

WHITEPAPER

The Active Learning Impact Study

Measuring the Effects
of Engagement on
Knowledge Retention

Table of Contents

Executive Summary	3
The Active Learning Journey	
Methodology	
Results	
• Talk Time	
• Nonverbal Engagement Incidents	
• Test Scores	
Conclusion	
About This Paper	5
Introduction	6
The Challenge	
Has Technology Kept Pace?	
What Have We Learned?	
Active Learning	8
The Active Learning Journey	
• Level 0: Passive	
• Level 1: Connected	
• Level 2: Collaborative	
• Level 3: Transformative	
Our Methodology	
The Results	11
Engagement	
Active Learning Impact	15
Conclusion	16
About Engageli	
Sources	

Executive Summary

This paper is the result of an experiment conducted by the Learning and Teaching team at Engageli. The goal of the experiment was to determine if a class taught with increasing levels of engagement would yield proportionally better learning outcomes.

The Active Learning Journey

Engageli's scaffolded approach to active learning includes four levels:

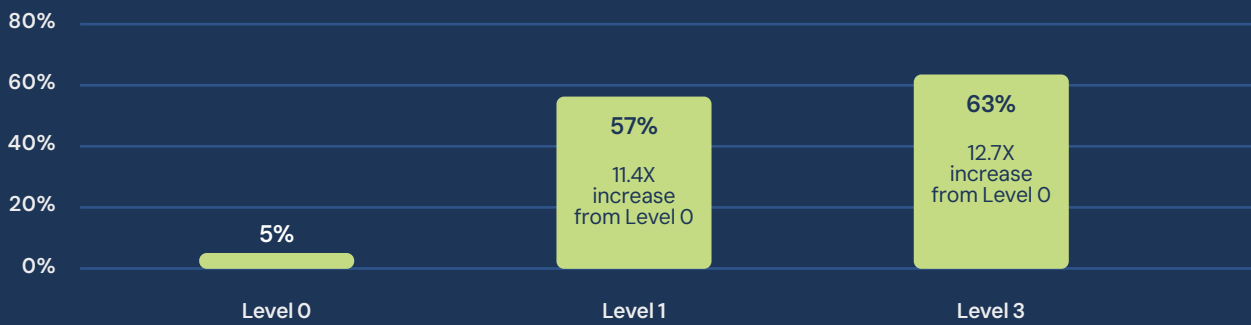


Methodology

A single class was conducted at Levels 0, 1 and 3 of the Active Learning Journey. Engagement was measured through talk time, emoji reactions, chat interactions, hand raises, poll responses, note taking, and whiteboard activities. Subsequent knowledge retention was tested one week after the classes.

Results

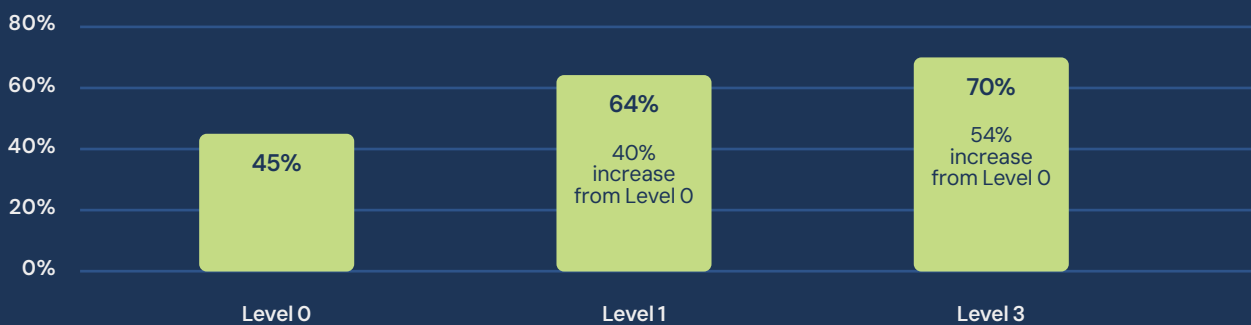
Talk Time



Nonverbal Engagement Incidents



Test Scores



Conclusion

Engageli's research confirms that active learning in virtual environments leads to better engagement and superior learning outcomes. Active learning online, when effectively implemented, can rival traditional in-person instruction in terms of engagement and knowledge retention.

