PharmaSeer Math™

Educator Implementation Guide

Pharmacy Calculations
Tutorial for Technicians
Powered by NHA

Contents

Description

PharmaSeer Math™ is an online learning resource focused on providing pharmacy technicians with skills to confidently perform common calculations used across all pharmacy settings. PharmaSeer Math™ is designed with the flexibility to be used alone or as a complement to PharmaSeer™ to deliver in-depth explanations on how to solve calculations performed in pharmacy practice. Simpler problems are presented in a very straightforward manner, and more complex calculations are presented using different methods of calculation with the user being in control at all times to choose the method that best helps them understand. PharmaSeer Math™ can replace the need for a math textbook, regardless of curriculum, while providing data and insights to both users and instructors. Additionally, custom walkthrough animations guide the learner through the steps to solve more complex calculations, start to finish and step-by-step animations engage learners and reinforce understanding by stopping at key steps and requiring input from the user. Also included are low-stakes, formative questions in every lesson and the opportunity to use My Practice to further practice calculations and receive feedback. Finally, end of lesson quizzes are designed to be more summative, with performance metrics to indicate a learner's mastery of the corresponding learning objective.

FEATURES

Feature	What it is	How to use it
Lesson Overview	Brief introductory paragraph at the beginning of each lesson	Outlines the lesson learning objective and includes a brief summary of reinforcing topics
Multimedia	Videos, images, illustrations, tables, and audio narration	Utilized to explain, clarify, and reinforce concepts and keep learners engaged throughout
Confidence Checker	Self-reporting tool after each lesson overview that must be used to report on the user's confidence level with the lesson content to follow	NHA is collecting self-reported confidence levels, but is not currently displaying this data; data may be used in the future for connecting "self-efficacy" and learner performance
In-lesson Activities	Formative items in the form of multiple-choice questions, matching, or other activities help learners gauge understanding of lesson content	Upon completion of these activities, the correct answers and rationales are provided to the learner to help understanding; these activities are not "graded," but their completion is tracked in the analytics reporting. They can be used to prepare for the EOL quizzes
My Practice Activities	Low-stakes, ungraded practice area to reinforce key concepts	At the end of each lesson, students who need further explanation or practice to understand key concepts should use prior to attempting the end of lesson (EOL) quizzes
Glossary	Definitions of key terms found within the modules	The glossary can be accessed at any time from any module, with the choice to see the entire glossary across all modules, or just the glossary terms within the user's current module
Seat Time	Amount of time a learner spends logged into, and engaged with PharmaSeer Math™	Seat time is a great way to gain insight into how individual learners are using PharmaSeer Math™, and allows for comparison between users, but also provides an average seat time by user or cohort for tracking didactic hours

Feature	What it is	How to use it
End of Lesson Quizzes	Summative quizzes at the end of each lesson to assess learners' level of mastery of lesson learning objectives	These quizzes are graded and are the basis of the performance metrics in the analytics dashboard; these multiple-choice questions are developed following the same rigorous, psychometrically-sound process used to develop official certification exam items; these quizzes can be taken as many times as desired, and correct answers and rationales are not provided
Walkthroughs	Animations that demonstrate, from start to finish, how to calculate various pharmacy calculations	The user can choose to watch all three methods for solving (Dimensional Analysis, Ratio/Proportion, Desired over Have), or can choose which method is easiest for them to understand
Step-by-step	Animations that demonstrate, from start to finish, how to calculate various pharmacy calculations with pauses at key steps requiring the user to provide correct input	These animations are meant to keep the user engaged, and reinforce the concepts by inputting values at key steps in the calculation, and provide instant feedback to the user
Three Methods for Solving	More complex calculations are presented using three distinct methods: Dimensional Analysis, Ratio/Proportion, and Desired Over Have	The user can switch between all three methods for solving (Dimensional Analysis, Ratio/Proportion, Desired over Have), allowing them the opportunity to discover the method that resonates with their understanding

Implementation Strategies

PharmaSeer Math™ is flexible enough to be used as a standalone resource for teaching pharmacy technicians how to master calculations frequently used in practice. PharmaSeer Math™ can be easily integrated into existing curriculum, wherever math is already being taught.

