

INSTRUCTORS AND
STUDENTS:
TECHNOLOGY USE,
ENGAGEMENT AND
LEARNING OUTCOMES

[2010]

Cengage Learning and Eduventures

Methodology

In late 2010, Cengage Learning, in conjunction with Eduventures, conducted a survey to explore both higher education instructor and student perspectives on educational technology and its impact on student engagement and learning outcomes.

The survey was administered to 751 students and 201 instructors across the United States. This is the second Cengage Learning/Eduventures survey designed to uncover how educational technology impacts overall student engagement and learning outcomes.

Irrespective of which data set (instructors or students) was under examination, responses were broken down to find potential cause-effect relationships between the variables. For each group one of three sets of output was produced, depending on the question: (a) frequency table, (b) a cross-tabulation of two questions (variables), and (c) a cross-tabulation between two questions (variables) including a chi square test (or Fisher's test) where appropriate.

- Effective IT use
- Computer access by students
- Technology preference
- Engagement
- Technology impact on student engagement
- Student engagement improvement
- Barriers to learning and engagement
- Improving learning and engagement

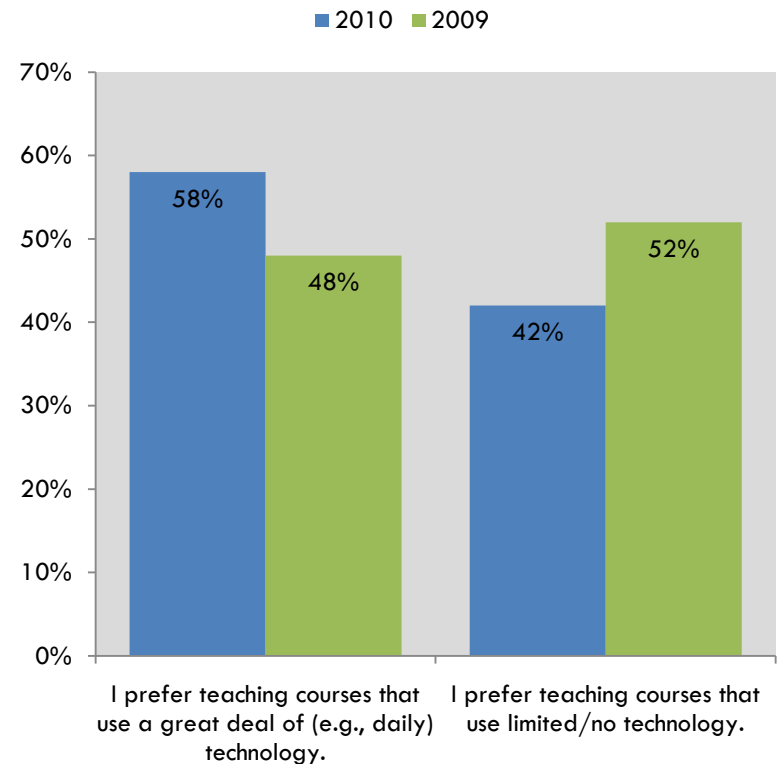
INSTRUCTORS

Technology Preference

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- Instructors' preference regarding the use of technology in courses changed significantly within the last year.
- The proportion of instructors that say they prefer teaching courses that use a great deal of technology increased from 48% in 2009 to 58% in 2010.
- The proportion of instructors that say they prefer teaching courses that use limited/no technology decreased from 52% in 2009 to 42% in 2010.

- Which statement best describes your preference regarding the use of technology in courses?



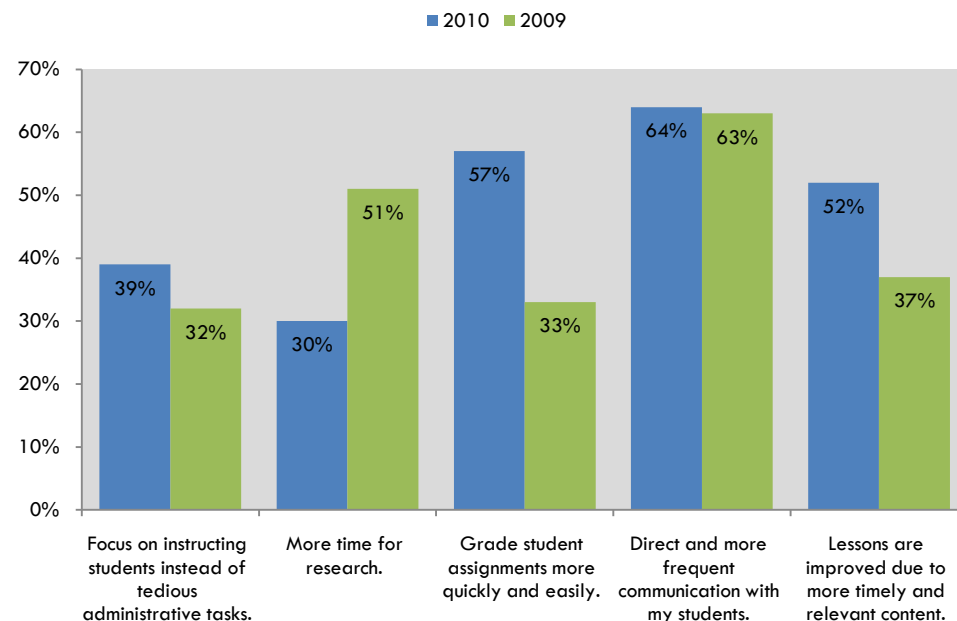
Technology Preference

and benefits as a result of using it in courses

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- In the last year, technology preferences have been affected by a shift in perceived benefits of using technology in courses.
- In 2009, only 33% of instructors reported that using technology to grade assignments was a major benefit. In 2010, 57% of instructors think that using technology to grade assignments is a major benefit.
- Similarly, in 2009, only 37% of instructors reported that a major benefit of using technology was an improvement in timeliness and relevance of lecture while in 2010 that proportion increased to 52%.
- Focusing on instructing students instead of undertaking tedious administrative tasks was reported as a major benefit as a result of using technology in courses, and increased from 32% of instructors in 2009 to 39% in 2010.

- Please indicate the degree to which you experience each of the following benefits as a result of using technology in your courses?



