wgu labs

Navigating the AI Landscape: How Students Experience Innovative Learning Tools

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Introduction

Since the public emergence of popular generative AI tools in late 2022, students are increasingly leveraging AI to support their learning. Previous **research at WGU Labs** revealed that the majority of students are aware of AI tools and have used tools like ChatGPT in their coursework, and nearly **60% of students are positive about AI use** in education. These and other studies suggest that students now view AI as an established fixture in the student's educational landscape.

Students are becoming more accustomed to using AI technology within their education and their institutions are beginning to embrace AI to support students in their learning journey. WGU Labs has led one of these initiatives at Western Governors University (WGU), partnering with the **Learning Design Alliance** (LDA) to codevelop *Lazuli*, a course authoring platform that uses AI to efficiently design and develop course content aligned to institution-specific data (e.g., learner analyses, context analyses, course content). From a student perspective, Lazuli's trained knowledge base of learning science principles ensures that the content developed extends beyond generic AI-generated responses, consistently integrating these principles throughout the learning experience. AI-powered learning activities, including

multimodal role plays, open-ended formative assessments, and authentic learning tasks, provide students with opportunities for practice, immediate feedback, and direct application of learning, all within the institution's learning management system (LMS).

WGU Labs recently completed two evaluation studies of Lazuli AI-powered learning to understand the following:

- What impact, if any, did the Lazuli course have on students' perceived learning?
- How did students describe their experience or engagement in Lazuli's AI-enabled course?

Taken together, these studies revealed several key findings that will be explained in more detail:

- **Finding 1:** Opportunities for real-time AI practice and application enhance engagement and boost confidence toward task performance.
- **Finding 2:** Students understand where AI works — and doesn't — in the learning experience.
- **Finding 3:** Students appreciate and trust immediate AI feedback showing clear guidance on where and how to improve.
- **Finding 4:** Worries linger among some students regarding the use, value, and accuracy of AI in learning experiences.
- **Finding 5:** Students' perceived knowledge and engagement are similar in AI-powered courses and existing courses (without AI).

Each of these findings brings nuanced caveats, conditions, and even cautions from students describing how these findings could be applied at WGU and beyond. Based on these insights, it is clear that students seek intentional integration of AI, firmly aligned to careful learning and design practice.

Background

In February 2025, WGU Labs partnered with administrators from WGU's School of Business to use Lazuli to pilot a new process for developing courses across the various programs. The initial project scope aimed to redesign 30 of the school's courses from the ground up while drastically reducing the time and resources traditionally required for development. The project's secondary goal was to leverage a real-world design opportunity and partnership to enhance and test the Lazuli platform's ability to support institutions in creating high-quality learning experiences.

This project began with the redesign of the introductory course, *Fundamentals for Success in Business*, which the team finished and delivered to the School of Business in approximately 200

working hours (including analyses, content writing, media development, etc.). Based on the relative success of the first course, the WGU, Labs, and LDA teams reprioritized efforts to focus on improving the quality of the learning experience. Therefore, in the second tranche of work, the teams focused on building and integrating platform features to maximize student learning and engagement, including simulated text, audio, or video AI role plays, open-ended formative assessments with immediate feedback, and learner knowledge checks, each generating rich xAPI learning data for enhanced learning tracking.

With this increased focus on enhancing learning quality, the team selected two courses in business communication for redesign with Lazuli, using AI to both efficiently develop the courses and integrate highly engaging interactivities into the students' learning experience. To evaluate the effectiveness of these newly created courses and to understand how students experience AI-powered learning, WGU Labs conducted two research studies:

- **Study 1: User Testing of Early Course Activities**
  In this study, we conducted a 60-minute interview and "think-aloud" session with five undergraduate and nine graduate students. During these sessions, researchers asked students about their previous learning experiences and were asked to evaluate AI-powered learning activities within Lazuli.
- **Study 2: Small-Scale Pilot**
  As part of a comparison study with the existing course vendor, we gave 52 students access to a newly revised Lazuli module (approximately 60 minutes of instructional text, videos, and activities). Students reviewed the content and completed the research activities (e.g., pre- and post-course survey, performance task) over a three-week period, evaluating the perceived impact of the content on their learning and experience within Lazuli.

The findings described in findings 1–3 are synthesized from data collected during these two studies. Finding 4 was informed only by the results from study 2.

Findings

Finding 1:

Opportunities for real-time AI practice and application enhance engagement and boost confidence toward task performance

The learning experience in Lazuli redefines interactive and engaging learning, going beyond clicking a button, dragging an object, or selecting the best response among a list of options. Like other content providers, Lazuli includes text, videos, and simple knowledge checks. However, Lazuli learning activities, including the AI-powered formative assessments and role plays, require learners to actively participate throughout the learning experience (see ***Figure 1***). "We're taking learning higher and further…Not only should it help improve learning and performance, I think it makes learning more fun," one participant noted. Engagement within Lazuli courses enables learners to reflect on their understanding, including their gaps and misconceptions, and apply it to a task that confirms, corrects, or builds on what learners know and can do.