PharmaSeer Math™ can also work in complement to PharmaSeer™ by integrating into the schedule just before the "Pharmacy Calculations" module (module 5). Since PharmaSeer Math™ provides more foundational instruction with greater detail, completing the "Pharmacy Calculations" module in PharmaSeer™ after completing all modules in PharmaSeer Math™ provides the learner a way to demonstrate level of mastery by performing well on the end of lesson quizzes. In this way, the "Pharmacy Calculations" module becomes more like a "review" of concepts and math knowledge. PharmaSeer Math™ could be similarly integrated into the Study Guide 2.0 before the "Calculations" module (module 6).

COURSE MANAGEMENT

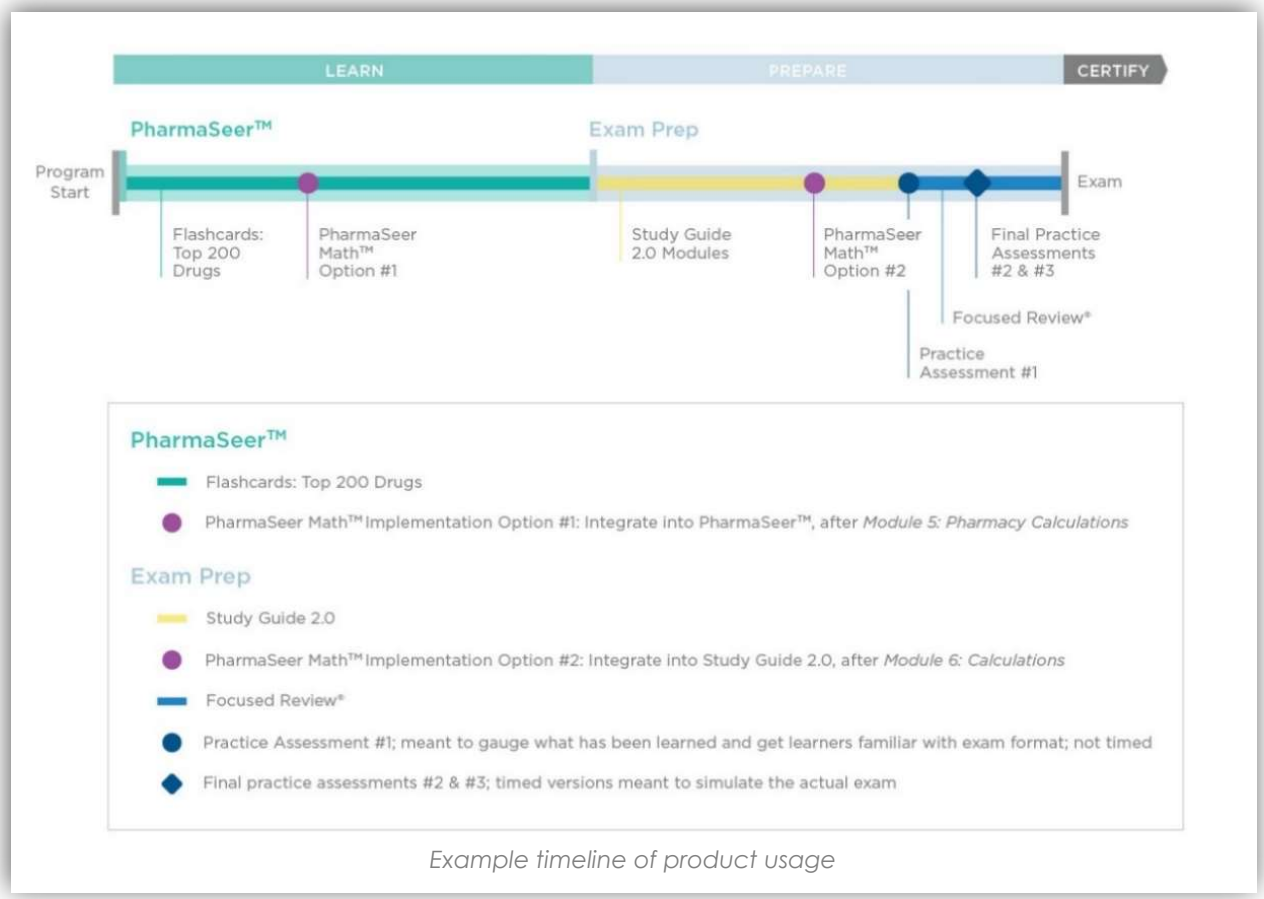
When creating a course, it is important to note that if both PharmaSeer™ *and* PharmaSeer Math™ will be used together, both products need to be loaded into a single course. Creating two courses, one for each product, will result in the analytics and reporting to be disjointed, and not available to view together as a summary. See the appendix for a more detailed explanation.