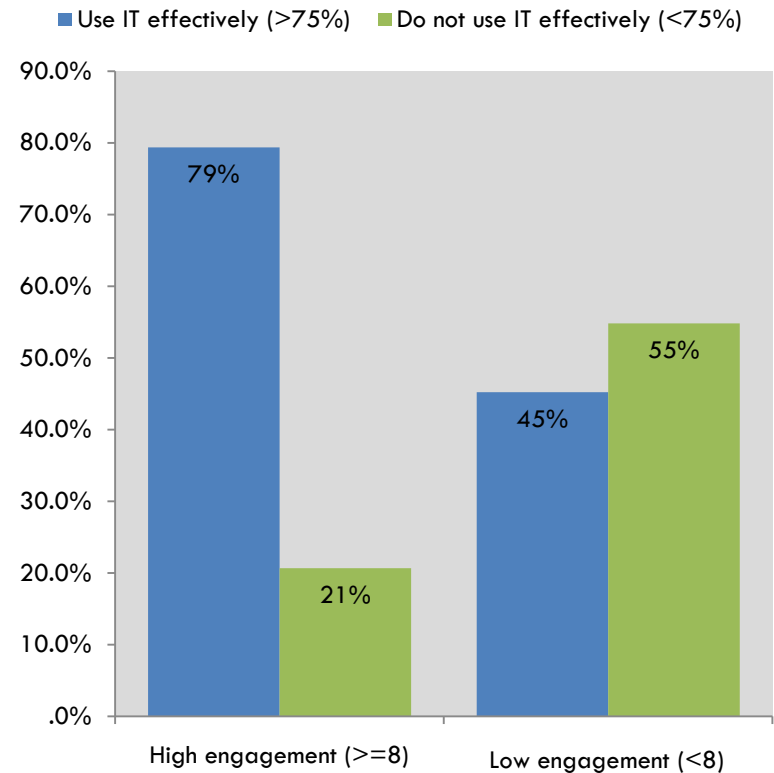
Engagement

and effective IT use

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- 79% of instructors that rate student engagement levels as “high” report that 75% of their students use IT effectively.
- 55% of instructors that rate student engagement levels as “low” report that 75% of their students do not use IT effectively.

□ Student engagement and effective IT use



*Significant at 0.01 level

Engagement

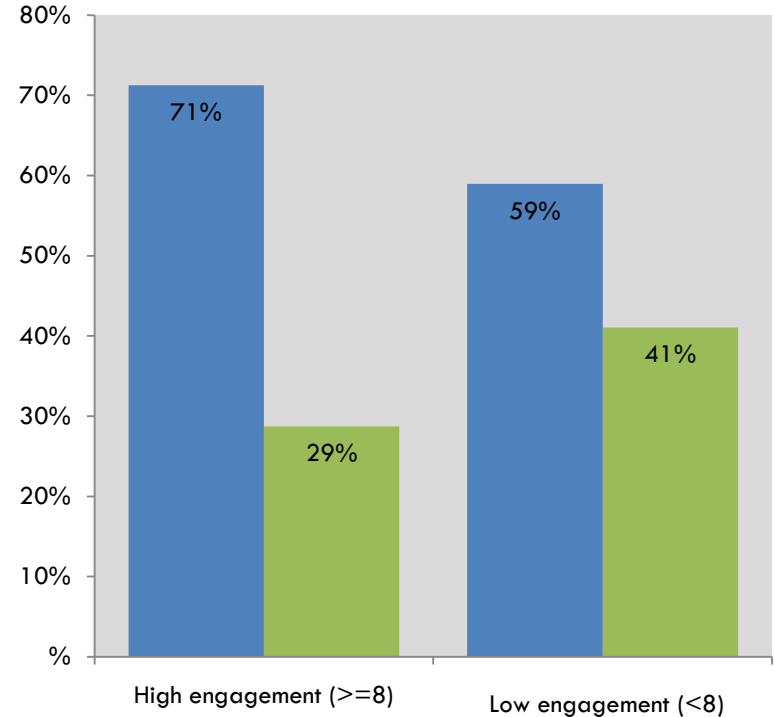
and the degree to which student learning outcomes benefitted from using technology in courses

7

- 71% of instructors that rate student engagement levels as “high” report that they have seen a high benefit to learning outcomes as a result of using technology in courses.
- This is significantly higher than the 59% of instructors that rate student engagement as “low.”
- 41% of instructors that rate student engagement levels as “low” report that they have seen a low benefit to learning outcomes as a result of using technology in courses.

- Engagement and benefit to learning outcomes from using technology in courses

■ High learning outcomes benefit ■ Low learning outcomes benefit



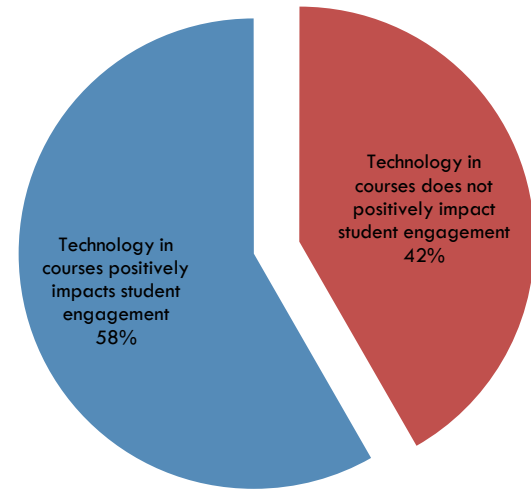
*Significant at 0.1 level

Technology impact on student engagement

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- A majority (58%) of instructors believe that technology in courses positively impacts student engagement.
- 42% of instructors believe that technology in courses does not positively impact student engagement.
- This has a direct relationship with learning outcomes.

- Technology in courses positively impacts student engagement



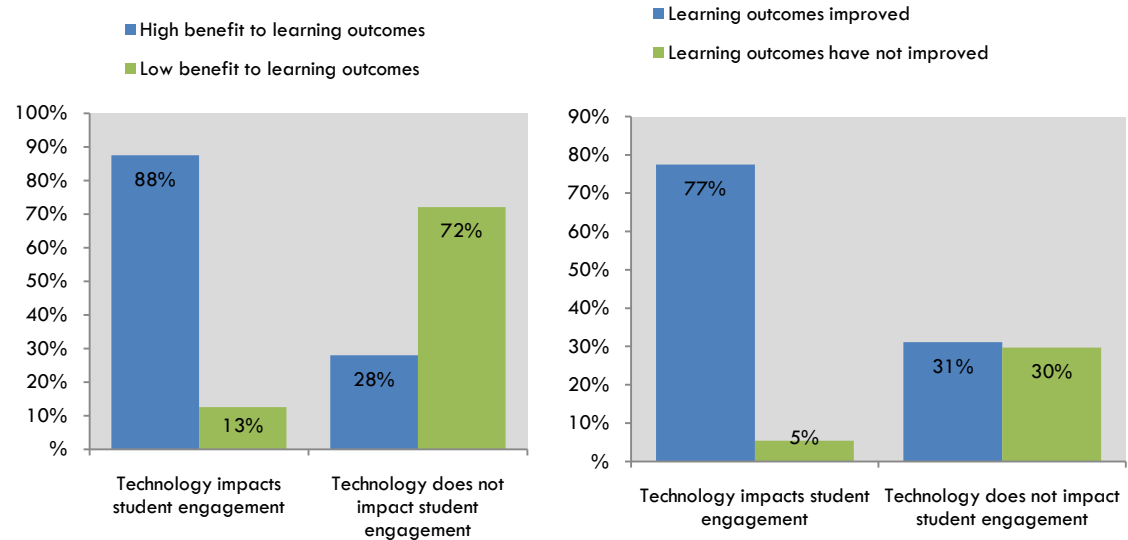
Technology impact on student engagement

and learning outcomes

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- 88% of instructors that believe technology positively impacts student engagement, also report that technology has a high benefit to learning outcomes.
- 77% of instructors that believe technology positively impacts student engagement also report that learning outcomes have improved in the last year.