Example of an AI role-play interactivity within Lazuli

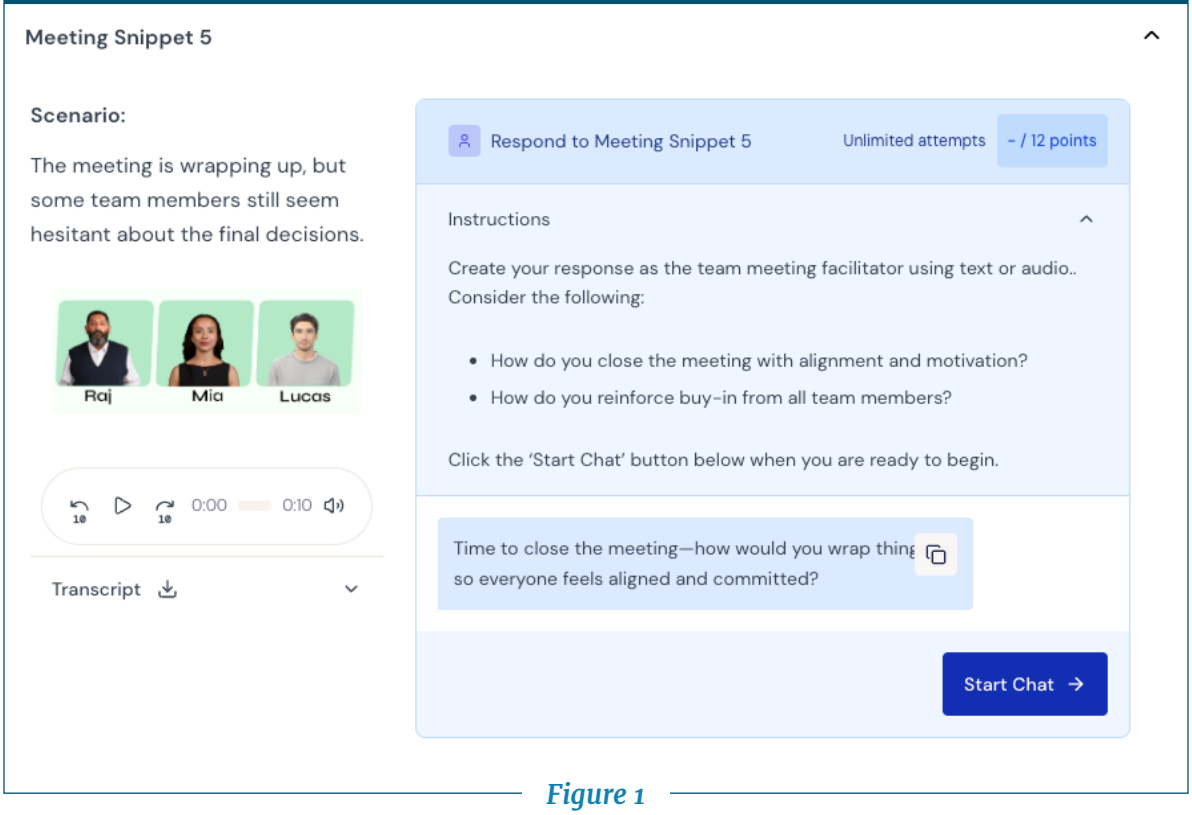
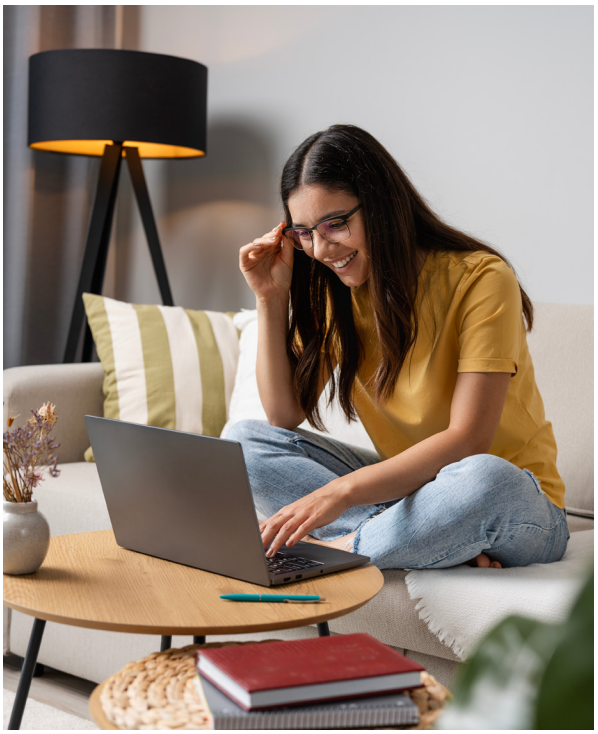


Figure 1

In addition to making the learning experience more engaging and entertaining, it also had a positive impact on students' confidence with the content by enabling opportunities to practice high-stakes skills in a low-stakes environment. One participant noted, "Going out into the field with a new degree, you're kinda already nervous. But this is a great thing because not only does it educate you, it also gives you what to say and how to say it." Referring to an interaction that required learners' engagement with a video-based AI job interview practice, another participant reflected, "I'm leaving the assessment feeling a lot more confident in my ability to apply and more confidently and masterfully go through a job interview process."