RECOMMENDED TIME

PharmaSeer Math™ Module Content	11 hours
Lesson Activities (33 x 0.16 hr)	3 hours
End of Lesson Quizzes (32 x 0.16 hr)	6 hours
My Practice	5 hours
Total Time	25 hours

RECOMMENDED TIME (IN MINUTES) PER MODULE

Module Name	Learning Content	Lesson Activities	End of Lesson Quizzes	My Practice	Estimated Total Time
Introduction and Measurement Basics	180	45	90	60	6 hr 15 min
Dispensing Calculations and Business Math	100	25	50	60	3 hr 55 min
Single-Dose Calculations	100	25	50	60	3 hr 55 min
Sterile and Nonsterile Compounding Calculations	160	40	80	60	5 hr 40 min
Calculations for Specific Circumstances	120	30	60	60	4 hr 30 min



Example timeline of product usage

PHARMASEER MATH™ IMPLEMENTATION

- Go through the PharmaSeer Math™ module outline to understand what topics are covered and in what order. The content is ordered logically; however, the modules can be rearranged to better fit an established math curriculum.
- Align module content to related math topics covered and build into lesson plans. Be sure to consider the time allotted for each module, including time spent on quizzes and working within My Practice.
- Direct students to complete all end of lesson quizzes and encourage using other features such as in-lesson activities, and additional questions and activities located in My Practice. End -of-lesson quizzes are not timed, though instructors may wish to administer them in class and set time limits to help students begin to prepare for the expectations they will experience when taking a high-stakes certification exam.
- Review the analytics dashboard regularly to gain insights into each student's progress and performance. Determine if there are any gaps in overall comprehension, or insufficiencies in how PharmaSeer Math™ is being used.
- Use reporting to identify common deficiency areas and review with students before moving on to the next module.

