

eBook

# Six Essentials of

# Assessment Data

Leveraging Data for Student and Program Success



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Regardless of the industry, data is the key to any decision-making process. This idea has been around for years now, but what does it actually mean, and how does it apply to education? Typically, the use of data to influence decisions in academia refers to institutional research. However, this is only the tip of the iceberg — there is a wealth of knowledge available to educators within student assessment data. By leveraging the student performance data, institutions can gain a clear view about the effectiveness of the curriculum, courses, and even individual instructional methods.

Academic programs all share one common goal — to improve student outcomes while preparing students for the next step in their academic and/or professional careers. Faculty and administration are constantly evaluating how to best instruct students; however, many miss the rich quantitative data from exams that can truly provide the opportunity to evaluate and improve teaching. Instructors can identify which of their teaching strategies lead to improved student performance, while administrators can make data-driven changes to create a more effective curriculum.



# 1. Security

Exam reliability and validity are often cited when highlighting the importance of quality assessments. Educators and statisticians spend hours poring over student assessment data in a near-endless process of exam creation, implementation, and review. However, what happens to this data if students cheat? How reliable can that data be if the exams themselves are invalid due to academic dishonesty? Before we approach the data from our exams to improve teaching and learning, we must ensure the results are accurate and fair by taking the appropriate exam security measures.



While there should always be some human element to proctoring exams, using an assessment software that completely secures exam-takers' devices is a vital step in the exam integrity process. Additionally, a software that operates without an active connection to the internet greatly decreases students' ability to circumvent the system. Exams should be delivered in a way that proactively deters cheating instead of simply providing opportunities for students to get caught, which is what traditional proctoring and internet-dependent testing software do.



## How to proactively deter cheating, use an assessment software that:



1. Completely secures exam-takers' computers



2. Operates without an active connection to the internet



3. Allows posting of academic integrity policies and exam-day guidelines

Poor exam security negatively affects the accuracy of institutions' student performance data, and it can also decrease licensure exam passage rates. With inaccurate assessment data, institutions may end up passing students who are not prepared to sit for a requisite licensure exam, leading to lower licensure passage rates. Of course, lower licensure passage rates can affect the quality of future applicants for these programs as well as accreditation reviews. Finally, having secure exams that yield valid results allows institutions to evaluate how internal exams correlate with licensure exams. If internal data is skewed, institutions cannot properly evaluate course effectiveness in how students are prepared for licensure exams.





Poor exam security can affect more than just institutional and licensure data — it also affects students. Class rank, especially in professional schools, can have quite the impact on students' futures. Institutions owe it to their students to create an exam environment in which all scores are earned honestly. When integrity is maintained, students who matriculate into internships or residencies will have earned their placements. High performing students will be well-placed without missing an opportunity because of inaccurate assessment scores.

**Poor exam security affects more than just institutional and licensure data — it also affects students.**

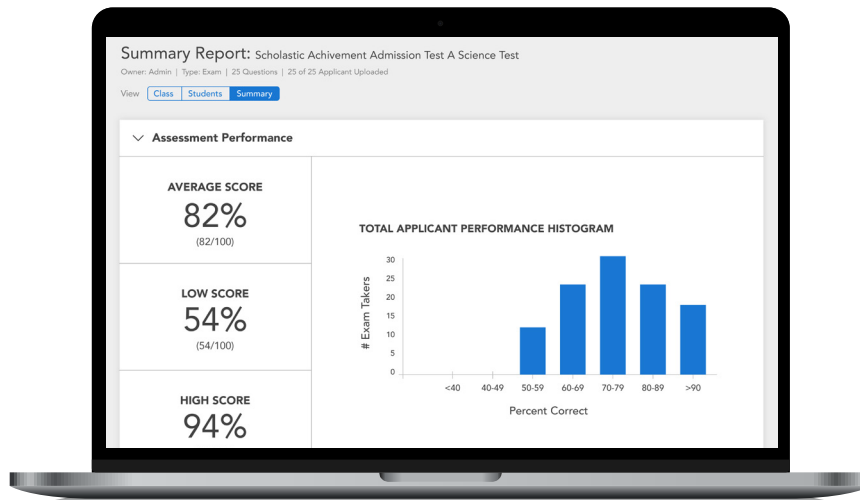
## 2. Psychometrics

With secure exams in place, it's time to start leveraging the assessment data into actionable analytics. Let's take a look into the data points provided by our exams:

### Exam Item Quality Through the Use of Psychometric Data

Reviewing item-level statistics can help educators make in-depth, data-driven evaluations in big-picture areas, including student, faculty, and course performance. Each facet of the instructional and assessment process can be reviewed and improved through use of this data and the information it provides.





