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1. What Are Categories?

"Categories" is ExamSoft's unique item-tagging feature that allows exam-makers and educators to connect individual exam items (questions and rubrics) to specific content areas, such as cognitive levels, accreditation standards, learning outcomes, and programmatic objectives.

Categories are created in the Categories folder of your portal and can be used by all the departments and courses in your institution. Key Administrators control the Category Permissions for this folder and can provide full or restricted access to categories for each user, depending on their individual requirements. With restricted access, Key Administrators can decide whether to provide read-only, create/edit, or full access to users for all categories or only selected categories. Please contact your Key Administrator if you require access to the Categories folder or changes to your Category Permissions.

Within the Categories folder, categories are arranged in a tree structure

Each top-level item in the tree is known as the category type; this is the name of the collection of categories listed below it. The second level of the tree comprises parent categories; these are the primary categories, which are typically used to tag exam items. If you require further granularity, you may create child categories beneath parent categories, and sub-sub-categories beneath child categories. The following example shows how you can use this hierarchy to represent Bloom's Taxonomy



Category type

- Parent category
 - Child category or sub-category
 - Sub-sub-category

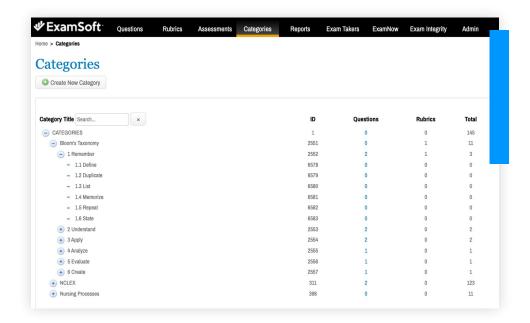


Bloom's Taxonomy

- Remember
 - Define
 - **Duplicate**
 - List
 - Memorize
 - Repeat
 - State

The figure below illustrates how categories are displayed in the portal and provides an example of the Bloom's Taxonomy structure. The Questions and Rubrics* columns report the number of tagged questions and rubrics for each category item in the tree. The Total column reports the total number of tagged questions and rubrics for each category item and its sub-categories.

^{*} The Rubrics column is only displayed if your account utilizes this feature.



There is no limit to the number of category types you can create in your portal, and you can tag individual exam items to as many different parent categories and/or sub-categories as you wish. Since any text-based content can be converted into categories, the list of possible category types is endless. ExamSoft can also auto-populate a limited number of category structures on your behalf (please reach out to your primary ExamSoft contact for further details). To help you get started, some common category types to consider are:

- Bloom's Taxonomy
- Entrance or licensure exam blueprint
- **Course learning outcomes**

- **Accreditation standards**
- **Professional competencies**
- **Program learning outcomes**
- Institution learning outcomes

- Keywords/topics
- Item author
- Item source
- Question type (e.g., hotspot, ordering, pilot item)

- Cohort
- Instructional method
- Course name/number
- Lecture name/number
- Exam name/number/type

2. Why Should I Use Categories?

Category tagging is combined with assessment data in ExamSoft's extensive suite of reports to provide you with actionable data to help improve student learning outcomes, course and program performance, and quality of instruction — all of which support accreditation efforts, student retention, and programmatic success. In brief, categories support your efforts to:



Improve student learning outcomes

- Help direct you and your students toward the subjects, competencies, and question types they need to focus their studies on the most, enabling them to use their study time effectively.
- Identify the areas your students excel in so they can make informed decisions about career paths.
- Share relevant categorization and assessment data with your students through the Strengths &
 Opportunities Reports so they can self-remediate, increasing their autonomy.



Improve accreditation preparation

- Tag exam items to accreditation standards to demonstrate where they are taught and assessed in your institution and programs, while also ensuring students are ready for their next academic or professional challenges.
- Demonstrate the attainment of educational outcomes, both in aggregate and at the individual student level.
- Provide evidence to accreditors that you continuously evaluate and improve your curriculum and teaching.
- Tag exam items to entrance/licensure exam content areas to obtain a clear understanding of student preparedness for these exams and help increase pass rates.