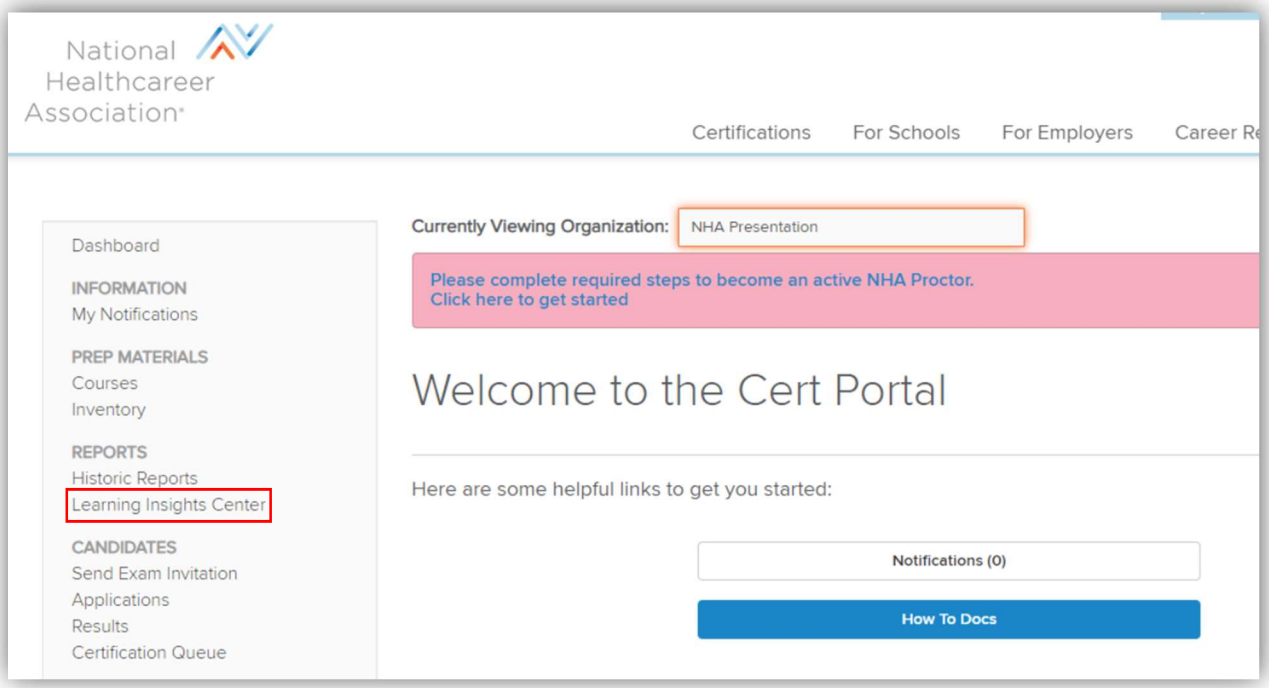
Product Support

At NHA, we pride ourselves on timely, effective support to meet your needs. Please contact us at 800-499-9092 if you need assistance with this product.

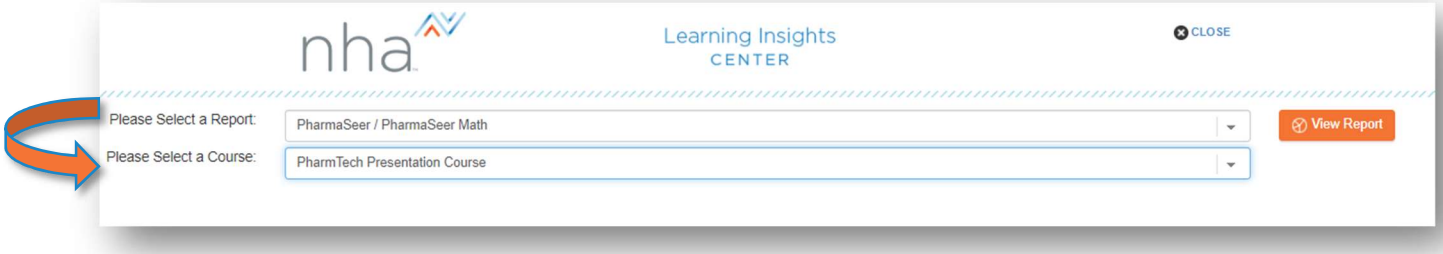
Appendix

Accessing Analytics Reports

To access reporting, login to your NHA account (https://certportal.nhanow.com/). In the middle of the page, near the type, choose your organization next to "Currently Viewing Organization," and in the left-hand column, click on "Learning Insights Center" under "Reports."