"This is the space where you can make mistakes. This is the space where you can practice with someone who's not grading you."

While many platforms incorporate activities to make learning more fun and engaging, learning is shortsighted if it is not anchored in practices to produce lasting learning or confidence gains. Feedback from participants suggested that Lazuli not only looks different on a page, but also feels different as learners improve their confidence toward the course assessment and in real-world situations.

Finding 2:

Students understand where AI works — and where it doesn't — in the learning experience

While the opportunities for practice excited participants, they quickly noticed how too much of a good thing minimizes effectiveness. The Lazuli learning experience included many AI interactivities, sometimes featuring multiple activities in a row. One participant admitted, "I believe the use of AI was overdone. There were a few too many practice problems using AI in what felt like more gimmicky ways than was necessary." Another participant simply said, "the AI was a bit repetitive."

AI interactivities take more time to complete than simple multiple-choice or matching questions, a challenge for learners trying to balance their studies with work and personal responsibilities. One participant suggested that the learning should have "more multiple choice options and less writing prompts" to avoid an overly tiring or repetitive learning experience. Another participant admitted that the course, including the AI interactions, was "too long in some places and made me feel like I wasn't progressing quickly." Noting the "overuse" of AI interactivities, another participant simply recommended to use AI "where it makes the most sense rather than using it to use it."

"Some of the [AI] submission prompts are unnecessarily long in my opinion and would likely lead to students wanting to skip over content."

But where does AI make sense in a learning experience? Where should it be applied to meaningfully support student learning?

Students suggested that fun, highly-interactive activities like AI role plays and dynamic open field responses are poor substitutes for common understanding checks like multiple choice knowledge checks, drag and drop interactions, or sorting activities. Therefore, a highly interactive AI activity may not make sense to quickly assess learners' knowledge, understanding, or even basic application of a term or concept within Bloom's taxonomy. For most participants, AI was most helpful when the activity was more "high stakes," with value outside the learning experience.

A lot of those practice "rewrite the sentence"–type things…I feel part of why that didn't work for me is because it's a low stakes situation with low stakes or even lower stakes. There doesn't really seem to be…a reward for it. I don't feel like I'm getting anything out of it for those lower stakes ones. However, with the higher stakes ones where you're practicing a high stakes situation, it prepares me a little bit more and helps me be a little bit more confident in something I'm going to do later this week, month, etc.

Beyond the application to real life, participants also saw value in the AI activities that aligned closely to the course assessment, functioning either as a pre-assessment or as the actual assessment. "If it had a more direct tie to the performance assessment," one participant noted, "where you could submit a doc and it would give an initial review…I would love that."

Despite its potential, AI effectiveness may be limited if not used appropriately and intentionally. The power of the AI interactive did not come simply from its inclusion in the content, but in its ability to prepare students for the assessment and real-world situations outside of the classroom.

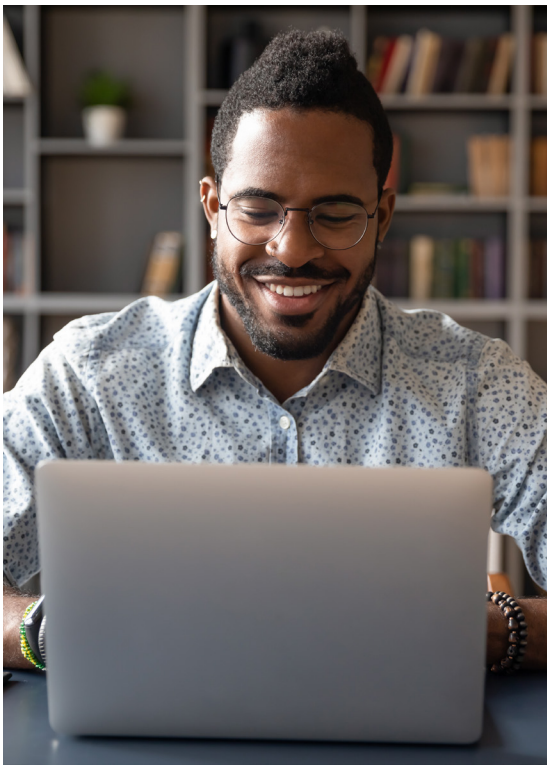
Finding 3:

Students appreciate and trust immediate AI feedback showing clear guidance on where and how to improve

Feedback is a key component of learning, yet obtaining timely feedback remains a significant source of frustration for many students. While WGU provides all students with access to course instructors and program mentors, the availability of these faculty does not always align with the availability of students. With AI, students can receive feedback on their progress in real time, when no other resource is available, enabling them to continue their progress in a true self-paced manner. Or, as one participant simply reflected, AI feedback "speeds up learning."

"There's really no fear of getting something wrong or feeling like you're going to be judged... this is your time to understand the material."