Improve your curriculum

- Identify and eliminate gaps in the content you teach.
- Provide proof that you have met your content goals with students.
- Ensure the topics you cover in each assessment are the same ones you covered in the classes and assignments leading up to the assessment.

• Strategically introduce repetition into your curriculum and courses to reinforce important concepts while avoiding redundancy.



Improve the quality of instruction

- Understand the distribution of time devoted to each topic in class so you can make sure you're
 not spending too much, or too little, time in one area.
- Know which subjects were poorly understood by students so you can return to them in class after assessments.
- See which instructional methods and teaching strategies are working and which aren't.



Improve assessment content

- Build exam blueprints to define exam content based on the subject areas covered in teaching.
- Use performance statistics to identify which exam items will best accomplish your assessment goals.
- Ensure all exams are well balanced, fair, and reliable by categorizing exam items to difficulty levels, such as Bloom's Taxonomy.



Satisfy internal standards of excellence

 Tag exam items to programmatic or institutional standards to track how your courses are performing internally.



Advance faculty development

- Tag exam items to the faculty who wrote them so you can pull faculty-specific reports and use performance statistics to assess any potential adjustments to your curriculum and item writing.
- · Create and administer assessments more efficiently.

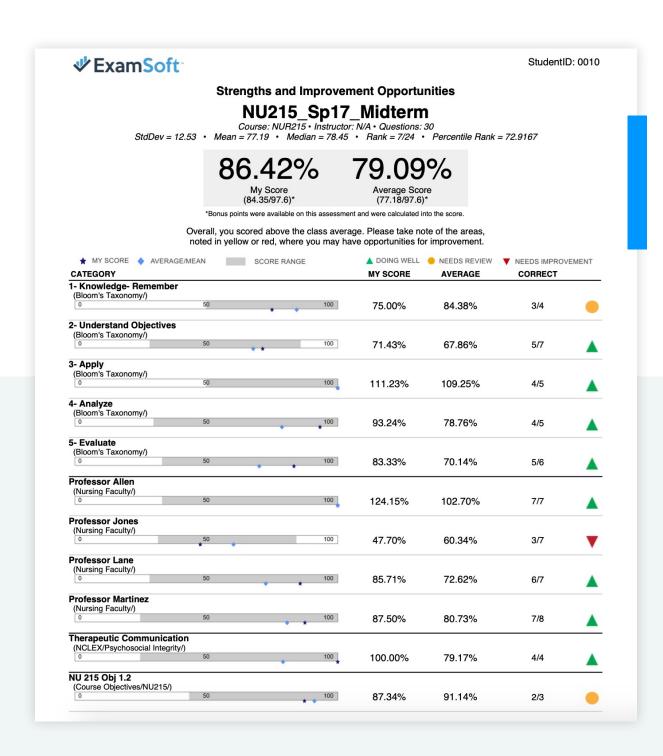


Locate exam items in your item bank

• Filter on categories in your portal to quickly locate exam items based on content, author, question type, etc.

For further information on how categorization can help you, your students, and your program, please refer to the additional resources in Section 5.

An example of ExamSoft's Strengths & Opportunities Report is shown in the figure below. This identifies how an individual exam-taker performed on an assessment overall and in each category, highlighting the areas requiring improvement.





3. Getting Started With Categories:Developing Your System

As you start to develop your category system, ExamSoft recommends thinking carefully about the following questions:

- Which category types do you need to meet your reporting requirements?
- Who will be responsible for creating and managing categories in your portal?
- Do you need to adopt any specific naming conventions (e.g., for learning outcomes)?
- Is there a clear process for exam-makers to follow when tagging items?

Remember, you can always edit and apply your categories retroactively, so even if you've already begun creating categories and tagging exam items, it's never too late to pause, consider, plan, and make changes to your system. However, the earlier you define your category-tagging strategy, the sooner and more efficiently you will be able to access the actionable data you require.