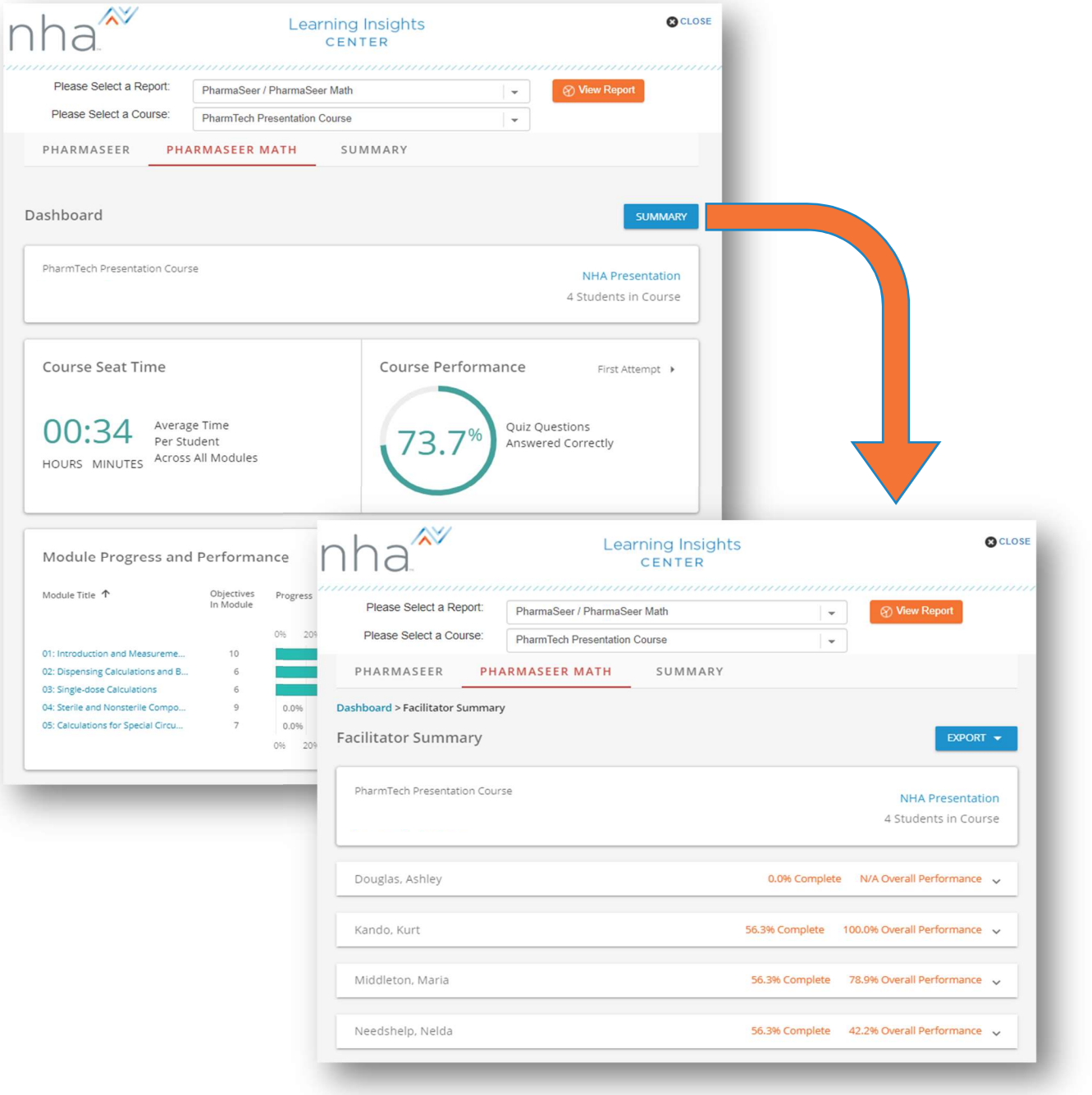
On the next page, select the report, then the class, and click "View Report."