About This Paper

At Engageli, we believe online education can be as engaging and interactive as the best in-person learning. We believe that a virtual classroom can be a place where employees, partners and customers actively participate, collaborate, and connect with peers and instructors.

Our conviction is that effective learning comes from active engagement, not passive consumption, and we oppose systems that compromise these principles with complexity and risk that push instructors toward a safer but far more passive pedagogy.

Our passion for active learning led us to a project that would demonstrate that active learning online drives measurably increased engagement that leads to improved learning outcomes.



Introduction

The Challenge

The COVID-19 pandemic pushed the corporate world into remote and hybrid work environments with unprecedented speed and urgency. Overnight, companies transformed traditional in-person employee, partner and customer training sessions into virtual formats, rapidly adopting advanced technology to maintain training continuity.

Instructors, confident in established processes and face-to-face training, suddenly pivoted to a stack of new tools to keep training engaging. Employees became more isolated and distracted.

Essential team-building activities and social interactions, crucial for professional development, disappeared. Training quality varied widely, depending on available resources and instructors' proficiency with technology.



Productivity Suffered

According to a report by McKinsey, 62% of employees felt less productive working remotely, while a Gallup study showed that employee engagement dropped by 20%. Additionally, the Society for Human Resource Management (SHRM) reported a 40% increase in employee turnover rates.

Knowledge retention decreased, and participation rates dropped as employees struggled to adapt to the new mode of learning, leading to decreased productivity, lower employee morale, and increased turnover rates.



Business Suffered

According to a Deloitte report, 45% of organizations experienced a decline in customer support quality, and 55% faced challenges in maintaining compliance. Employee proficiency also suffered, with 50% of businesses noting a decrease in employees' ability to perform their job functions effectively.

Has Technology Kept Pace?

Learning technology has advanced to meet these new demands, but challenges remain. Learning management systems support a wide range of training activities. Gamification, quizzes, and polls enhance engagement. High-quality multimedia content, including videos and virtual labs, makes complex concepts more accessible. AI now powers personalized learning experiences, catering to individual employee needs.

Video conferencing supports real-time communications between instructors and employees, but these platforms were not built to replicate a true classroom experience. Subsequent add-on modules are often unstable and complex, discouraging instructors from taking the risk of breaking the class into working groups to apply what they've learned.

This technology gap significantly impacts the ability for learning and development to reap the benefits of active learning. While each tool steadily advances, the lack of integration creates complexity and risk.

Ongoing professional development helps but does not address the reality that technology adoption varies across a spectrum of users, depending on their technology acumen and appetite for adoption and risk.

What Have We Learned?

This journey highlighted the need for commitment to a learning model that supports synchronous, asynchronous and hybrid learning in a personalized and integrated fashion.

Flexible training design has become essential as personalized learning opportunities emerge. Alternative strategies and continuous feedback now replace traditional assessment methods. Instructors require professional development in digital pedagogy.

Engaging employees and fostering instructor-employee relationships in a virtual environment demand innovative approaches. The "new normal" involves a resilient and adaptable blended learning model that combines live classes in a virtual classroom, immersive asynchronous training and hybrid formats.

This approach uses engagement metrics such as participation rates, interaction levels, and feedback quality to drive continuous improvement and identify at-risk employees.



By leveraging these metrics, organizations can increase engagement, inclusion, and superior learning outcomes in corporate learning and development.

Active Learning

Active learning engages employees, partners and customers (learners) in the learning process, promoting deeper understanding and retention.

Unlike traditional methods where learners passively receive information, active learning emphasizes participation and interaction through activities like discussions, problem-solving, and collaborative projects. This approach encourages critical thinking, allowing learners to analyze, synthesize, and evaluate information.

Techniques such as group work, peer teaching, and hands-on experiments cater to diverse learning styles, while immediate feedback and reflection help learners consolidate their knowledge. Overall, active learning creates a dynamic learning experience that fosters engagement and enhances the learning experience.

Active learning suffered a setback with the shift to remote work. The reliance on face-to-face collaboration, discussions, and hands-on activities was difficult to replicate. This problem was compounded by the complexity of educational software and challenges with digital literacy.