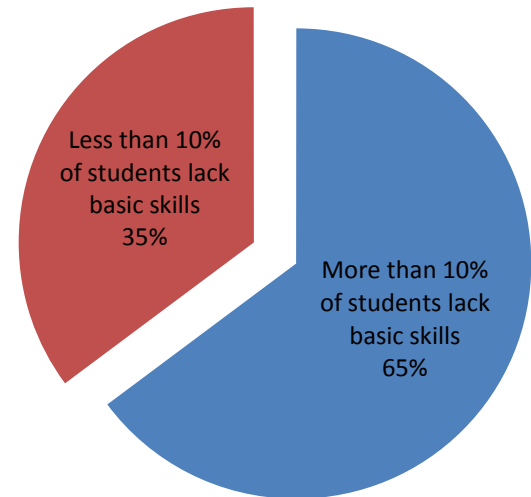
□ Technology impact on student engagement and learning outcomes



Barriers to learning and engagement

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- 65% of instructors believe that more than 10% of students enter the classroom without basic skills in reading, writing, math, etc.
 - 35% of instructors believe that less than 10% of students enter the classroom without basic skills.
- Approximately what percentage of your students enter your classroom without basic academic skills in reading, writing, math, etc.?



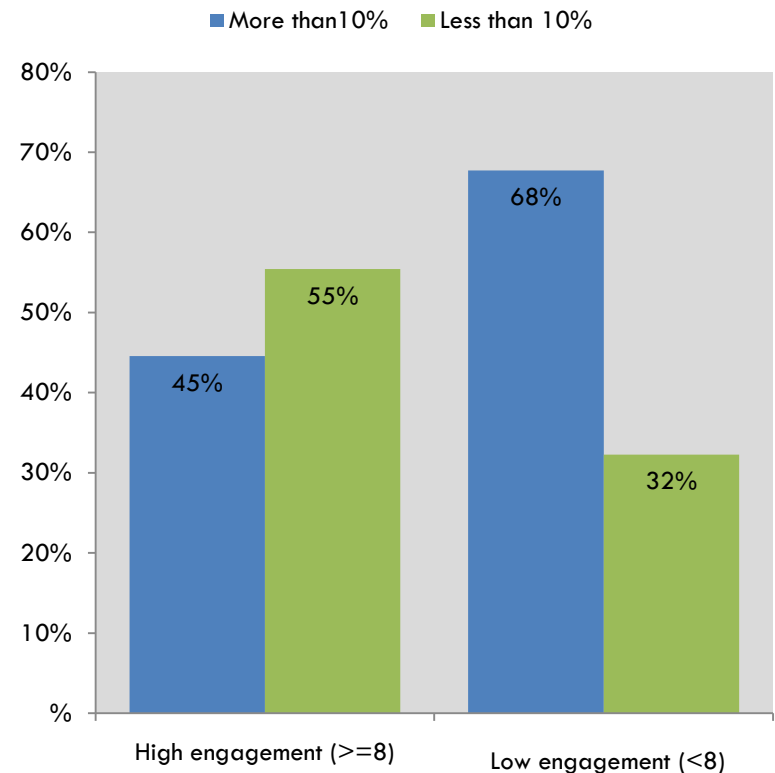
Barriers to learning and engagement

and level of student engagement

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- 68% of instructors that believe student engagement levels are low also report that more than 10% of their students enter the classroom without basic academic skills in reading, writing, math, etc.
- 55% of instructors that believe student engagement levels are high also report that less than 10% of their students enter the classroom without basic academic skills.
- Therefore, engagement is significantly correlated with basic skills of the students.

- Student engagement and percent of students without basic skills



*Significant at 0.01 level

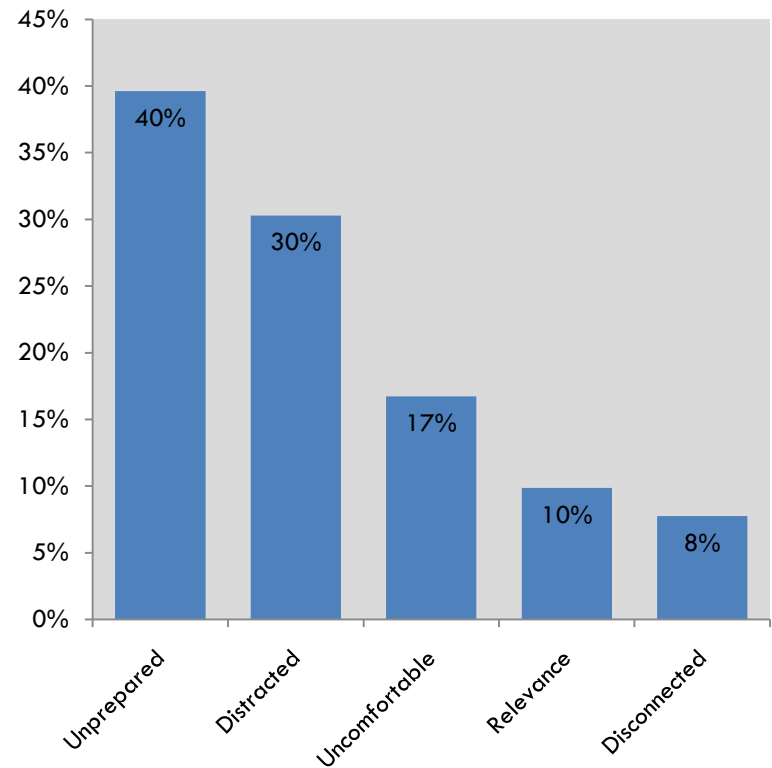
Barriers to learning and engagement

and factors that inhibit student academic engagement

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- 40% of instructors agree/strongly agree that students being unprepared for the day's lesson is an inhibiting factor for student engagement.
- 30% of instructors agree/strongly agree that students are distracted by personal issues, like caring for family members or by financial issues, like paying for school or debt, which are inhibiting factors for student engagement.
- 17% of instructors agree/strongly agree that the physical/virtual classroom environment is not conducive to learning and therefore students feel uncomfortable.

