

MyBradyLab

School Name **United Training Center, Lewiston, Maine**
Course Name **Emergency Medical Technician**
Course Format **Blended**

Key Results Data for this course show that students who had higher MyBradyLab Study Plan scores achieved higher average MyBradyLab Post-test scores, and students with higher total average MyBradyLab scores earned higher average exam scores.

Submitted by

Dennis Russell, Lead Instructor and Education Manager

Course materials

MyBradyLab and *Emergency Care*, Limmer, O'Keefe

Setting

United Ambulance Service is one of Maine's largest providers of medical transportation services, as well as Maine's first and only nationally accredited ground ambulance service. The goal of the Training Center at UAS is to provide educational opportunities that are informative, professional, and enjoyable for EMS providers, private enterprise, and members of the general community. A typical cohort consists of 10–12 students. They tend to be non-traditional students between the ages of 17 and 30.

Emergency Medical Technician is a 15-week, 176-hour course: 60 hours are spent in the classroom (optional Saturday sessions from 9AM–4PM for skills training), 100 hours online, and 16 clinical hours with 10 patient contacts. This course is designed to prepare students to become EMTs and to work effectively as a member of the health care team. The course provides didactic knowledge so that the student can efficiently and effectively give emergency medical care at the basic life support level with an ambulance service or other specialized agency or department. Students learn to recognize the nature and seriousness of a scene and emergency victims, assess the extent of injuries or illness, administer appropriate emergency medical care based on that assessment, move or position patient to minimize further injury or discomfort, and transport the patient to the appropriate medical facility. Additionally, students learn the philosophies and systems of emergency medical services as well as effective strategies for communication with patients, bystanders, families of victims, and other healthcare and rescue personnel.

Challenges and Goals

Both the challenge and the goal that United Ambulance Service faces is to produce competent, entry-level EMTs to serve in volunteer and career positions in Maine.

Dennis Russell was hired as education manager and has been teaching at UAS since July 2014, where MyBradyLab was already in use.

Implementation

Students taking the EMT course at UAS pay a flat fee that includes the textbook, access to MyBradyLab, Platinum Testing, and a background check. Russell requires students to use MyBradyLab for the introduction of new concepts, practice, and homework; students work at a class-based pace using their personal computer.

Russell's role in the classroom is to validate and strengthen the EMT concepts in a real world application. The 60 hours of classroom time is all hands-on and scenario-based; minimal time is spent lecturing as students are expected to do MyBradyLab pre-work to learn vocabulary and concepts before coming together as a group. Students work in small teams on case studies and scenarios that require critical thinking and application of concepts. They also spend significant time practicing with equipment used in the field.

Students are expected to read and review the textbook content before starting MyBradyLab assignments. The MyBradyLab Learning Modules, which allow students to review topics on their own through a self-paced interactive design, are suggested by Russell, but optional. MyBradyLab assignments generally cover 3–4 chapters per week, and include the following:

- Pre-test: Prebuilt test with two questions per learning objective, students are given unlimited attempts at completion and the assignment is not timed.

“I liked that if I did not do as well as I had hoped on a pre-test, MyLab created a ‘study plan’ to focus on homework questions that would help to increase my understanding of the material.”

—Student

- Study Plan/homework: Prebuilt homework using pre-test questions, but personalized based on pre-test results, so questions from learning outcomes that were mastered in the Pre-test are omitted.
- Post-test: Russell uses the Chapter Test as the post-test; it is prebuilt from the entire chapter test bank; the test is not timed, but must be completed and submitted by due date.

The MyBradyLab assignments are intended to help students practice with key concepts and terms from assigned reading and to provide a vehicle for individual student evaluation on a frequent basis. Course requirements indicate that students will spend about 100 hours working online. In a voluntary end-of-semester survey of Russell’s students in spring 2015 (63 percent response rate), 41 percent of students said they spent 5–10 hours per week working in MyBradyLab, while another 27 percent said then spent over 10 hours per week with the program.

One midterm exam and one final exam are created and administered by Russell, using the state of Maine EMS Standards for the EMT-Basic as a guideline. All questions correlate with Maine EMS laws, rules, and protocols. Practical exams are also based on the National Registry and/or Maine EMS Standards which include patient assessment, airway, bleeding, splinting, and cardiac and spinal immobilization. After completing the course, students sit for the National Registry EMT exam to receive their EMT certification.