While the accessibility of immediate feedback is appreciated, feedback proves valuable only if learners trust it. One student mentioned, "I would trust [AI] enough to generally give me or take me, at least in the right direction." Students with more confidence in the subject matter demonstrated a more critical or nuanced view of the AI feedback, carefully balancing the feedback they received with their knowledge of the subject. While in the minority of participants, another student concluded that her negative experience with AI feedback "made me hope I will never have to have my work graded by AI." Generally, however, students trusted the feedback they received, especially related to formative activities that had no bearing on their course grades or overall course status.



Participants' observations suggested that AI feedback was imperfect and in need of additional development. Through comments from participants, we have identified several principles of effective feedback that are especially salient for AI systems (***Table 1***).

Table 1: *Principles of Effective AI Feedback*

Principle of Feedback	Description	Participant Example
Explanatory and purposeful	Description of why a change is needed, and how the recommended changes enhance student mastery of the content.	"It provided the 'why this is right' well."
Specific and targeted	Identification of (or direct reference to) the specific correct or incorrect elements of a learner's response, and outlines clear actions needed to improve.	"It quotes what you said… what was good, what was supportive… and then maybe what wasn't potentially." "I was roadblocked by the AI being quite general and not too helpful in several grading spots, and wished I could ask clarifying questions."
Flexible and inclusive	Prioritization on conceptual knowledge and skill rather than rigid fixation on grammar, spelling, and other learning errors indirectly related to course objectives.	"I also feel like the grading was maybe a little too rigid. I feel like I gave responses that typically would have been sufficient enough to receive full points, but lacked that ability with the computer grading."
Aligned to the content	Focused evaluation on factual, relevant items addressed by the proximate content. Exceptional feedback refers learners to specific areas of the text for further support.	"When I received AI-generated feedback, it was not always on point and docked me for things I either did correctly or for things that weren't clearly indicated on the task instructions."
Supportive and encouraging tone	Use of a positive, helpful, and encouraging tone, supporting learners' ongoing learning.	"I'm a bit of a 'growth junkie.' I'm not thrown off by [feedback], but I know some people are a little more sensitive to criticism." "[AI feedback] does lack that human element"

Effective feedback is a part of every impactful learning experience. As learning becomes increasingly mediated with AI technology, product and learning designers need to ensure that quality feedback is not sacrificed in these AI-mediated learning experiences.

Group 4 Vision of Prosperity:

Concerns linger among some students regarding the use, value, and accuracy of AI in learning experiences

As AI becomes more widely available as an embedded feature of new and existing EdTech platforms and products, questions remain about how or where institutions can position AI to have the most significant impact on learning. While participants in this research described generally positive attitudes towards AI in their learning, some participants expressed personal or anticipated concerns about how or where AI could be integrated effectively.

Concern #1: AI may be more effective in certain contexts than others…for now

Most participants appreciated the AI role plays and other activities that allowed learners to practice high-stakes skills in a low-stakes environment. However, participants suggested that AI use may be more effective in certain contexts. For example, one participant embraced AI in "basic" courses like science and business, where answers appear straightforward and objective. However, in subjects like healthcare with significant nuance, he suggested that the content's complexity may limit AI's ability to effectively support learning. He further noted that relying too heavily on AI threatens to make learning "too impersonal." Similarly, another participant suggested:

> The heavy reliance on AI for grading in creative environments (where more than one predefined outcome is considered passable) is not advisable, as that exceeds the limits of generative AI. A human needs to verify that work is valid or your degree will be worthless.

Whether accurate or not, these perceptions of use may impact learners' adoption of AI tools within various learning contexts.

Concern #2: Learners may not be entirely comfortable using AI in certain formats and situations

Learners have preferences for how they choose to engage with and consume content, including AI interactions. With AI interaction available through various modalities — text, audio, or video — (***Figure 2***), participants appreciated the ability to choose how to engage with AI.