Many digital tools and platforms are not intuitive, creating a steep learning curve that diverts focus from learning to figuring out the technology. This complexity frustrates and disengages both learners and instructors who may lack the necessary digital skills.

Inadequate training and support further exacerbate these issues, resulting in inconsistent participation and diminished interactive experiences. Consequently, the benefits of active learning, such as increased engagement and deeper understanding, can be significantly undermined in online environments.

The Active Learning Journey

The Active Learning Journey is Engageli's scaffolded approach to implementing active learning to its fullest potential. Recognizing the spectrum of technology adoption and risk appetite among educators, we've created stages that measure the incremental rewards of active learning while making both risk and adoption more acceptable. The Active Learning Journey can be used to onboard new Learning and Development managers and evaluate both asynchronous and synchronous classes for continuous improvement.

Level 0: **Passive**

Learners receive information from an instructor with little to no active engagement. Learners primarily listen and take notes, focusing on memorization rather than participation or critical thinking.

Level 1: **Connected**

Class is broken into simple table exercises that build peer-to-peer connections.

Level 2: **Collaborative**

The Connected class is enriched with group activities and projects.

Level 3: **Transformative**

The Collaborative class is amplified with dynamic polls, quizzes, and videos—encouraging the students to apply their knowledge and learn from each other.



Figure 1: The Active Learning Journey

Our Methodology

In our active learning experiment, we conducted three classes in Engageli's virtual classroom.

Each class participant was oriented to the environment to ensure every learner had equal opportunity to use its features. Each class delivered the same topic to groups with similar class sizes (22, 22, and 26 learners), demographics, technology know-how, and prior knowledge of the topic.

Each class began with a baseline test to assess initial understanding. The first class was taught at the Active Learning Journey Level 0, using a passive teaching approach. The second was taught at Level 1 using basic active learning techniques. The third class was taught at Level 3, featuring higher levels of active engagement. (Note: the more active classes ran longer than the passive one).

Throughout each class, researchers measured verbal and non-verbal indicators of engagement across several channels (shown adjacent).

Reactions, Chats, Hand Raises, Poll Responses, Whiteboard and the Interactive Notes were measured per incident. We combined this insight with talk time to paint a fuller picture of engagement for each class. This structured approach allowed for a clear comparison of increasing levels of active engagement.

Each class was then tested one week after the class to correlate knowledge retention with engagement and compare the outcomes of each class.

ENGAGEMENT CHANNELS



Talk Time

Learner talk time is measured in seconds. To account for variations in class length and class, we reported on learner total talk time as a percentage of total class time and per learner talk time as a percentage of total class time.



Emoji Reactions

Learners responded during class with a variety of positive or negative (thumbs up/down, etc.) expressions.



Chat

Learners were able to chat privately, with their teams, or to the entire class with Engageli's integrated chat feature.



Hand Raise

Engageli interface features a Hand Raise icon in the center of the screen. Learners move to the "front of the class" when they click the icon, mimicking a live classroom.



Poll Response

Engageli integrates polls into a class either automatically through quick polls or embedded in the instructor's content. This feature provides knowledge checks and engagement for Active Learning.



Whiteboard

Engageli also integrates a whiteboard into the environment. A whiteboard activity was featured in the Level 3 class.



Interactive Notebook

Engageli's unique interactive notebook allows students to capture and annotate screens while taking time-stamped notes. Learners can rewatch the recorded class at points when notes were taken.

The Results

Engagement

Research supports that increasing learner talk time leads to greater engagement. Studies from Harvard and Stanford have shown that active participation, including verbal interactions, enhances learner engagement and learning outcomes. Harvard's study found that learners who engaged in active learning scored higher on tests despite feeling they learned more from lectures.

Engageli's table activities drive verbal engagement in a powerful way. Note **Figure 2**—you can see the spike in verbal engagement during the two separate table exercises in the Level 3 class. The light blue represents participants' talk time around their virtual tables during a discussion activity.