To help you get started using categories and reports in your portal, a collection of online resources is provided in Sections <u>5.5</u> and <u>5.6</u>. There you will find two introductory, on-demand webinars for categories (<u>The What, Why, and How of ExamSoft's Most Powerful Tool, Categories!</u>) and reports (<u>Exam Day is Over, Now What?</u>), together with links to detailed, step-by-step instructions for managing all aspects of <u>categories</u> and <u>reports</u> on our exam-maker community pages.

4. Best Practices

4.1 System Design and Implementation

- Create an <u>implementation plan</u> and communicate process logistics clearly to all stakeholders. Think carefully about
 the entire process from start to finish, including who will be involved, timeframes for completion, and quality control.
- When designing a category system, choose team members who will be intimately involved in the assessment
 process. Include individuals responsible for creating or importing exam items and building assessments as well
 as faculty responsible for assessment, curriculum performance, and accreditation data at course, program, and
 institution levels.
- Select only those category types that are relevant to your program and provide the actionable data you require.
- Create policies around item tagging that define the total number of categories and specific category types that each exam item must have, and when faculty should be tagging exam items (e.g., when creating or importing questions).

4.2 Category Structure

- To realize the full potential of categories, ExamSoft recommends using the following category types as a minimum
 - Bloom's Taxonomy (or alternative cognitive levels)
 - Accreditation standards (where appropriate)
 - Professional or other competencies

- Exam blueprints/content
- Course learning outcomes
- Item author
- Do not exceed five different sub-levels beneath each category type



Category type

- Sub-level 1 (parent category)
 - Sub-level 2 (child category)
 - · Sub-level 3
 - · Sub-level 4
 - Sub-level 5 (**DO NOT EXCEED**)

You will not be prevented from creating more than five sub-levels in your portal; however, any categories in deeper sub-levels will not be included in the reports you run. Try to minimize the number of different sub-levels you use within this limit; simple structures allow users to locate individual categories faster and lead to more efficient reporting processes.

- Maintain a consistent structure for similar category types.
- Avoid duplication of the same categories in different parts of your structure. Also, don't use different variations of the same category (e.g., Remember and Remembered for Bloom's Taxonomy).
- Under the category type for course learning outcomes, create individual parent categories for each course, and child categories for each set of learning outcomes

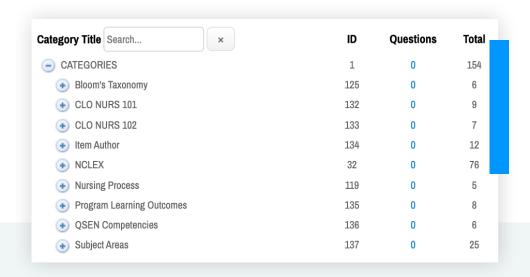


Course learning outcomes

- Course 1
 - Learning outcome 1
 - Learning outcome 2
- Course 2
 - Learning outcome 1
 - Learning outcome 2

This allows you to control the tagging privileges of each set of learning outcomes at course level, so team members only see and tag with the categories relevant to them, and don't have to scroll through the full list of course learning outcomes in the portal.

To help illustrate these points and further inspire you, a real example of the category system for a Nursing program is shown below



4.3 Category Names

- Use consistent naming conventions for similar category types.
- When naming your categories, be as concise as possible and stay within the 255-character limit.
- Do not use the same category name more than once anywhere in the category tree.
 Duplicate names cannot be included in longitudinal reports, potentially impacting your analysis, and duplicates can be confusing for team members when tagging exam items.
 Note: The system will not warn you if you try to create a category with the same name as an existing category.
- For course, program, and institution learning outcomes, avoid using generic names, such as LO1. Try to use a detailed description of each outcome in the category name that will be meaningful to team members and exam-takers when it is included in reports.
- If you have more than one department, consider including a reference to the department in the name of each category type (e.g., DEPT Course 1 Learning Outcomes). This helps identify which categories relate to each department. For shared category types, such as Bloom's Taxonomy, you have the option of creating a single category type across all departments, or separate category types for each department (e.g., DEPT Bloom's Taxonomy). The option you select will depend on your reporting requirements.

