Amarillo College Case Study

Amarillo, TX



Study Specifics.

School Name
Amarillo College

Educator
Dr. Asanga Ranasinghe

Course Name
Introductory Chemistry and General Chemistry Series

Program
ALEKS Chemistry

The Study

Dr. Ranasinghe faced challenges in effectively correlating an Open Educational Resource (OER) with a learning platform. Students struggled to navigate between the textbook and the platform, causing confusion and gaps in comprehension. Seeking a solution that provided seamless integration, adaptive learning, and extensive practice opportunities, Dr. Ranasinghe transitioned to McGraw Hill's ALEKS.

Dr. Ranasinghe evaluated ALEKS's effectiveness in tackling critical academic challenges, including:

- Lowering the student drop rate
- Improving student performance
- Helping students familiarize themselves with course materials in a short time
- Providing easy adaptability through personalized learning and guided problem-solving

The level of content and adaptiveness of the system made the decision to switch to ALEKS an easy one.

—Dr. Asanga Ranasinghe

Implementation

To ensure successful integration of ALEKS, Dr. Ranasinghe implemented the platform across multiple course components:

- Quizzes: 20% of the final grade
- Exams: 65% of the final grade
- McGraw Hill Virtual Labs: 15% of the final grade

ALEKS's structured setup allowed students to grasp chemistry concepts before solving problems. Each question was accompanied by step-by-step guides, enabling students to refresh prior knowledge and apply correct methodologies. Additionally, ALEKS's extensive question bank provided customization options based on student performance.

"The way ALEKS is set up makes it easier for students to understand concepts before solving a problem," noted Dr. Ranasinghe. "The platform provides guides to refresh students' memories and teaches them correct methods for solving problems."

ALEKS also streamlined instructional support for faculty. Covering quizzes, exams, and labs, ALEKS reduced administrative workload while enhancing the learning experience.

Additionally, Dr. Ranasinghe assigns Virtual Labs to help students become familiar with experiments before attempting them in person. Since in-person labs can be intimidating for students, Virtual Labs provide a "safe" environment where they can gain confidence. This also saves valuable lecture time, allowing students to be better prepared for hands-on experiments in a structured setting. He incorporates eight in-person labs and six virtual labs, with in-person labs being hand-graded while the rest of the grade is entirely ALEKS-based.

"Virtual labs help students do the experiments before attempting them in an actual lab, making them more comfortable and prepared," said Dr. Ranasinghe. "It also saves me time in lecture, so I can focus on reinforcing key concepts."

To further support students, Dr. Ranasinghe devotes class time to an ALEKS walkthrough. He explains how the platform is structured like a pyramid, where students must explore the content and learn before arriving at the correct answer. Many students want immediate solutions, but ALEKS is designed to encourage deeper understanding and conceptual mastery before problem-solving.



Results

The transition to ALEKS significantly improved student engagement and comprehension. Students adapted more quickly than expected, and overall class participation increased.

Key Outcomes

Comprehension:
Students grasped materials more quickly due to ALEKS's adaptive design and guided learning approach.

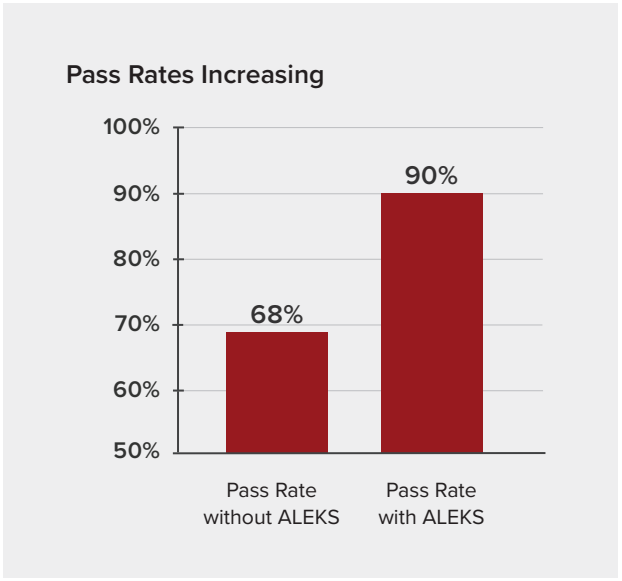
Student Success:
A student aspiring to become a nurse initially struggled with ALEKS in the Intro to Chemistry section. However, with guidance, she quickly adapted, later helping peers in study sessions. Inspired by her experience, she changed her career path to pre-med and completed the entire chemistry series at Amarillo College.