- In your experience as an instructor, please rate the factors that inhibit student academic engagement



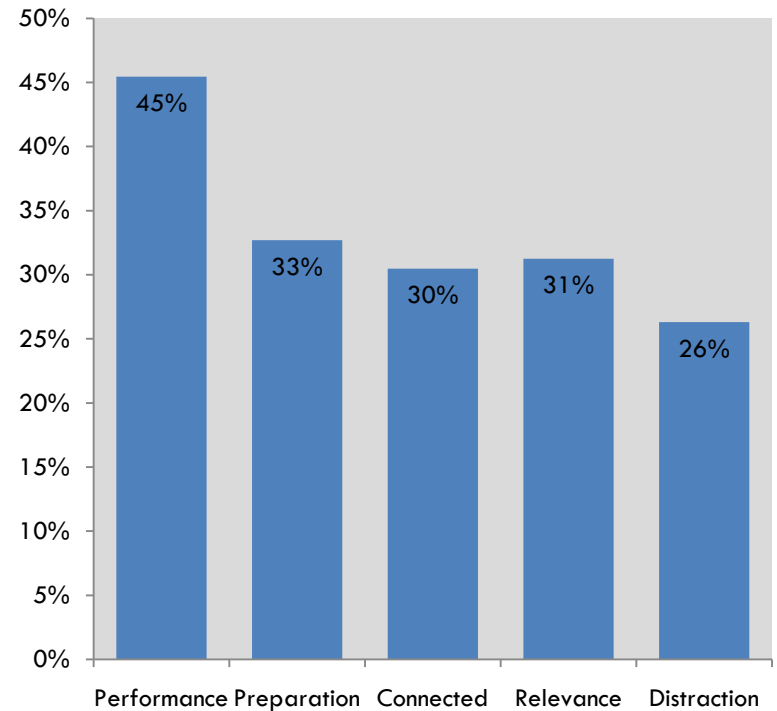
Improving engagement and learning outcomes

and the degree to which technologies help students with certain attributes

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- 45% of instructors agree/strongly agree that technologies have helped students that cannot perform well in the classroom environment.
- 33% of instructors agree/strongly agree that technologies have helped students that habitually come to class unprepared.
- Only 26% of instructors agree/strongly agree that technologies have helped students that are distracted by personal issues, like caring for family members or by financial issues, like paying for school or debt.
- **However, distraction was identified as the second highest inhibitor to engagement and learning outcomes.**

- Please rate the degree to which technologies in courses helped students who have the following attributes and characteristics



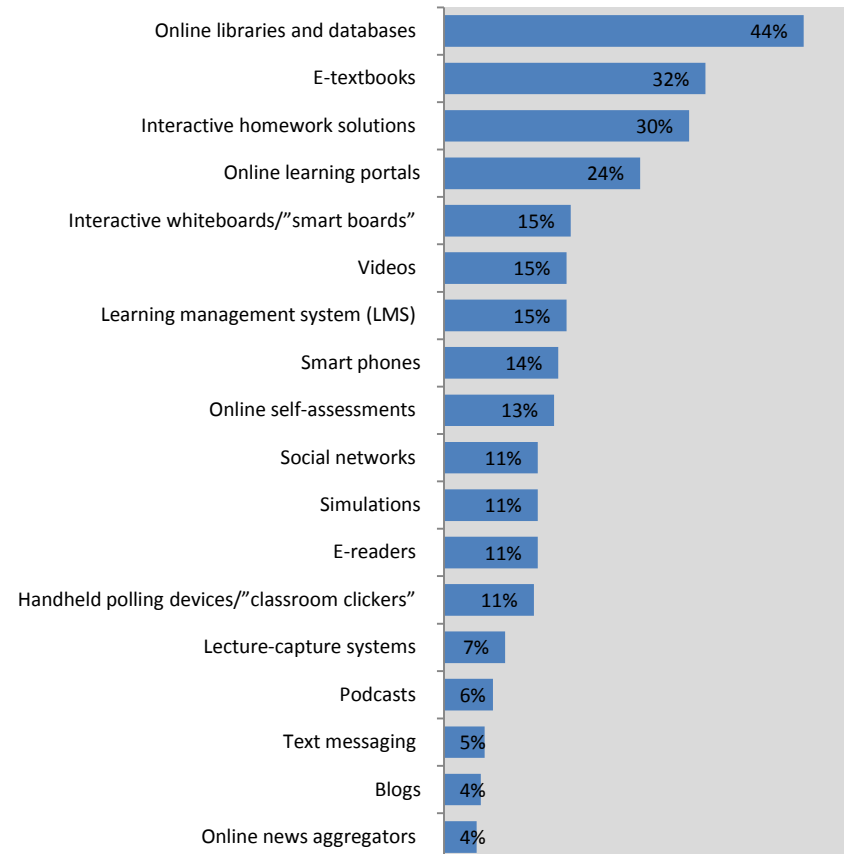
Improving engagement and learning outcomes

and technologies that will have the greatest impact

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- 44% of instructors believe that online libraries and databases will have the greatest impact on student engagement.
- 32% identify e-textbooks and 30% identify interactive homework solutions as having the potential to improve engagement and learning outcomes.
- 15% identify interactive whiteboard and learning management systems (LMS) as having the potential to improve engagement and learning outcomes.

- Which of the following technologies will have the greatest impact on student engagement?



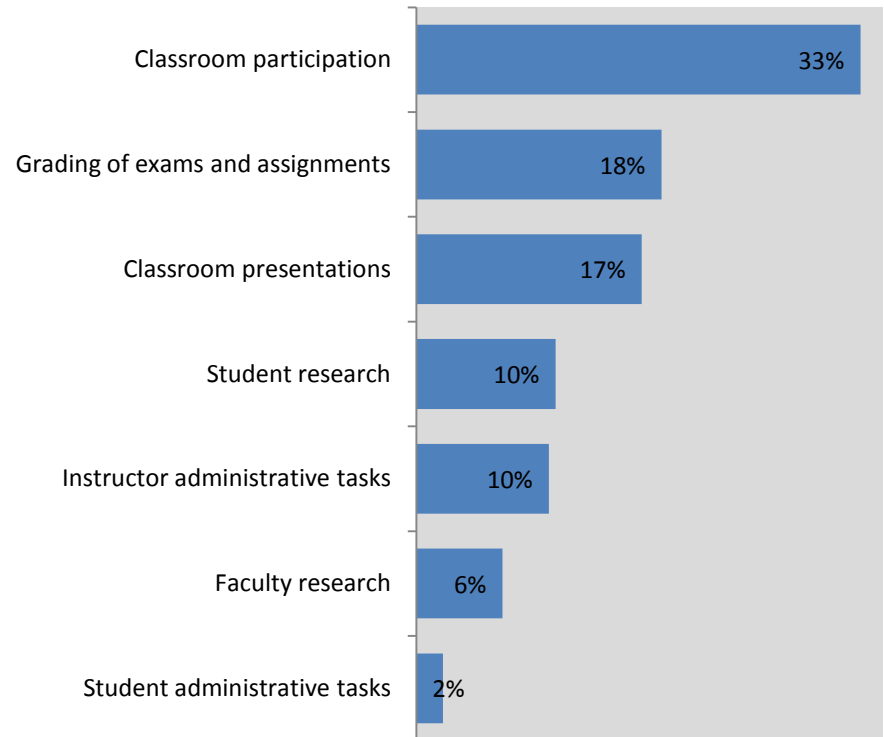
Improving engagement and learning outcomes

and technology support

15

- 33% of instructors identify classroom participation as the single instructional task they wish technology could support.
- 18% and 17% of instructors identify grading and presentations as instructional tasks they wish technology could support, respectively.
- Only 2% identify student administrative tasks as the single instructional task they wish technology could support.