4.4 Item Tagging

- · Be consistent in your approach to tagging exam items.
- Where possible, try to get into the habit of tagging exam items when creating or importing them.
- Ensure team members have the correct Category Permissions to be able to tag exam items with the required categories.
- If you tag an item with a sub-category, Legacy Portal does not automatically aggregate the data for the levels above it in the category tree (i.e., the parent category and the category type). To obtain aggregate data for a given category path, you must tag with each level of the tree that you require data for.

4.5 Category Permissions

- Maintain system integrity and avoid accidental changes by using Category Permissions to control who can view, edit, and tag with categories.
- Restrict editing rights to a small number of faculty only.

4.6 Editing Categories

- Review your category system periodically to ensure your categories are up to date and your exam items are tagged
 with the correct categories. You can continuously edit the categories assigned to exam items without creating new
 item revisions, even after they have been used in assessments.
- If the categories you use and the reports you require change over time, you might consider applying new or updated categories not only to new exam items, but also to exam items used in past assessments. This way, you can run retroactive reports to analyze how the new categories performed historically.
- Should you wish to remove categories from some exam items and replace them with new ones, ExamSoft recommends the following procedure
 - 1. Create the new categories in your portal.
 - 2. Filter your exam items on one of the categories you wish to replace.
 - 3. Bulk-add the new category to the relevant exam items.
 - 4. Repeat steps 2 and 3 for the remaining categories.
 - 5. Remove the obselete categories from the relevant exam items.
- Only delete categories from your portal if they are not tagged to any exam items or you are certain you won't need
 to report on that data in the future.

4.7 Reporting

- Develop a process for reporting your assessment data. Decide which ExamSoft reports you will use, when and how often you will run each report, which team members will be responsible, and with whom the data will be shared (e.g., exam-takers, faculty, department chair). Also, include a plan for training faculty in how to interpret their data.
- Maintain question integrity by releasing category performance data to exam-takers but not genuine question information, such as question title, text, and answer choices.
- Exclude from reports any categories you don't wish exam-takers to see (e.g., item author) by ensuring they are not selected in the Category Performance settings of the Strengths & Opportunities Report.

5. Additional Resources

5.1 Blogs

- How Category Tagging Can Help You, Your Students, and Your Program
- Why You Should Use Categories for Curriculum Guidance
- Curriculum Mapping: Are You Teaching What You're Supposed To?
- How to Improve Teaching Strategies Through Student Assessment
- Creating an Appropriate Exam Creation Workflow Using Blueprinting
- Student Economics: Allowing Your Students to Maximize Their Study Time
- Bloom's Taxonomy (Part 1): Bloom's Basics
- Bloom's Taxonomy (Part 2): Using Bloom's Taxonomy in Assessment
- Bloom's Taxonomy (Part 3): Writing Learning Objectives That Measure Up





5.2 White Papers

- Improving Student Learning Outcomes through Exam Item Categorization
- Using Assessment Data to Affect Curricular Change and Increase Licensure Exam Scores
- Exam Quality Through the Use of Psychometric Analysis



5.3 eBooks

Six Essentials of Assessment Data



5.4 Case Studies

- DYouville College School of Pharmacy: Adopting ExamSoft and implementing category tagging in a new school.
- William Carey University School of Pharmacy: Using categories to generate performance reports, provide targeted feedback, and streamline the accreditation process.
- Northern Arizona University Physician Assistant Program: Analyzing programmatic performance by category, improving the quality of exam content, and identifying opportunities for remediation and retention.
- University of Nebraska Medical Center College of Medicine: Exploring new methods of category tagging to track and manage course curricula, learning objectives, and accreditation compliance.