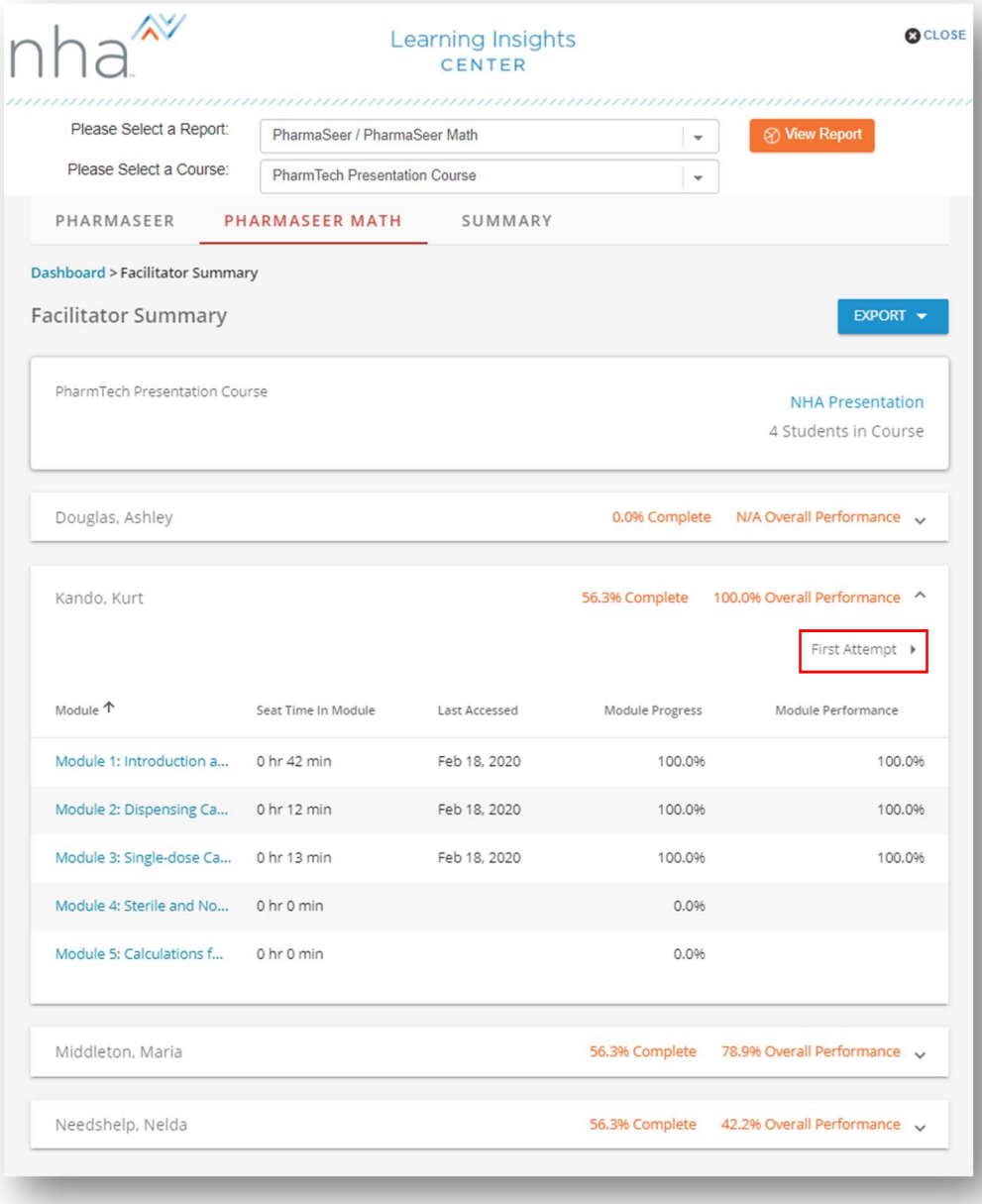
Understanding the Report

Upon accessing the report, the default view is the "Dashboard." The Dashboard summarizes the average amount of time spent per student working in PharmaSeer Math™, as well as the average quiz scores and average progress through the modules across the class.