- Which single instructional task do you wish technology could better support?



- Technology preference
- Engagement and learning outcomes
- Grades
- Instructors' technology use
- Impediments to learning
- Employment and housing

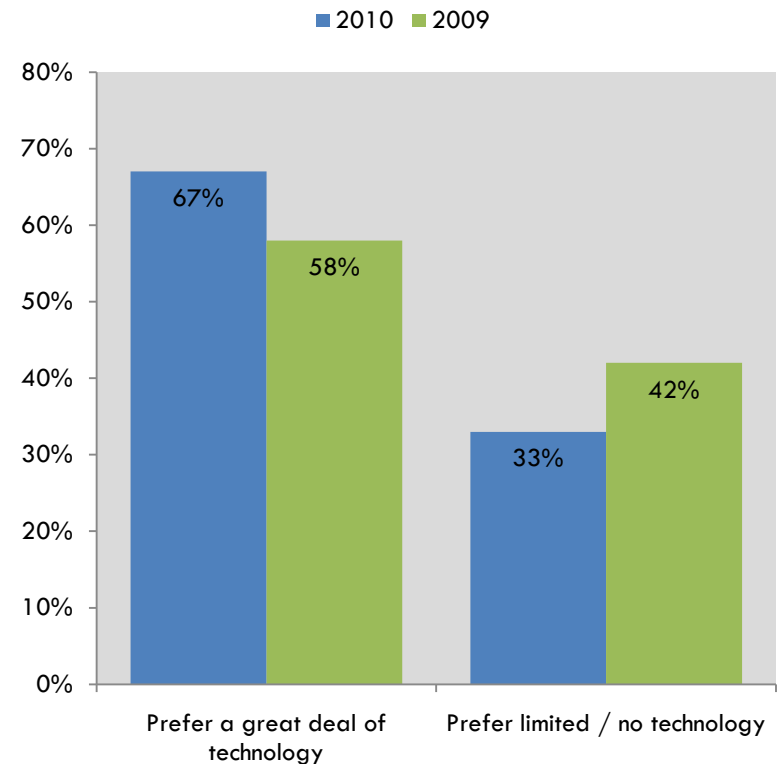
STUDENTS

Technology preference

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- In 2009, 58% of students preferred courses that use a great deal of technology while 42% preferred to take courses that use limited/no technology.
- In 2010, there are more students that prefer to have technology in the classroom. In fact, 67% say they preferred courses that use a great deal of technology while 33% preferred to take courses that use limited/no technology.

- Preference regarding the use of technology in courses

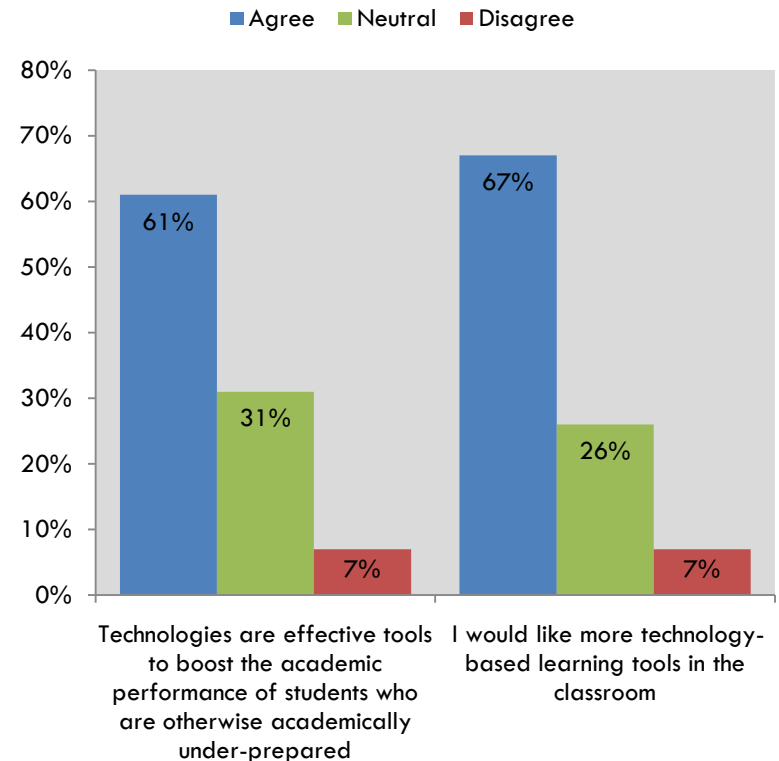


Technology preference

and its effectiveness in boosting learning and engagement

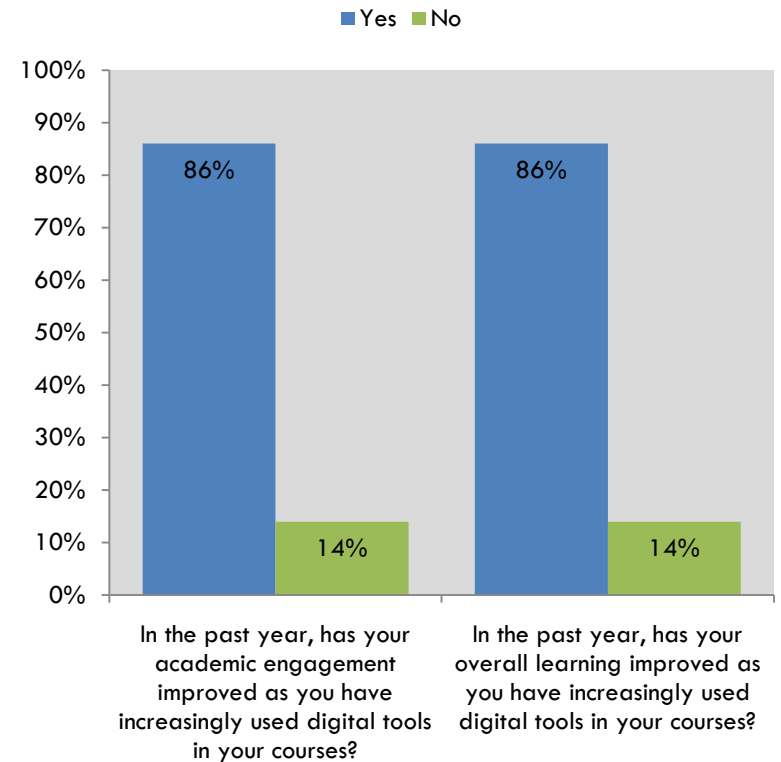
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- 61% of students agree that technologies are effective tools to boost the academic performance of students who are otherwise academically under-prepared.
- 67% of students would like more technology-based learning tools in the classroom.