Verbal Engagement Timeline

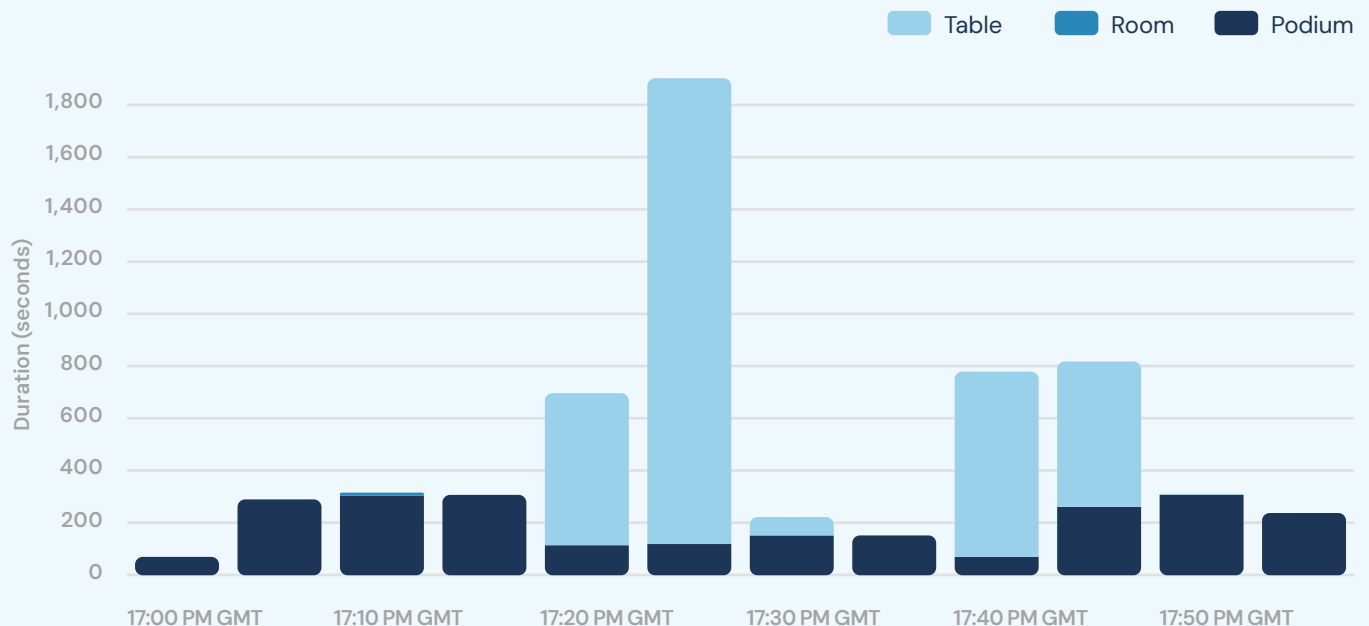


Figure 2: Level 3 Verbal Engagement Timeline Detail

Total Learner Talk Time

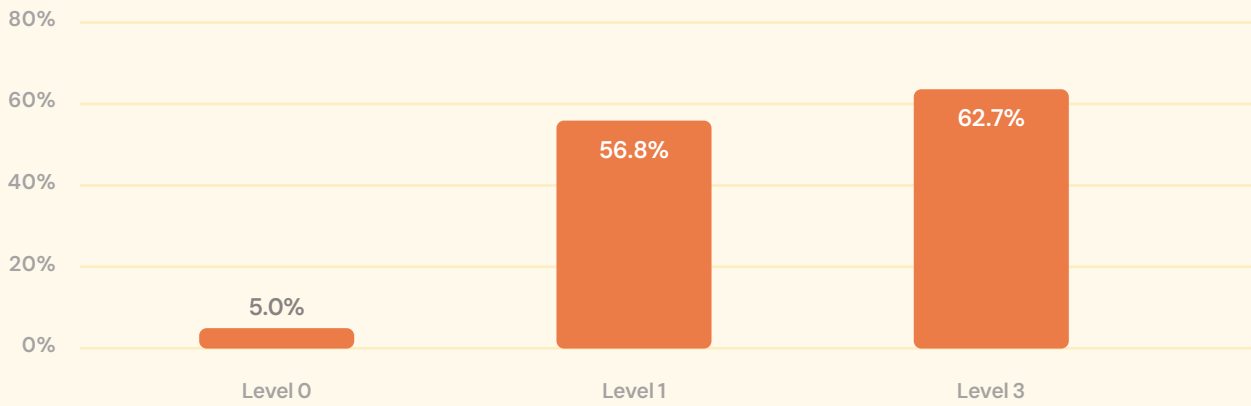


Figure 3: Total Learner Talk Time with reference to Total Class Run Time

Per Learner Talk Time

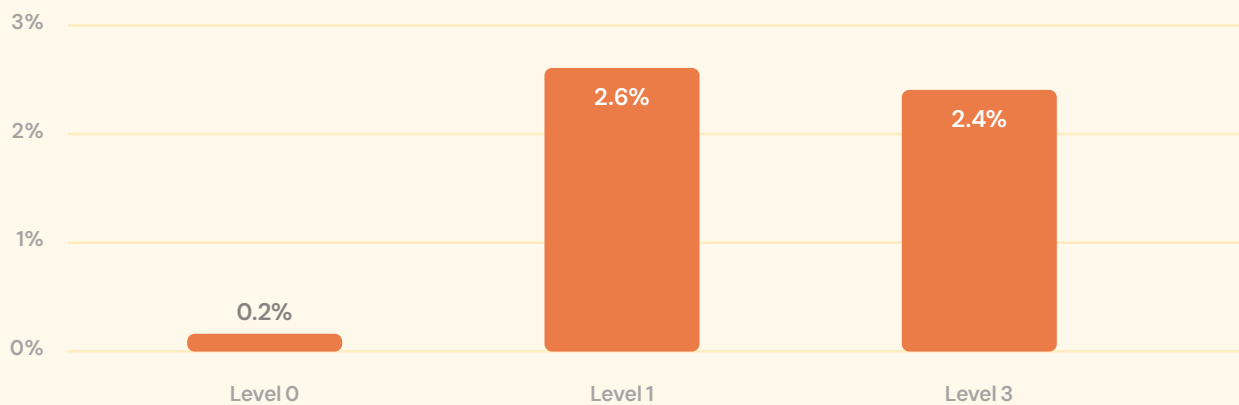


Figure 4: Per Learner Talk Time with reference to Total Class Run Time

We measured the total talk time during each class. As expected, talk time jumped considerably from Level 0 (lecture) to Level 1 (table discussion). (See **Figure 2**) Since Level 3 had four more learners, we also measured per learner talk time versus total class time. (See **Figure 3**)

Level 3 exhibited more overall verbal engagement, but this engagement came from a smaller percentage of learners compared to Level 1. The class at Level 1 showed slightly higher per learner talk time, (See **Figure 4**) possibly due to the number of extroverts and introverts in each class. We did not test for personality type, highlighting an important point: verbal engagement is crucial in active learning, but not the only engagement channel. Not all learners contribute verbally; class size and personality makeup can influence verbal engagement distribution from class to class.

The Level 3 class featured whiteboard activities and polls, providing more opportunities for learners to engage nonverbally. **Figure 5** illustrates how the multichannel engagement in the Level 3 class was higher than the Level 1 class.

Figure 6 presents an interesting picture of how the engagement played out during the course. You can see how the poll launched before the first table exercise drove engagement before and after the table exercise.