## Item Writing and Evaluation

Educators understand the time and energy it takes to write quality exam questions. Even when following item writing best practices, it can be difficult to know if exam questions are achieving their intended goals. Are challenging items that are meant to discriminate between the high and low performers doing so? Are both high and low performers doing well on the easier questions? How do you know?

Assessment data is paramount in the process of writing and implementing exam items. While educators may have expectations as to how students will perform on questions, without the supporting psychometrics, exam items cannot be accurately evaluated. One of the key roles of educators is to prepare students for success beyond their courses. By ensuring appropriate use of assessments and the resulting data, educators can adequately prepare students for their next challenge.



## Blueprinting

After writing each question using best practices and psychometrics, it is time to create an overall exam that effectively evaluates students. Using exam blueprinting, faculty can create exams that achieve a more holistic purpose, such as supporting or demonstrating overall program objectives. Other goals could be ensuring students have retained information in their courses as foundational content for future lessons or preparing students for a standardized exam; blueprinting can help drive success.



Mapping exam items to content-based categories is the first step in considering how students are assessed. In addition to mapping by content area, tagging items based on difficulty level (such as Bloom's Taxonomy) will complete the development of the blueprint plan. With these pieces in place, the only remaining task is to add questions from categories to fulfill your exam goal. Do students need to master a specific subject? Make sure items tagged to that subject area make up a larger portion of the exam. Are students expected to show their ability to analyze and apply information? Include more higher-order thinking questions on the exam blueprint. Now the process is complete — students will be evaluated with exams that have been purposefully created to make sure they are meeting the learning, course, and program objectives.

## 3. Licensure Exam Preparation

One of the many tasks that faculty are charged with is preparing students for post-graduation exams, such as certification or licensure exams. Implementing the previously described blueprinting process gives institutions a clear idea about student preparedness. By tagging exam items to licensure exam content areas, faculty will be able to identify the areas in which students are struggling and remediate to these topics immediately. This creates an environment that allows institutions to react to these situations before a student does poorly on a licensure exam, thus improving the institution's reputation while saving students time and money.



## How It Works:



### Step 1

Tag questions to licensure exam content areas



### Step 2

Build and administer the exam



### Step 3

Review reports that show areas in which students are struggling



### Step 4

Initiate a remediation plan before the licensure exam

Some students may be able to pass exams and courses without retaining information long term, which can cause issues for students as licensure exams approach. Using categories, faculty can find trends relating to licensure exam content to identify students who may struggle on future exams.

Using an assessment platform, faculty and exam administrators can aggregate student assessment data over a customized length of time and include categories they specifically want to review. This type of longitudinal report can show that while a student may be able to make the grade on an individual exam, they may have other strengths and weaknesses that become more evident over time. This report not only identifies which students are having problems but also the exact licensure-related content they are struggling with, empowering educators to develop targeted remediation plans that can help students better prepare for actual licensure exams.



## 4. Accreditation

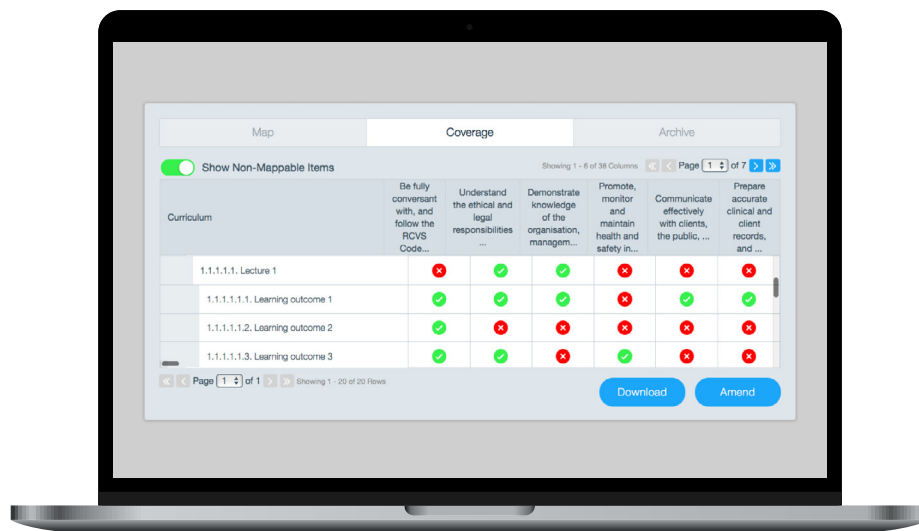
Mapping exam items to accreditation standards is an efficient and effective way to provide quantitative data to accrediting bodies that show your institution or program is meeting all the requirements. A list of a course's learning objectives cites only intentions — it does not demonstrate whether that learning actually took place. By integrating this process into their existing assessment methods, programs can report on how well they are satisfying specific accreditation standards without any extra work involved.



