HIERARCHICAL ITEM CODE STRUCTURE IN MOODLE

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The MOODLE learning platform has become one of the most widely used platforms, partly due to its open-source nature and continuous improvement capabilities. This paper examines an improvement to MOODLE by transitioning from an item identifier (ID), which represents a sequential number in a table, to a structured hierarchical identifier assigned in accordance with the course's hierarchical structure, item type, complexity, etc [1].

The item's order identifier in the table is a number used by the system, with low informational value for the course developer, as it does not provide any information about the item. The Moodle LMS offers users the ability to set the IDNUMBER field for a wide range of uses, such as a structured hierarchical ID. The proposed TONICO structure is flexible and can accommodate up to 6 criteria for grouping/classification, such as the item number, type and objective number, item type, complexity level, and order number. TONICO is an abbreviation for *Topic*, *Objective* (knowledge, skills/abilities, application), *Number* (of objective order), *Item type* (binary, single response, etc.), item *Complexity*, and number *Order* in this hierarchical structure. Ideally, the hierarchical

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structure of the TONICO item collections would align with the hierarchical structure of the study subject, based on a curriculum structured by topics, objectives, self-training events, self-assessments, interim and final evaluations. In such conditions, self-training and self-assessment, both formal and informal, can be easily formalized and made continuous.

Use cases:

– Facilitating the management of item collections, including automatic grouping according to the item code, importing, exporting, textual editing (Gift format), etc.

– Supporting test generation by filtering items based on predefined criteria and randomly selecting items to be included in the test.

– Enhancing transparency in post-testing analysis for item review and improvement, including easy regrouping by simply modifying the ID, reducing computational resources per item, test, backup copies, etc.

References:

1. T. Bragaru, M. Croitor, I. Circiumaru. Instruments for developing multimedia educational resources, *Conference Mathematics and IT: Research and Education (MITRE-2015), Chişinău, Republic of Moldova*, (2015), 106.