Example of Lazuli Interactivity Providing Choice of Modality

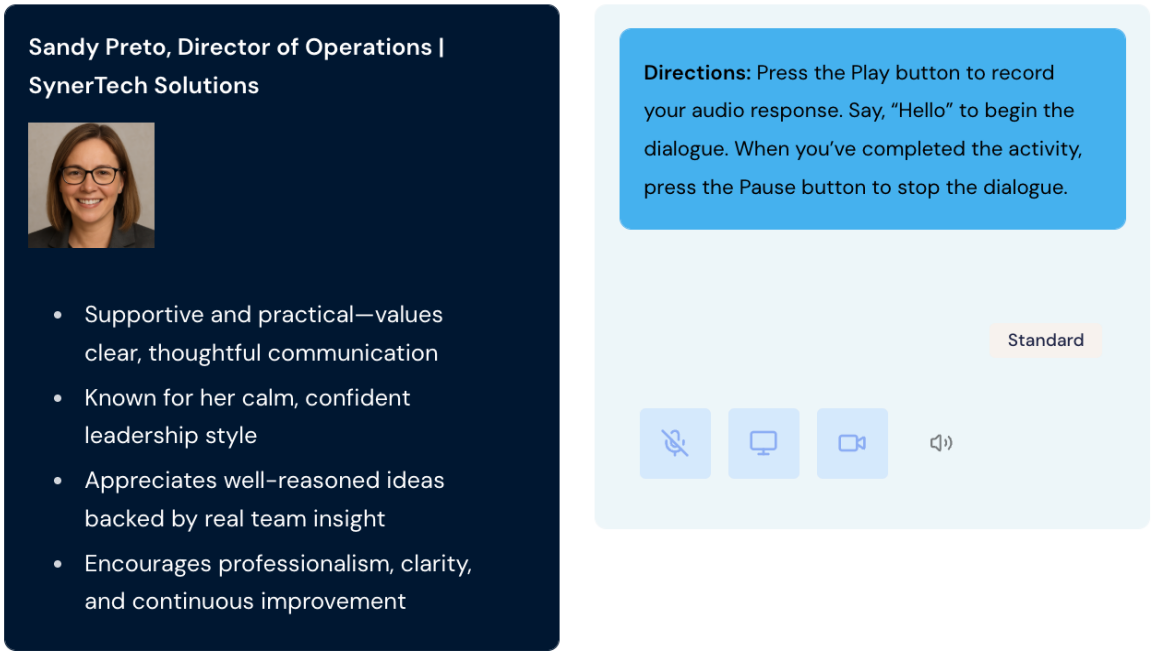


Figure 2

Participants' modality preferences commonly emerged when they explored interactivities with the AI via video. At one part of the testing session, we asked participants to complete a mock job interview using the video option, allowing the AI to evaluate the participants' eye contact, dress, and visual background in addition to the spoken words. While most participants embraced this learning opportunity, others expressed noticeable discomfort. One participant reflected that the interview role play was the only thing she disliked about the learning experience, but admitted that this likely resulted from the anxiety she felt in job interviews and not from the learning itself.

"Some people may find [video AI feedback] intrusive, but I think some people need to hear that too."

While the multimodal AI role plays and activities may provide learners with desirable difficulties needed to enhance knowledge, skills, and confidence, some learners may still prefer to perform these tasks with humans. One student concluded, "I would like there to be an option to do a mock interview with a person/advisor. Some people don't feel comfortable allowing the AI to view them on camera or record their voice."

Concern #3: Learners want to know when and how AI will be used in the course

Despite having previous access to AI tools for several years, the highly interactive AI elements surprised students who are generally accustomed to static and fixed content. Within user testing where participants were observed while they engaged with the content, many participants demonstrated visible uncertainty or even hesitation before interacting with AI elements — they simply did not expect to see these interactivities in the course. One participant noted, "I think going into it, I wasn't sure exactly how to start."

"This can be very confusing for somebody that's not very tech savvy. I'm thinking of older [learners]. I'm not tech savvy like my daughter, but this can be confusing for them."

Once they started experimenting with the interactivities, participants generally responded positively to the learning. Participants suggested that overall guidance on the use of AI at the beginning of the course and prior to the learning experience could inform learner expectations and prepare them to use these tools effectively.

Concern #4: Collecting, storing, and using personal data

With more opportunities to engage in learning through open-ended responses and role play situations, participants were unsure of how their inputted information would be collected, stored, and used. While it is unlikely that a formative assessment within a course would ask for

personally sensitive and private information, one participant admitted that some students may be more trusting if data practices with AI were more explicitly explained:

"I know that it's AI and that all of my responses could be saved to help improve the system. I could see why a disclaimer would be needed because some people may not realize just depending on their age and their background…It wouldn't bother me to see a disclaimer. It wouldn't make me think differently either."

A small note, or disclaimer, may be a useful approach to ensure learners do not unknowingly provide sensitive personal information in AI platforms, and alleviate potential concerns some learners may have with data security and privacy.

Concern #5: AI (still) makes mistakes

While the use of AI in the learning experience was overwhelmingly positive in our research, some participants were quick to point to the technology's imperfections. One participant noted, "while this is helpful technology, it is not infallible and it does often make many mistakes." Another admitted, "I wouldn't trust [AI] to publish something, but I would trust it enough on a very specific situation like the scenarios that are in here."

While humans are also prone to errors in instruction, grading, and feedback practices, the errors of AI remain a concern for learners. AI errors may limit a learner's willingness to engage in learning due to distrust, or may result in unquestioningly embracing AI and trusting too deeply in its responses.

Finding 5

Students perceived knowledge and engagement are similar in AI-powered courses and existing courses (without AI)

Within study two, we tested students' perceived knowledge of the course materials based on two versions of the course, one existing and one with AI-enhanced interactivities. When comparing both groups and scoring for various student characteristics (e.g., experience with the course, business experience), we found no statistically significant differences in perceived knowledge and confidence in business communication after participants reviewed course materials.

To provide a baseline of knowledge for the test, we conducted a pre-course survey of participants, in which we found high levels of existing confidence related to business communications across the sample (***Figure 3***).