Nonverbal Engagement

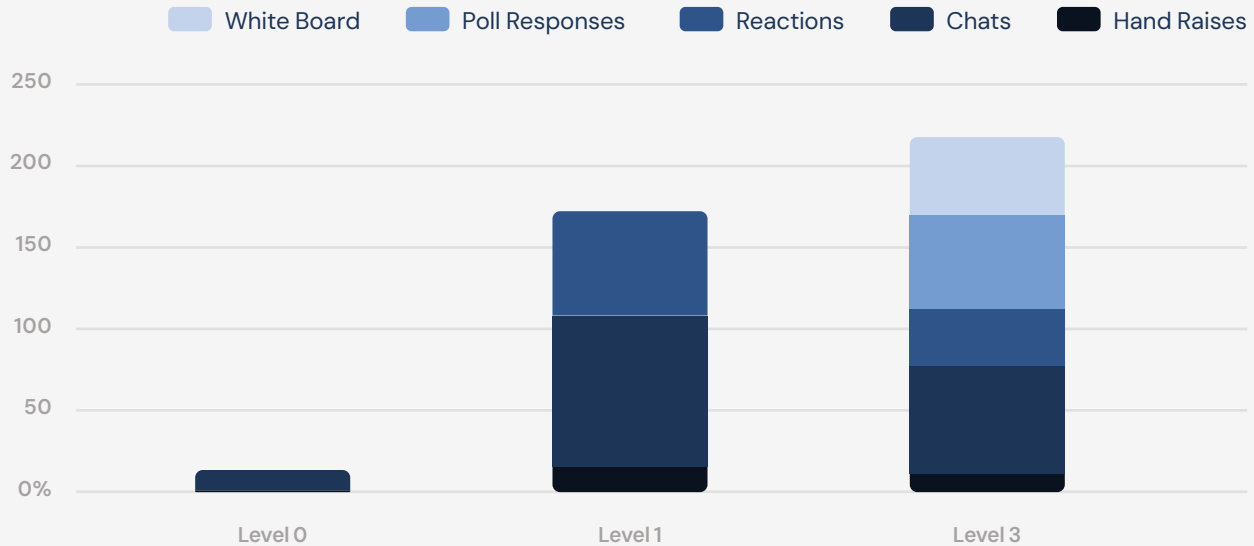


Figure 5: Nonverbal Engagement Indicators Per Class

Verbal and Nonverbal Engagement

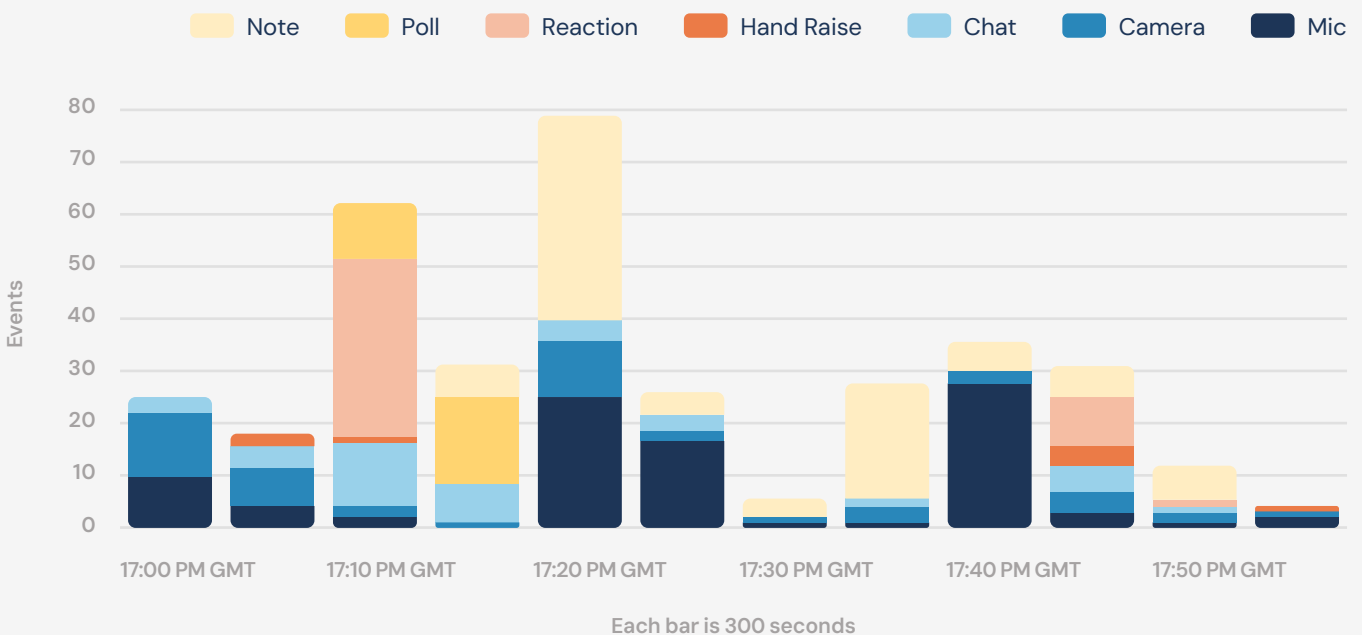


Figure 6: Level 3 Verbal and Nonverbal Engagement Timeline

To what extent did this class make you feel more prepared?

