethnocultural and activity-reflective components. A system of criteria and indicators is developed for each component, and the levels of its development are described. A matrix for integrating ethno-ecological content into teachers' professional activity is proposed.

Keywords

environmental literacy, structure, component, criterion, indicator, ethno-ecological content, ethnopedagogical approach, teacher.

Introduction. The ideas of sustainable development are becoming a priority of contemporary education policy. UNESCO recommends embedding education for sustainable development in every subject and in the work of every teacher [10]. In Uzbekistan, the Concept for the Development of Environmental Education likewise provides for environmental education to be organised at all stages of continuous education [2].

Achieving this goal requires, first and foremost, that teachers themselves be environmentally literate. However, the structure of the concept of "teachers' environmental literacy" is interpreted differently in the research literature. It is often regarded merely as a body of ecological knowledge, while its national, cultural and value dimensions are overlooked. As a result, teachers may pass ecological knowledge on to students without being able to turn it into an educational influence.

The Uzbek people's experience of living in harmony with nature, including the etiquette of water conservation, hashar (communal voluntary work), the tradition of tree planting and traditional farming knowledge, is an important source for enriching the content of environmental literacy. This makes it necessary to include an **ethnocultural component** in the structure of environmental literacy and to assess it against defined criteria.

The aim of the study is to determine the content and structure of teachers' environmental literacy on the basis of an ethnopedagogical approach and to substantiate its components, criteria and levels of development.

Literature review and methodology. International research offers several models of the structure of environmental literacy. K. Hollweg and co-authors describe it as a unity of four elements: knowledge, competencies, dispositions and environmentally responsible behaviour [4]. H. Hungerford and T. Volk identified entry-level, ownership and empowerment variables that shape responsible environmental behaviour [5]. D. Orr and F. Capra emphasise the connection of ecological literacy with systems thinking and values [3; 8].

In Russian pedagogy, I. D. Zverev defined the content strands of environmental education as scientific, value-based, normative and practical [12]. From an ethnopedagogical perspective, G. N. Volkov systematised the nature-oriented means of folk upbringing [11]. Studies by Uzbek scholars have revealed the educational significance of ecological ideas in folklore and in the heritage of classical thinkers [6; 9].

The analysis shows that the ethnocultural dimension has not been singled out as a separate component in existing models. This limits the opportunity to ground ecological values in their national roots.

Methods. The study used structural and systemic analysis, comparative analysis of international models, content analysis, expert evaluation and modelling. The system of components and criteria was discussed with and refined by 12 experts in pedagogy and ecology.

Results and discussion. Structure of environmental literacy. The analysis identified teachers' environmental literacy as an integrative professional quality consisting of four components (Figure 1). Unlike conventional models, it includes a separate **ethnocultural component**, which reflects an understanding of the national roots of ecological values and their application in teaching and learning.

Environmental literacy comprises four components and three levels

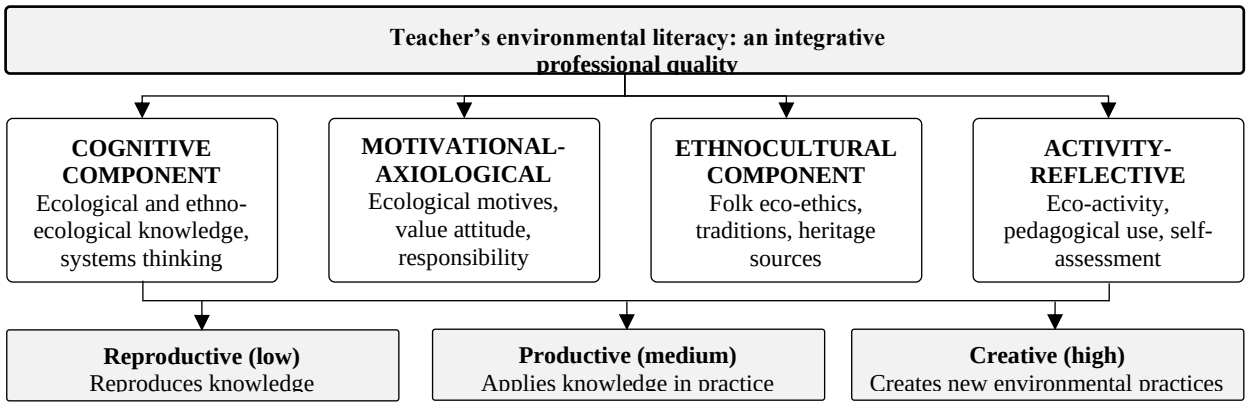


Figure 1. Structural and functional model of teachers' environmental literacy (developed by the author)

The components are interrelated, and each supports the development of the others. The cognitive component lays the foundation of knowledge, while the motivational-axiological component gives this knowledge personal meaning. The ethnocultural component links values to national heritage, and the activity-reflective component transforms all of them into practical behaviour and pedagogical activity.