By tagging exam items to accreditation criteria and licensure standards, exam administrators gain a better idea of how well their students might perform on those key exams – and whether they need to adjust their instructional methods or curriculum. This is critical since licensure exam pass rates can affect accreditation. With this type of category reporting, institutions are able to provide documentation that proves the curriculum is appropriately meeting accreditation standards.

Many accrediting bodies also require institutions to continuously evaluate and improve their curriculum and classroom teaching. With category mapping that focuses on improving student performance on licensure exams, programs will have evidence of curricular improvement efforts. Thus, this process satisfies both the curricular mapping and continuous improvement elements of accreditation.

**By mapping exam items to accreditation standards, institutions can report on how well they are satisfying specific accreditation standards.**



## 5. Instructional Methods

Of course, the greatest impact faculty can have on students' academic careers is through their teaching. The instructional methods implemented in class have a direct correlation with long-term retention and performance on summative assessments. Too often, faculty select the teaching methods for the wrong reasons: it is how they were taught, it is easiest, students like it most, or it is how their mentor taught. Additionally, teaching strategies can be an experiment in trial and error.

Fortunately, the era of data-based decision-making has reached education. By mapping exam items to categories and identifying how the content was taught, faculty have the ability to statistically review which teaching methods yield the best student outcomes. Instead of receiving only the qualitative feedback from student course evaluations, faculty have the proof needed to influence how future lessons are delivered. Using data to inform faculty helps them be better teachers, and better teachers help improve student outcomes and achieve individual and programmatic goals.



**Actionable Data: Faculty can use data to influence how future lessons are delivered.**





## 6. Student Feedback

The value of assessment data affects more than just curricular and instructional decision-making. The same information can be given to students to influence their preparation for future assessments. When faculty map exam items to specific content groups, students can learn more about their performance beyond the test score. They can see trends in their performance and identify the content areas in which they need to improve. Students can then create a focused study plan to use their time outside of class more efficiently.

Giving high-quality feedback on student performance should be timely and secure. Tagging exam items allows educators achieve these goals. Students can receive quality feedback that informs them of their performance and how they need to improve immediately after the assessment. Before moving on to new content, exam-takers will have the opportunity to improve their weakest areas from the current unit. This creates a more solid foundation on which future content can be built, leading to a better opportunity for success.

## Learning Path

In the continuous mission to improve student learning outcomes and academic programs, student assessment data is the consistent source of information needed to implement the appropriate measures. In an industry that often relies on experiential and qualitative data to inspire change, actionable data can help educators make effective decisions that drive positive change. Student performance will benefit from improved course design and instruction. Faculty will be more successful in achieving student outcome goals and completing the curricular mapping process. Ultimately, this will lead to improved programs that are more desirable for potential students, all built on the use of student assessment data.





## References:

1. Adesope, O. O., Trevisan, D. A., & Sundararajan, N. (2017). Rethinking the use of tests: A meta-analysis of practice testing. *Review of Educational Research*, 87(3), 659-701.
2. Close, B. & Thompson, D. (2016). Navigating Curricular Improvement through Continuous Student Assessment Data Analysis and Quality Improvement. \_Poster presented at the 13th Annual Innovations in Medical Education Conference: Transforming Health Professions Education through Innovation\_, Keck School of Medicine of USC, Los Angeles, CA.
3. David, N. & MacFarlane-Dick, D. (2006). Rethinking Formative Assessment in HE: a theoretical model and seven principles of good feedback practice. <http://www.heacademy.ac.uk/assessment/ASS051D>
4. Kallick, B. & Colosimo, J. (2009). Using curriculum mapping & assessment data to improve learning. Thousand Oaks: Corwin Press.
5. Wayman, J.C. & Stringfield, S. (2006). Technology-Supported Involvement of Entire Faculties in Examination of student Data for Instructional Improvement. *American Journal of Education*. 112(4)

## About Turnitin

Turnitin is a global company dedicated to ensuring the integrity of education and meaningfully improving learning outcomes. For more than 20 years, Turnitin has partnered with educational institutions to promote honesty, consistency, and fairness across all subject areas and assessment types. Our products are used by educational institutions and certification and licensing programs to uphold integrity and increase learning performance, and by students and professionals to do their best, original work.

## About ExamSoft

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