Student Engagement

- 86% of students report that their academic engagement has improved as they have increasingly used digital tools in their coursework.
- The same proportion of students report that their overall learning has improved as they have increasingly used digital tools in their coursework.



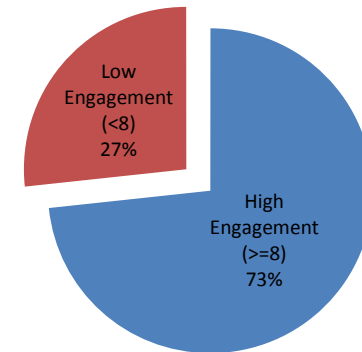
Student Engagement

according to students and instructors

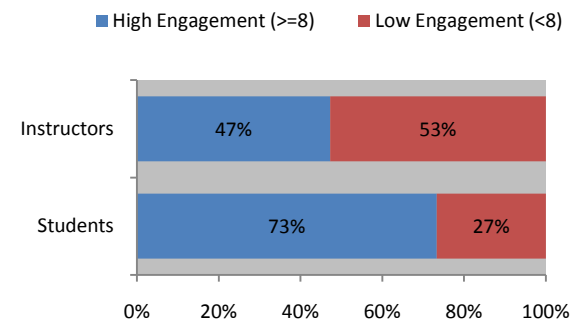
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- 73% of students rate their current level of engagement in their courses as “high”.
- 27% of students rate their current level of engagement in their courses as “low”.
- Student engagement estimates are significantly higher than those of instructors.
- 73% of students rate their current level of engagement in their courses as “high” compared to 47% of instructors.
- 27% of students rate their current level of engagement in their courses as “low” compared to 53% of instructors.

- On a scale of 1-10, please rate your current level of engagement in your courses



- Comparing students' and instructors' engagement rating

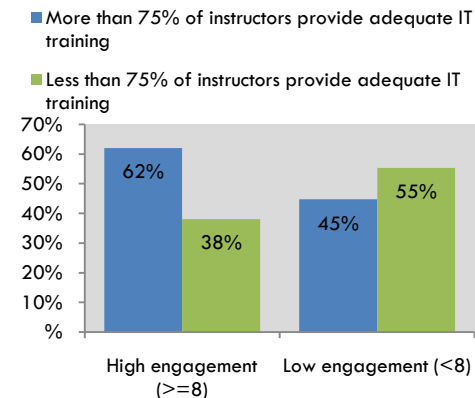
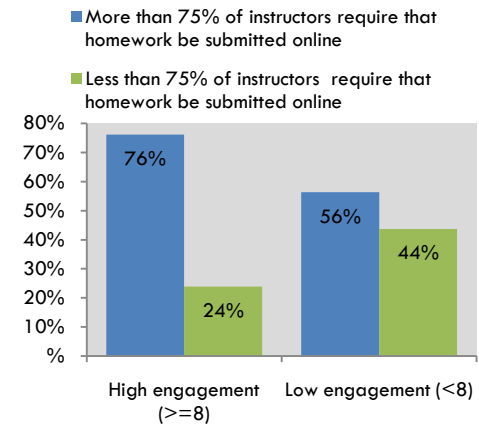
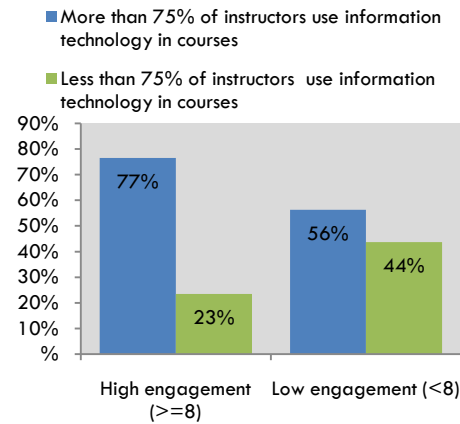


Student Engagement

and instructor IT use

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- 77% of students that rate their current level of engagement in their courses as “high” also believe that 75% of their instructors use IT in courses.
- 76% of students that rate their current level of engagement in their courses as “high” also note that 75% of their instructors require that homework be submitted online.
- 62% of students that rate their current level of engagement in their courses as “high” also note that 75% of their instructors provide adequate IT training.



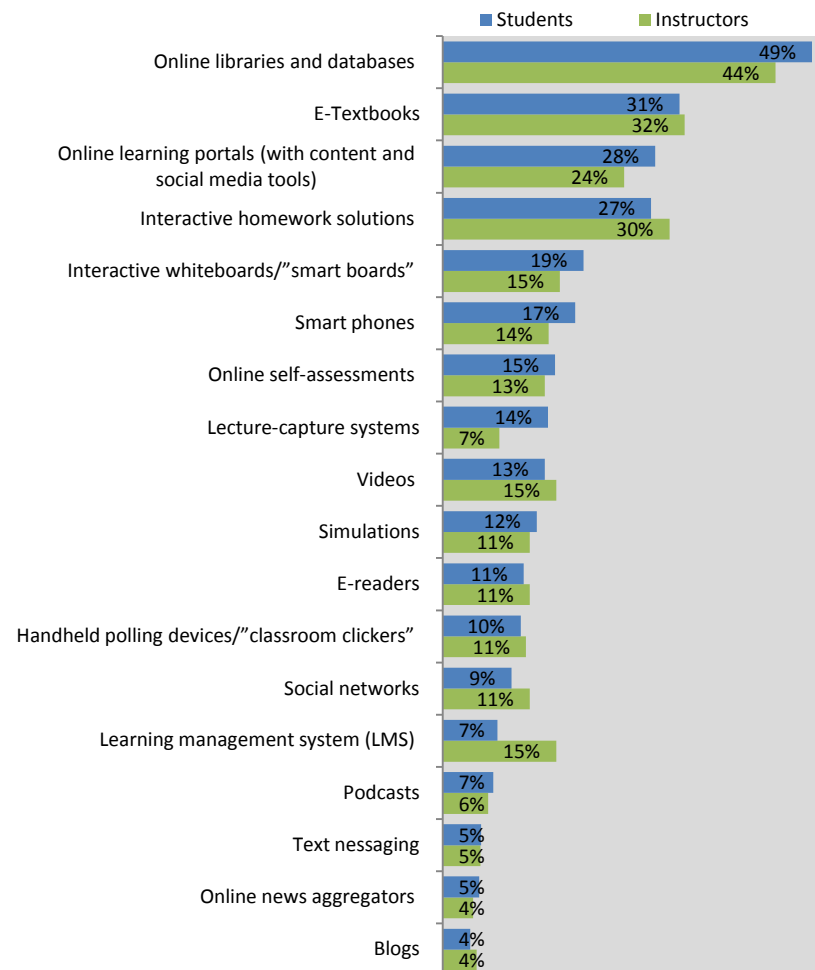
Student Engagement

and technologies that impact it

22

- 49% of students (44% of instructors) believe that online libraries and databases will have the greatest impact on student engagement.
- 31% identify e-textbooks and 27% identify interactive homework solutions as having the potential to improve engagement and learning outcomes.
- Students are more optimistic about online learning portals with 28% (24% among instructors) saying it has the potential to improve engagement.
- Students are also more optimistic with regards to interactive whiteboards (19%), smart phones (17%) and online self-assessment (15%).
- They are significantly less optimistic about learning management systems – 7% versus 15% among instructors.