Criteria and indicators. To determine the level of environmental literacy, criteria and indicators were developed for each component (Figure 2).

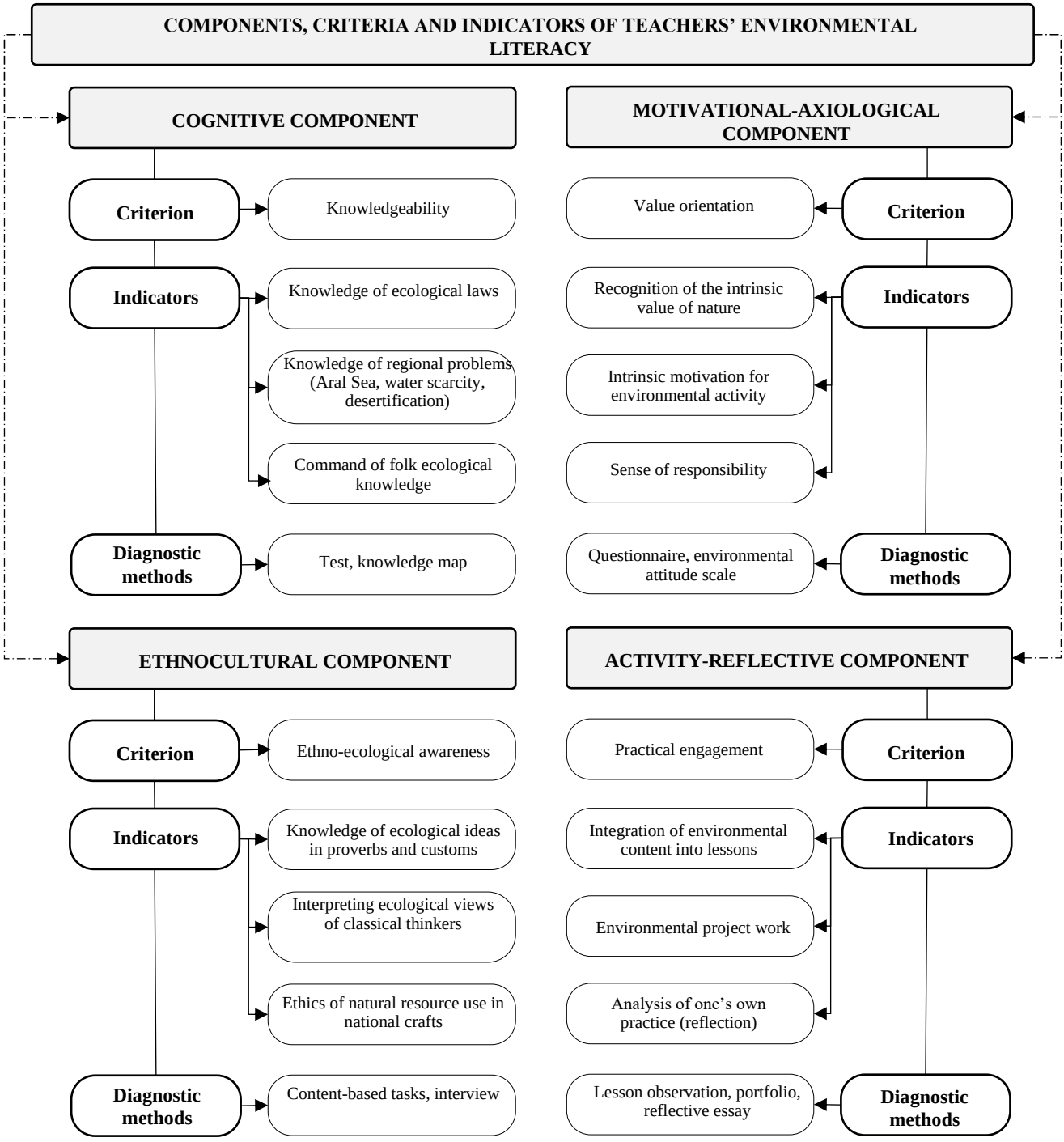


Figure 2. Model for assessing the level of environmental literacy of secondary school teachers based on the ethnopedagogical approach (developed by the author)

Levels of development. Based on the manifestation of the identified indicators, three levels of development were distinguished. *At the reproductive level,* the teacher transmits ecological knowledge in ready-made form and uses ethnocultural sources only occasionally. *At the productive level,* the teacher purposefully integrates ecological and ethno-ecological content into lessons. *At the creative level,* the teacher designs original environmental projects and new educational practices.

Ethno-ecological content matrix. To organise the content of environmental literacy with reference to the national context, a matrix was developed for the main environmental strands (Figure 3). It enables the teacher to view folk heritage, contemporary problems and interdisciplinary links holistically for each topic.