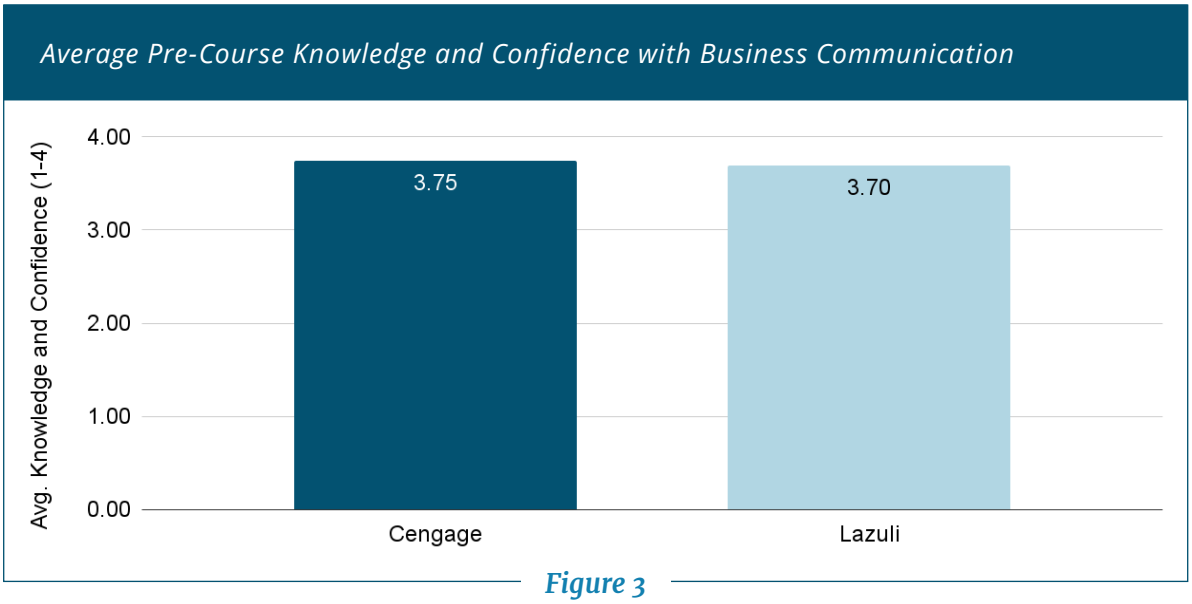


Figure 3

Following the content review, we administered a post-course survey to participants in both groups, aiming to capture changes in learning over time (before and after reviewing the course materials) and between groups. Participants in both groups showed slightly elevated average perceived knowledge and confidence in business communication after reviewing the course (***Figure 4***). When comparing the post-course survey scores between groups, participants from the existing course had a slightly higher overall average score; however, these differences showed no statistical significance, even when controlling for various student characteristics.

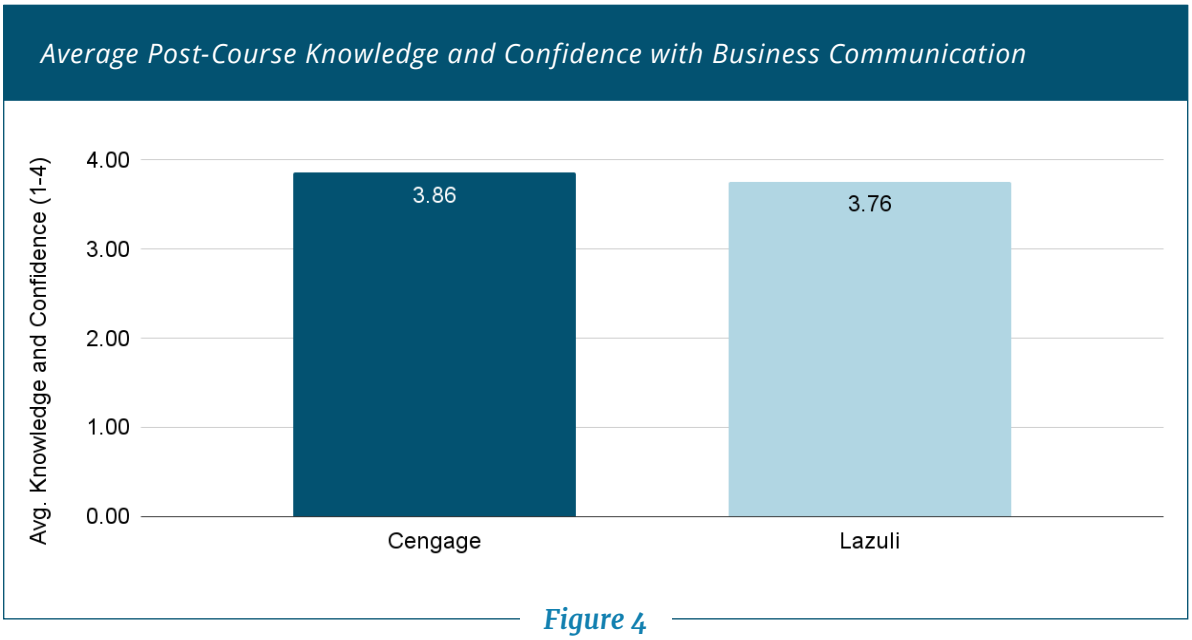


Figure 4

As part of the course in study two, participants completed a small performance task (i.e., writing a cover letter) to demonstrate their ability to apply the learning from the content to a real-world task. Scores were averaged across the two versions of the course and compared (***Figure 5***). On average, students taking the Lazuli course scored slightly higher than students in the existing course, but these differences were not statistically significant, even when controlling for various student factors.