Clinical hours consist of an interview and basic assessment of patients in a clinical setting (ambulance ride along, hospital/ER). Students are expected to document the following for each patient: Patient’s age and sex, chief complaint and history of present illness or injury, pertinent past medical history, current medications and allergies, physical exam and vital signs, and pre-hospital treatment, if necessary.

The Affective/Classroom Activity portion of the student grade is based on the students’ affective domain of learning including but not limited to honesty, integrity, compassion, respect, professionalism, motivation, appearance and hygiene, communications, teamwork, and time management.

The objective in Russell’s online discussion is for students to be collaborative, not combative, using the discussions to develop their skills in cooperation and teamwork. The discussion areas

are treated as a creative environment where students can ask questions, express opinions, and take positions just as they would in a more traditional classroom setting.

Because the course is comprised of lecture and practical sessions, absences are difficult to make up, so regular attendance is expected of all students. However, Russell acknowledges that conflicts and illness do arise. Therefore, a requirement of no more than two absences must be met to pass the class. Any student missing more than the allowed absences may receive a lower final course grade; if a scheduled test, quiz, homework, or discussion is missed without prior notice to the instructor, the student receives a zero grade for that assessment.

Students must pass the course with a 75 percent or higher final course grade; upon successful completion of the course, all students will receive a course completion certificate.

Assessment

35 percent	MyBradyLab
25 percent	Midterm exam
25 percent	Final exam
10 percent	Affective/classroom activity
5 percent	Discussion forums

Results and Data

Figures 1 and 2 are correlation graphs; correlations do not imply causation but instead measure the strength of a relationship between two variables. The corresponding p -value measures the statistical significance/strength of this evidence (the correlation), where a p -value $<.01$ shows the existence of a positive correlation between these two variables.

- A very strong positive correlation exists between average MyBradyLab Study Plan grade and average MyBradyLab Post-test grade, where $r=.85$ and p -value $<.01$.
- A strong positive correlation exists between total average MyBradyLab grade and average exam grade, where $r=.66$ and p -value $<.01$.

For students, the formative MyBradyLab assignment grades are intended to help them identify where they are in terms of successfully completing more summative quizzes and exams;



Figure 1. Correlation between Average MyBradyLab Study Plan Grade and Average MyBradyLab Post-Test Grade, Spring 2015 (n = 35)

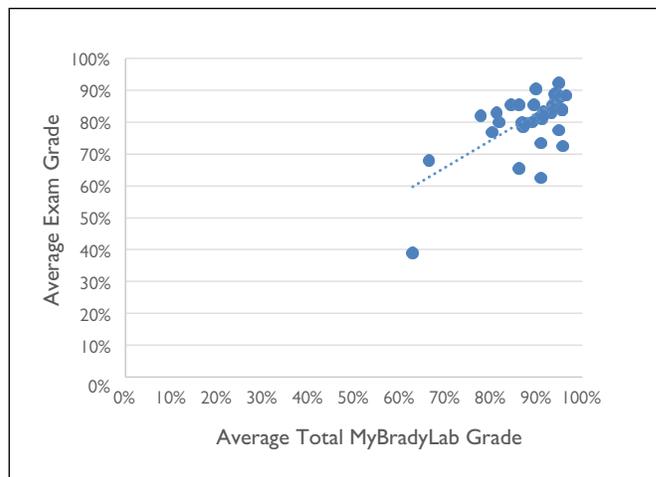


Figure 2. Correlation between Total Average MyBradyLab Grade and Average Exam Grade, Spring 2015 (n = 35)

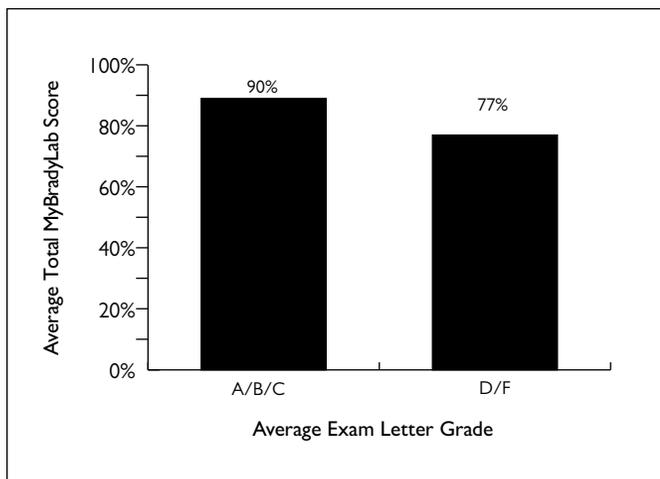


Figure 3. Relationship of Total Average MyBradyLab Scores and Average Exam Letter Grades, Spring 2015 (n = 35)