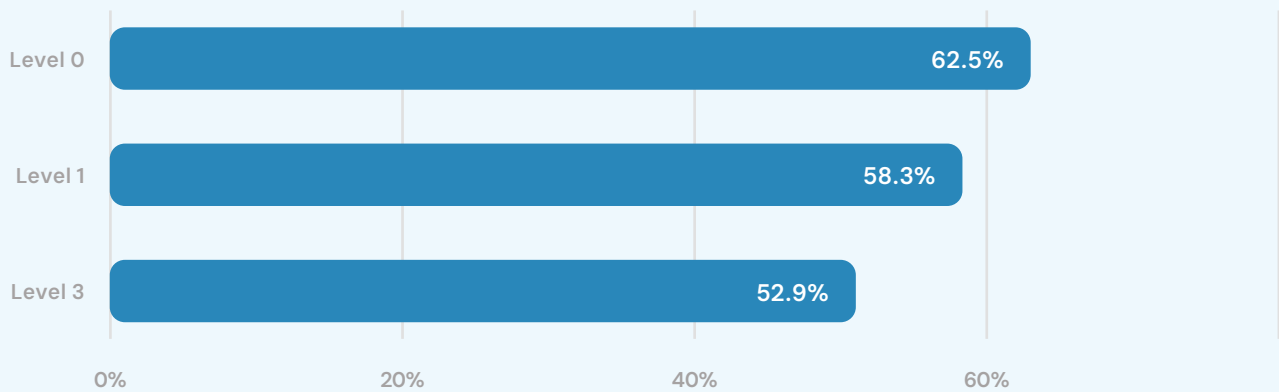


Figure 7: Post Class Perception Survey

Average Test Score 1-Week Post Class

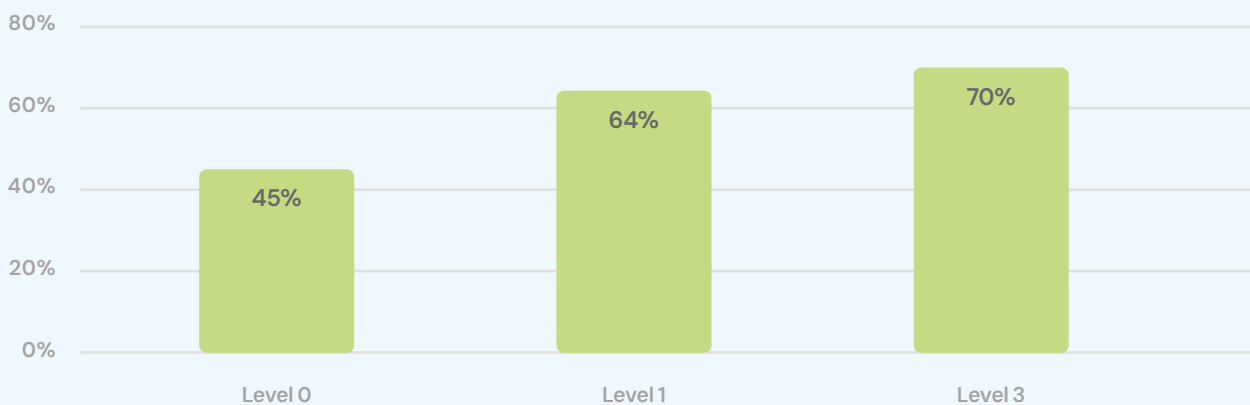


Figure 8: Post Class Quiz Results

We can conclude that the Level 1 and 3 learners were more engaged than the Level 0 learners. Each Level 1 learner was more verbally engaged while the Level 3 class had more overall verbal engagement and more nonverbal engagement.

Perception Versus Reality

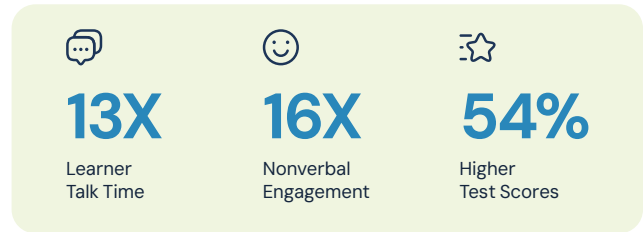
Consistent with the Harvard research, learners who attended the lecture left feeling as though they had learned more. We found that 62.5% of learners exiting the Level 0 class responded

positively to the post-class survey, versus 58.3% and 52.9% respectively. (See **Figure 7**). Our data suggests that learners' perceived knowledge retention decreased as the active learning increased.