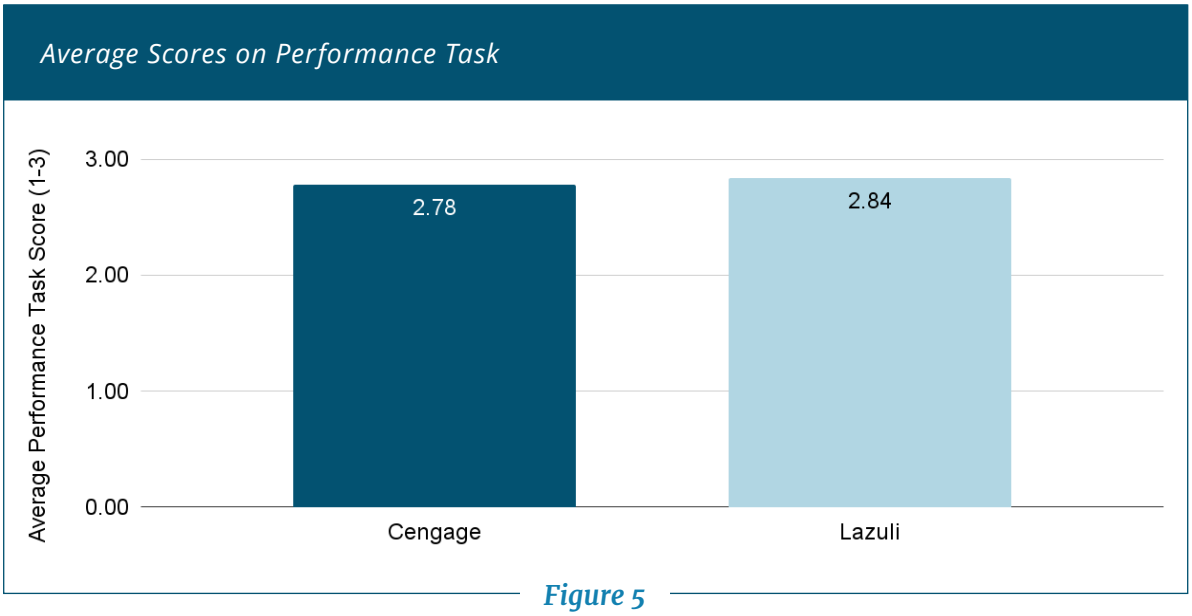


Figure 5

In the post-course survey, participants in both course versions rated the effectiveness of various course elements (see Appendix A), and we averaged scores across the two versions (***Figure 6***). As a result, students reviewing the Lazuli course demonstrated slightly higher learning effectiveness scores than students reviewing the existing course, but these differences were not statistically significant.