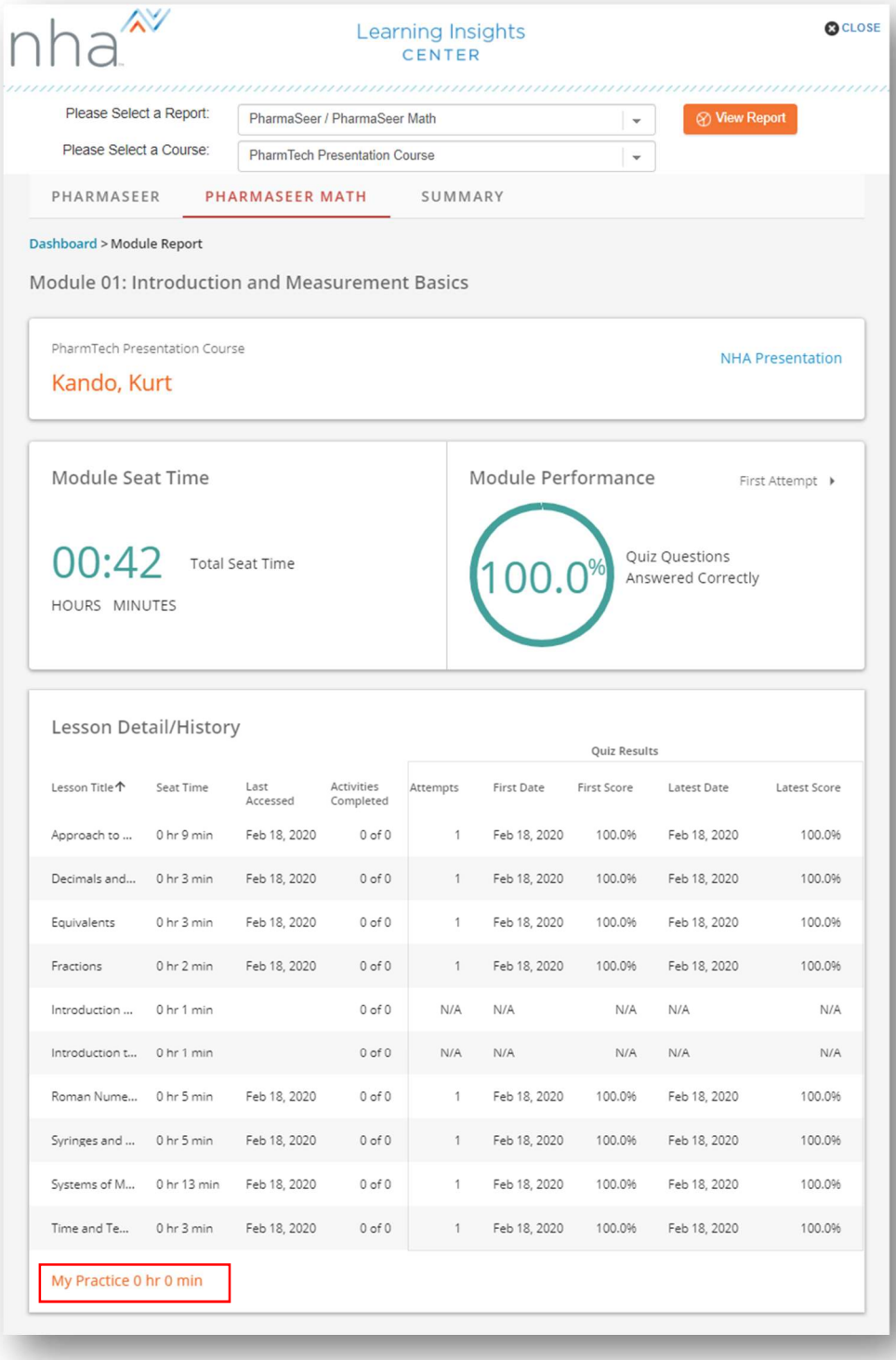
From the Dashboard, a summary of each learner can be accessed to provide an instructor an "at-a-glance" view, allowing an easy way to see if any student's data stands out compared to their peers.



From the Facilitator summary, a class summary or detailed report can be exported to a .csv file by clicking the "Export" button. These files can be saved, printed, or uploaded to a Learning Management System (LMS). The facilitator can also click on a student to expand their data and show a breakdown by module. Clicking on the student's name again, the data set "collapses" back to the facilitator summary view, or more detailed student analytics can be viewed by clicking on one of the modules.
It is important to note that by default, only the scores for the first attempt at the end of lesson (EOL) quizzes is displayed. On the right side of the report, under the student's "Overall Performance," is a toggle switch to go from "First Attempt," to "Recent Attempt," the latter being the score from the most recent attempt at the EOL quizzes.



By clicking on the module name, instructors can access lesson-level analytics for a single module. Detailed analytics for each lesson in the module include seat time, date the lesson was last accessed, the number of in-lesson activities that have been completed, and end of lesson quiz performance for both the first and most recent attempt, as well as the total number of quiz attempts.



The amount of time spent using My Practice while logged into the module is also displayed near the bottom.

While My Practice items and in-lesson activities are not scored, the inclusion of both in the reporting is intended to provide insight to the instructor to better assist students and remediate when needed to improve performance. For instance, a student may want help due to low quiz scores in a module. The instructor may observe that the student has not spent any time in My Practice and has only completed 1 of 5 activities in one lesson, and 0 in another.

In this scenario, the instructor would likely recommend the student begin using the My Practice resource and complete the activities to reinforce the lesson content before attempting the end of lesson quizzes. This provides low stakes practice that produces correct answers and rationales upon submitting the answers.