Fortunately, perception did not match reality. Test results, one week after class, showed the average test score of Level 0 to be a failing score of 45%, versus an average score of 70% for Level 3. (See **Figure 8**)

Active Learning Impact

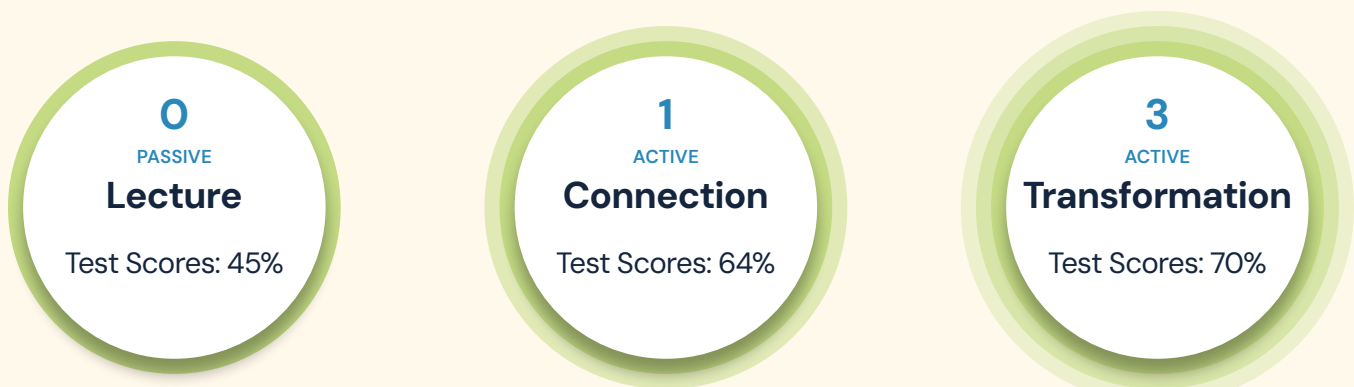
By applying active learning best practices and a little extra effort the Level 3 class solicited nearly 13X more learner talk time, 16X more nonverbal engagement resulting in test scores 54% higher than those delivered by the lecture style delivery of Level 0. (See Figure 9)



	Level 0	Level 1	L1 vs L0	Level 3	L3 vs L1	L3 vs L0
Total Talk Time	4.95%	56.8%	11.4X	62.7%	11%	12.7X
% of Talk Time per Student	0.2%	2.6%	11.46X	2.4%	-7%	10.7X
Nonverbal Engagement Incidents	14	172	12.29X	219	27%	15.6X
Test Scores	45.3%	63.5%	+40%	70.0%	+10%	+54%

Figure 9: Engagement Summary

Active Learning increases engagement, resulting in higher test scores.



Conclusion



Engageli's research demonstrates that active learning, applied online, significantly enhances engagement and learning outcomes.

Our methodology, involving different levels of active learning engagement, showed that increased participation through verbal and non-verbal interactions led to better knowledge retention and higher test scores.

This highlights the importance of structured, scaffolded approaches to implementing active learning in virtual environments to achieve superior educational outcomes.

About Engageli

Engageli is a pioneering educational technology company committed to transforming online learning through active engagement and interactive virtual classrooms.

Founded by education and technology visionaries, including Daphne Koller, co-founder of Coursera, and Dan Avida, a seasoned technology entrepreneur, Engageli utilizes innovative tools and methodologies to enhance learner participation, collaboration, and connectivity. The platform integrates interactive polls, quizzes, and collaborative projects into asynchronous classes, coupled with a unique live environment that replicates the dynamics of a traditional classroom, all designed to foster deeper understanding and retention.

Engageli also incorporates advanced AI capabilities to personalize learning experiences, providing tailored content and feedback to meet the unique needs of each learner.

By prioritizing active learning principles, Engageli aims to offer educators and learners a superior, more engaging educational experience that rivals traditional in-person instruction.

Schedule a demo to see how Engageli can boost your learning environment.



▶ engageli.com

in [@engageli](https://www.linkedin.com/company/engageli)

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