Instructor Efficiency:
Lecture preparation became easier and less time-consuming. Grading time was also significantly reduced.

Student Engagement:
More students actively participated in class discussions and study groups than before ALEKS was implemented.

Grade Improvement:
Quiz and exam scores improved significantly, contributing to a class pass rate increase from 68% to over 90%. The student drop rate also declined, while overall performance improved by at least 20%.





Students are more involved in class than before the implementation of ALEKS. Significantly improved grades and student involvement have made a noticeable difference.

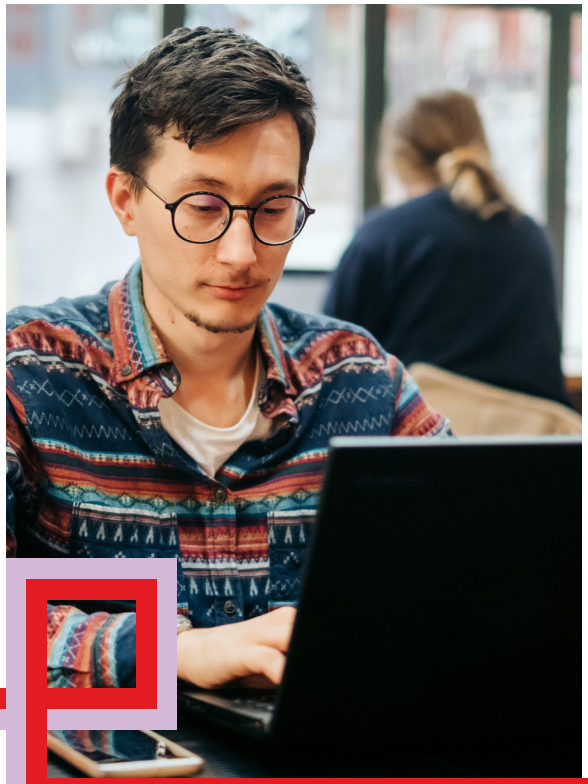
—Dr. Asanga Ranasinghe

Conclusion

The implementation of ALEKS Chemistry at Amarillo College transformed both student learning and instructional efficiency. ALEKS not only improved student comprehension but also allowed Dr. Ranasinghe to restructure teaching strategies to cater to student needs more effectively.

"ALEKS has improved my teaching style and approach in class. My students' knowledge has significantly increased," said Dr. Ranasinghe.

Given the platform's positive impact on performance, engagement, and retention, Dr. Ranasinghe regards ALEKS as a leading educational system in the market. As a result, ALEKS will remain a foundational component of chemistry instruction at Amarillo College, continuing to support student success through adaptive learning and targeted practice.





Instructor Bio

Dr. Asanga Ranasinghe is a distinguished professor of Chemistry at Amarillo College (AC) and the institution's first Distinguished Research Scientist. With a PhD from UC Santa Barbara, where he studied alongside Nobel laureates, Dr. Ranasinghe has led innovative research in drug analysis, photovoltaic devices, and electrochemical studies. He founded AC's STEM Research Club and pioneered student-driven projects, including a teeth-whitening agent with pending patents. His work with law enforcement on narcotics identification has made a significant impact. Passionate about student engagement, he integrates research opportunities into coursework, inspiring future scientists. Dr. Ranasinghe's contributions continue to elevate AC's academic standing.

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