5.5 On-demand Webinars

- The What, Why and How of ExamSoft's most powerful tool, Categories! (60 minutes)
- Exam Day is Over, Now What? (66 minutes)



- From Conception to Execution: Strategies for Designing and Implementing a Comprehensive Category System (58 minutes)
- Improving Assessments Through Versatile Categorization, Using Learning Outcomes as a
 Guide to Student Engagement EAC 2021 (38 minutes)
- Using Assessment Data to Improve Curriculum Mapping and Assessment Practices EAC 2021 (37 minutes)
- ExamSoft Longitudinal Reports to Support Academic Advising, Curricular Improvement and Accreditation - EAC 2021 (90 minutes)
- ExamSoft Data Benefits: Accreditation, Teaching and Learning, Student Success EAC 2021 (44 minutes)
- Accreditation from Three Perspectives (60 minutes)
- Navigating Psychometrics with Computer-Based Testing (60 minutes)
- <u>ExamSoft Education Connection-Utilization of ExamSoft Tagging and Gateway Exams</u> (54 minutes)

5.6 Exam-maker Community Pages

5.6.1 Managing Categories

- <u>Getting Started with Questions and Categories:</u> Information to help you get started adding and managing categories, importing questions, adding and managing questions, and assigning categories to questions.
- <u>Category Permissions:</u> View the permissions available to a user for the categories feature.
- Changing User Permissions: How to change user permissions for the categories folder in your portal (step 5).
- · Creating Categories: How to add categories to your portal.
- Assigning Categories to Questions: How to assign categories to individual questions and bulk-tag multiple questions
 with the same category.
- Assigning Categories to Rubrics: How to assign categories to the dimensions of a rubric for a performance assessment (step 8 of Create a Rubric).
- Importing Questions Tagged with Categories: How to import questions tagged with categories using an RTF file.

5.6.2 Managing Reports

- <u>Getting Started with Reporting:</u> Information to help you start learning about the various reports that are available in your portal.
- Reporting Overview: Basic steps to view the various reports you can generate from the Reporting/Scoring menu.
- <u>Exam-Taker Results Report:</u> View the class results for an assessment. This report can be customized to include information about exam-takers, questions, responses, scores, and categories.
- <u>Item Analysis Report:</u> Evaluates question performance, response frequencies, and performance history on all past assessments to improve your exam questions and other aspects of your courses.
- <u>Category Report:</u> Evaluates the performance of the class and individual exam-takers in each category within an assessment.
- <u>Longitudinal Analysis Report:</u> Reviews exam-taker performance in categories across multiple assessments and courses. This enables you to identify at-risk categories and trends in category performance through time.
- <u>Strengths & Opportunities Report:</u> Identifies how an individual exam-taker performed on an assessment overall and in each category. This report can be shared with the exam-taker.
- <u>Summary Report for Question Bank Assessments:</u> Provides an overview of how a class performed on a question bank assessment and in each category. Also included are a list of at-risk students and the effectiveness of each question.
- <u>Summary Report for Performance Assessments:</u> Provides an overview of how a class performed on a performance assessment and in each category. Also included are a list of at-risk students and the effectiveness of each dimension for any rubrics used.
- Releasing Exam-Taker Results: Describes how to release assessment results to the exam-taker portal and send a Strengths & Opportunities Report to each exam-taker, empowering them to monitor their own progress and adjust their learning strategies.
- <u>A Guide to the Statistics:</u> How to interpret the data in ExamSoft reports: mean, median, standard deviation as well as KR-20, difficulty index, discrimination index, Point Bi-Serial, and more.

₩ExamSoft

ExamSoft is the digital assessment platform that helps institutions achieve higher levels of course, program, and student success. ExamSoft's intuitive testing application makes it simple to create, administer, and grade exams, with the ability to generate detailed performance reports — all to provide educators with a complete and accurate view of student learning.



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