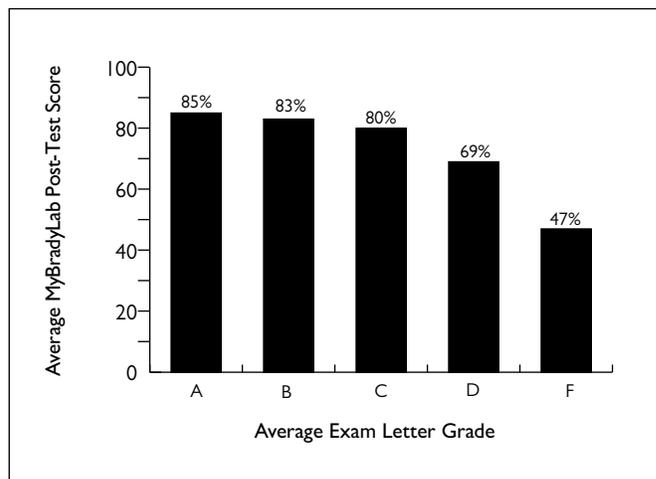


Figure 4. Relationship of Average MyBradyLab Post-Test Scores and Average Exam Grades, Spring 2015 (n = 35)

it appears that performance on these assignments could be a leading indicator of exam success (further research is needed to develop and test this concept further). As a best practice, MyBradyLab assignment grades are intended to help Russell identify students early on who are struggling and might be at risk of poor overall course performance.

Figure 3 demonstrates that students showing mastery of course content by earning an A, B, or C exam average had total average MyBradyLab scores 13 percentage points higher than students who earned a D or F for their average exam grade.

Data also show that students who earned higher average MyBradyLab post-test scores also earned higher average exam grades (Figure 4), suggesting a relationship between (a) students who follow the course guidelines and Russell’s best practices for completing MyBradyLab assessments, and (b) better student performance on the summative course assessments, such as exams.

The Student Experience

Responses to a voluntary end-of-semester survey of Russell's students (spring 2015, 63 percent response rate) indicate that the majority of responding students recognize the value of MyBradyLab:

- 91%** Agree or strongly agree that their understanding of the course material increased as a result of using MyBradyLab.
- 86%** Agree or strongly agree that the use of MyBradyLab positively impacted their exam scores.
- 77%** Agree or strongly agree that MyBradyLab provided additional resources that helped them learn more than they would have from more traditional pencil and paper homework.

When asked what they liked most about MyBradyLab on the same end-of-semester survey, students commented:

"The ability to review the incorrect answers and learn from them. I like the explanations of the answers as well."

"I liked the quizzes and tests so that we were able to assess our knowledge."

"I liked that if I did not do as well as I had hoped on a pre-test, MyLab created a 'study plan' to focus on homework questions that would help to increase my understanding of the material."

"The massive number of questions to reinforce tested information. Discussion board very useful."

"I like the multiple exposures to the material. The study plan added more question exposure, on top of the three times you're exposed between the pre-tests and homework."

"Instant feedback and ability to see where knowledge gaps were for future study."

Conclusion

The blended format of Russell's course makes students accountable for their learning: Given that 57 percent of course time is expected to be fulfilled through the use of MyBradyLab, students must identify a weekly structure for learning the content before they attend the lecture, where they begin putting the content to practice. The stakes are high in this course; students must earn a 75 percent to sit for the National Registry EMT exam, so it is important for them to learn and understand the concepts on their own. While MyBradyLab offers a wide variety of learning tools and assessment types, it is the Study Plan that students often cite as one of its most compelling features. As one student noted on Russell's voluntary end-of-semester survey, "MyLab created a 'study plan' to focus on homework questions that would help to increase my understanding of the material." Data backs this up as well, showing that students who earned higher MyBradyLab Study Plan grades also earned higher grades on the summative MyBradyLab chapter post-tests.

The combination of MyBradyLab's practice and assessment, along with Russell's hands-on approach in lecture gives his students the best combination of assets to help them earn success before taking the National Registry exam.

Implementation and results case studies share actual implementation practices and evaluate possible relationships between program implementation and student performance. The findings are not meant to imply causality or generalizability within or beyond these instances. Rather, they can begin to provide informed considerations for implementation and adaptation decisions in other user contexts. For this case study, mixed-methods designs were applied, and the data collected included qualitative data from interviews, quantitative program usage analytics, and performance data. Open-ended interviews were used to guide data collection.