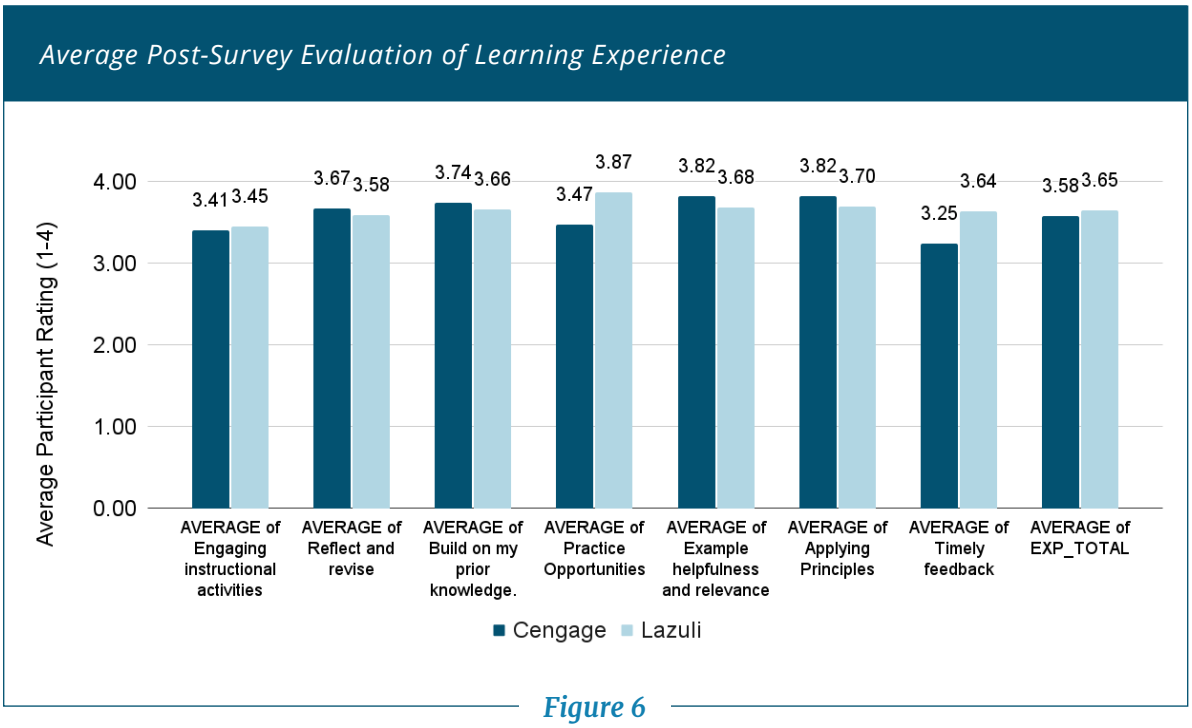


Figure 6

While these findings represent a small overall sample of the larger student population, they demonstrate that the course developed using Lazuli is approximately equal to the existing course in its impact on perceived student learning and overall effectiveness. This finding represented a major success for WGU Labs, LDA, and partners in WGU's School of Business as it demonstrated our ability to use Lazuli and the underlying AI technology to efficiently develop high-quality learning experiences. Additionally, as Lazuli is still nascent technology, we believe that the capacity for Lazuli to create effective learning experiences with efficiency will only improve.

Conclusion

As AI use among students moves beyond the early adopters into the majority, students are developing clear ideas and expectations for how AI should be integrated into their learning. The novelty of AI in education is beginning to wane, no longer the "flash in the pan" that came with the emergence of AI and the wave of tools and technologies that soon followed. Students are seeking learning that demonstrates mature and carefully designed uses of AI technology, learning that respects and honors their limited time and resources. Gimmicky and unintentional uses of AI will, at best, be readily ignored by students, and at worst, deepen disengagement with and distrust of their learning institutions.

In contrast, clear and intentional applications of AI, including enabling the practice of real-world skills supported by accurate and targeted feedback, excite students and support the development of valuable skills and competencies. This strategic use of AI has an impact on how students view AI for learning, how they experience the course, and how they apply skills in the workplace. As one participant noted:

> *"This is reality. It gave examples to help with common mistakes and how to correct them. It gave examples that were easy to follow and apply to my situation (or anyone's situation)."*

While AI technology may be considered nascent within educational settings, the abilities already demonstrated by Lazuli and similar tools are impressive. AI has enabled learning opportunities that were previously unscalable within higher education institutions straddled by insufficient resources. These opportunities include:

- Supporting highly interactive learning via text, audio, and visual modalities.
- Creating opportunities for practicing authentic tasks within a low-stakes context.
- Providing rubric-aligned, just-in-time learner feedback.
- Enabling dynamically-generated content based on learners' inputs.

While these opportunities are quickly becoming the new reality with advancing AI technologies, how designers, product owners, and administrators build, design, and implement AI technology will further shape the future of learning.

Appendix

Pre-Assessment/Post-Assessment

Instructions:

The purpose of this survey is to understand your knowledge and confidence related to business communication. The information you share, including your email, will only be used for the purpose of this pilot study. If you have any questions or concerns, please email Tadd Farmer at tadd.farmer@wgu.edu.

What is your name? [open text]
What is your email? [open text]

Please respond to the following statements regarding your knowledge and confidence in professional or business communication.

Scale for Questions:

1 = Strongly Disagree | 2 = Disagree | 3 = Agree | 4 = Strongly Agree

Clarity & Structure

1. I can organize my writing in a clear and logical structure.
2. I can express my ideas clearly and concisely in writing.
3. I can tailor my written communication to suit the purpose and audience.

Tone & Professionalism

1. I can use appropriate tone and language in professional writing.
2. I am confident in writing emails, memos, or reports in a professional setting.
3. I can revise my writing to improve tone, clarity, and impact.

Mechanics & Quality

1. I can proofread my writing to correct grammar, punctuation, and spelling errors.
2. I am comfortable using tools and strategies to improve the quality of my writing.
3. I am aware of common writing mistakes and actively work to avoid them.

Feedback & Improvement

1. I welcome feedback on my writing and communication.
2. I can reflect on my writing and identify areas for growth.
3. I can use feedback to make improvements in my writing.

Confidence & Transferability

1. I feel confident in my ability to write effectively in professional or academic settings.
2. I believe strong writing skills are essential to my success.
3. I can apply what I've learned about writing to future work or learning opportunities.

Post Assessment Quality

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2. I believe strong writing skills are essential to my success.
3. I can apply what I've learned about writing to future work or learning opportunities.

Instructional Content

1. The lesson content helped me understand how to apply communication principles in a business context.
2. The examples and explanations provided were helpful and relevant.
3. I had enough practice opportunities to apply what I was learning.
4. The content helped me build on my prior knowledge.
5. I received clear, timely feedback on my learning.
6. The lesson encouraged me to reflect on and revise my thinking.
7. The instructional activities kept me engaged throughout.

Open-Ended Questions

1. What was most helpful about the lesson and/or assessment experience?
2. What challenges did you encounter?
3. How could we improve the lesson or assessment experience in the future?

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About WGU Labs

WGU Labs is the research and development arm of Western Governors University, where our mission is to identify and support scalable solutions that address the biggest challenges in education today.

Report Contributions

This report was authored by Tadd Farmer, with valuable contributions from Natalie Berkey, Betheny Gross, Anudhi Munasinghe, and Holly Wallace, with visual design by CallyAnn Hamilton.