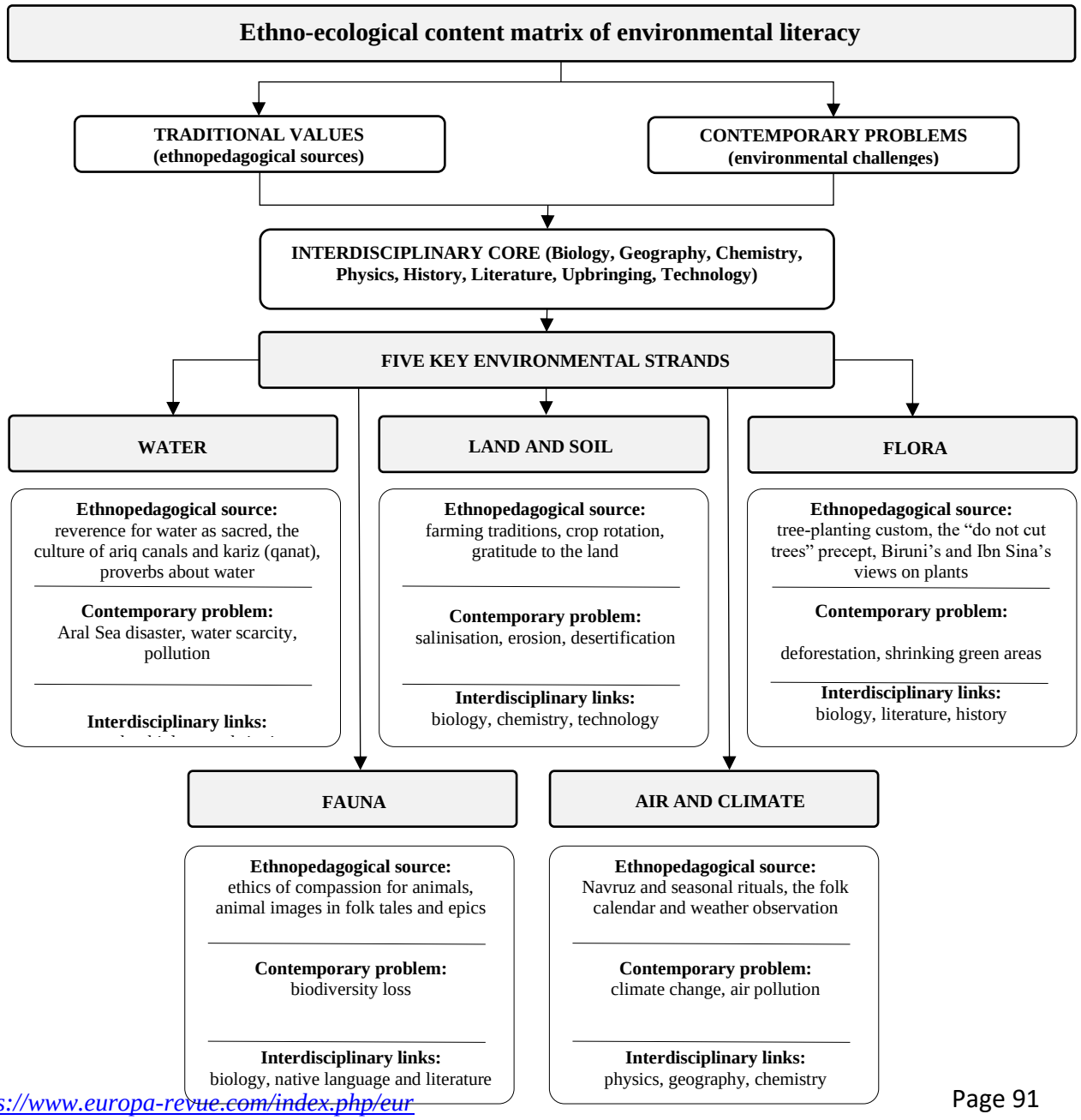


Figure 3. Ethno-ecological content matrix of environmental literacy (developed by the author)

The matrix provides a basis for the systematic use of ethno-ecological content in teachers' professional activity. It treats environmental education not as a stand-alone event but as a process embedded in the content of all subjects.

Conclusions and recommendations.

Teachers' environmental literacy is an integrative professional quality comprising cognitive, motivational-axiological, ethnocultural and activity-reflective components.

Identifying the ethnocultural component separately makes it possible to develop ecological values on the basis of national heritage and to turn them into internal convictions.

The proposed system of criteria and indicators allows teachers' environmental literacy to be diagnosed at the reproductive, productive and creative levels.

The ethno-ecological content matrix brings together folk heritage, contemporary problems and interdisciplinary links across five strands: water, land, flora, fauna, and air and climate.

Recommendations: it is recommended to standardise diagnostic tools for assessing teachers' environmental literacy on the basis of the proposed criteria, and to incorporate the ethno-ecological content matrix into subject curricula and teacher professional development courses.

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