□ Which of the following technologies will have the greatest impact on engagement?



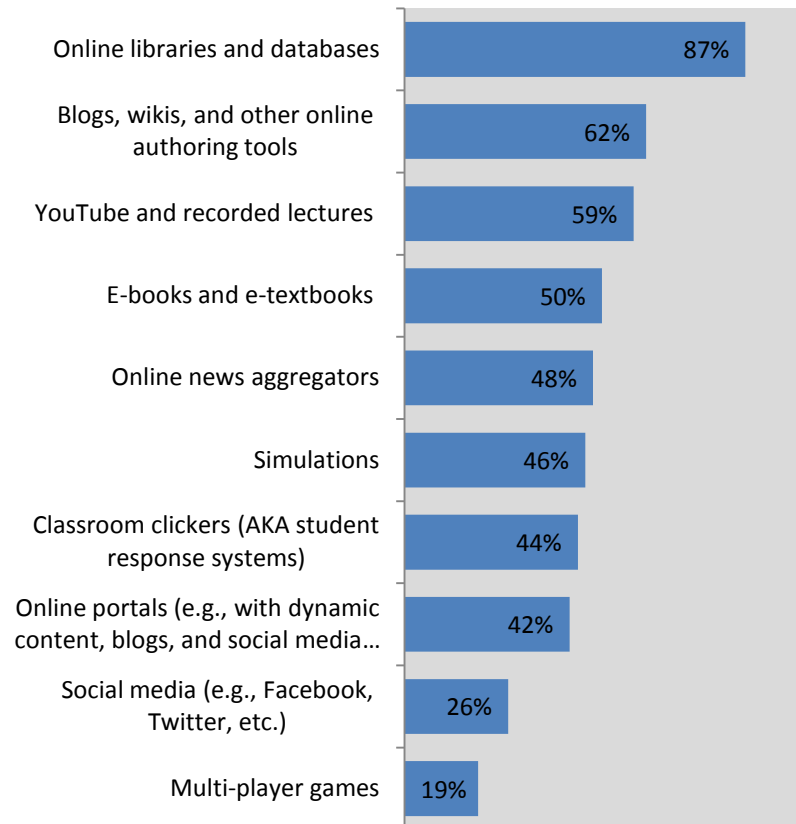
Student engagement

and technologies that impact overall learning

23

- 87% of students believe online libraries and databases have had the most significant impact on their overall learning.
- 62% identify blogs, wikis, and other online authoring tools while 59% identify YouTube and recorded lectures.
- E-books and e-textbooks impact overall learning among 50% of students surveyed, while 42% of students identify online portals.

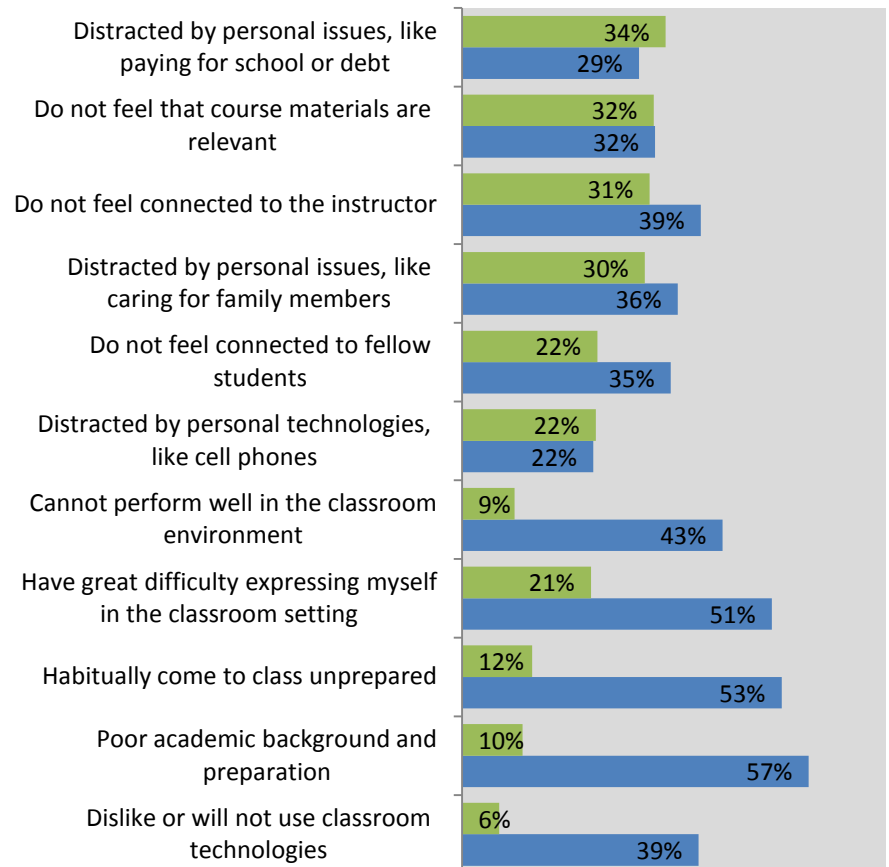
- What type of impact have the following technologies had on your overall learning?



Impediments to Learning

- Major impediments to learning like being distracted by personal issues or feeling that course materials are relevant haven't been helped by technology.
- Technology seems to help alleviate impediments that are impacting a small proportion of students – like preparation for class, and dislike for technologies.
- In fact, being distracted by personal issues, feeling that course materials are irrelevant, and not feeling connected to the instructor are identified as major impediments by more than 30% of students.
- For only about a third of students surveyed technology has helped overcome such challenges.

■ Major impediments to your learning (% Selected)
■ Technology use helped overcome personal challenges (% Agree/Strongly Agree)



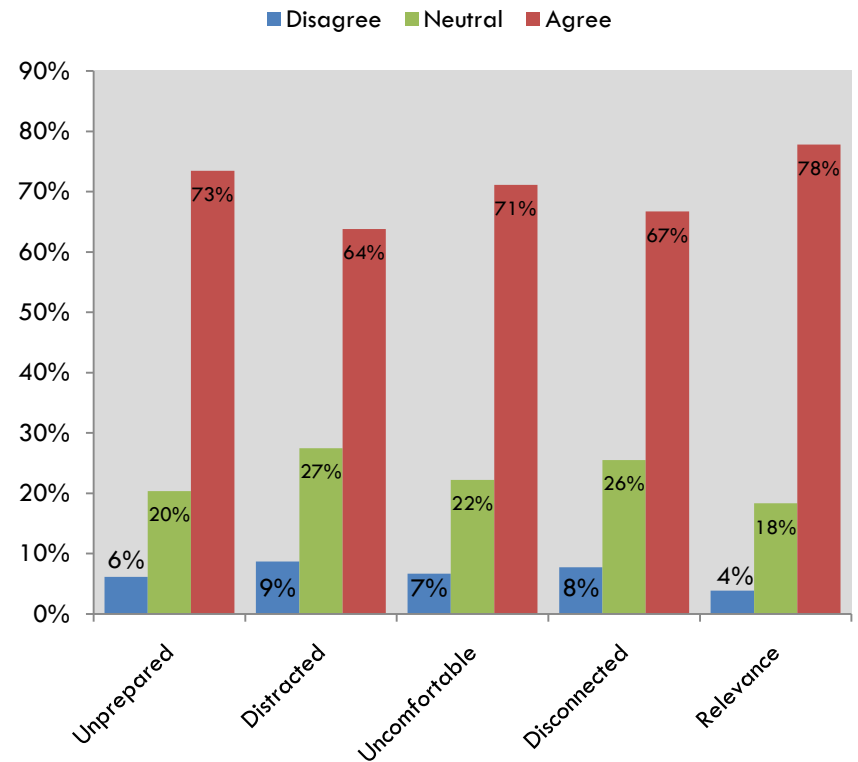
Impediments to Learning

and preference for more technology-based tools in the classroom

- More than 70% of students that are unprepared, uncomfortable, or feel course material is irrelevant agree that they would like to see more technology-based solutions in the classroom.
- Over 60% of students that are distracted or disconnected would also like to see more technology-based solutions in the classroom.

- Impediments to learning and preference for more technology based tools in the classroom

I would like more technology-based tools in the classroom



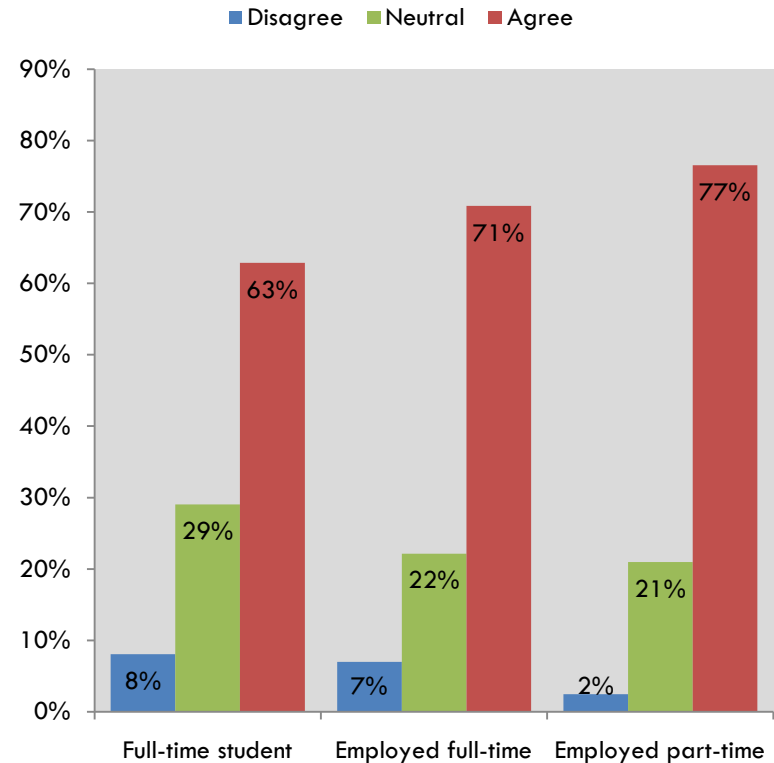
Employment Status

and preference for technology-based tools in the classroom

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- 63% of full-time students prefer more technology-based tools in the classroom, which is significantly lower than their employed counterparts.
- 71% of full-time employed students prefer more technology based tools in the classroom while 77% of part-time employed students prefer technology as well. Only 2% of the latter group do not want more technology in the classroom.
- Employment, a distraction and impediment to learning and engagement, can therefore be alleviated via technology solutions, as reported by students.

- I would like more technology-based tools in the classroom



*Significant at 0.10 level

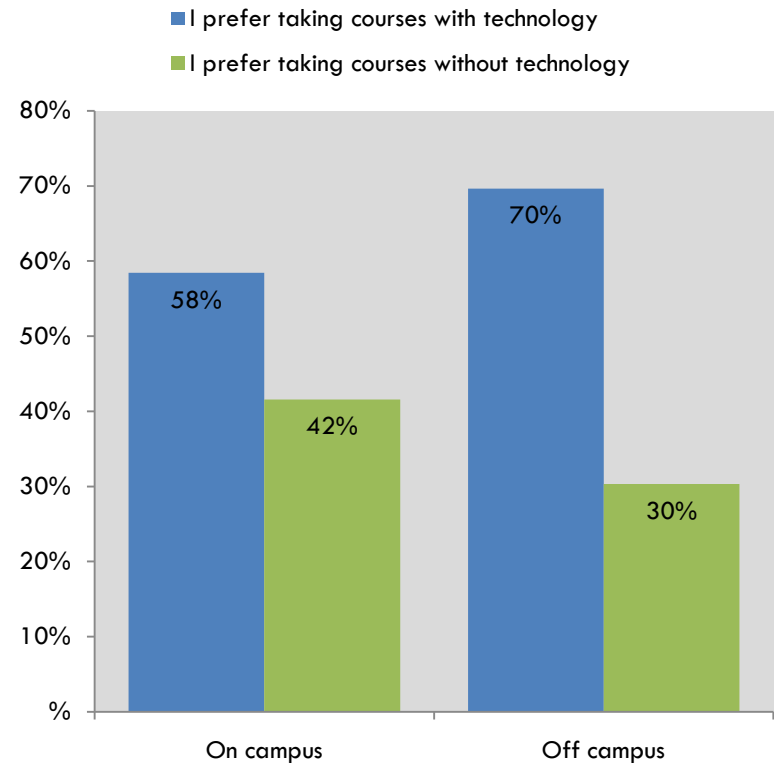
Housing

and preference for technology in the classroom

27

- 70% of students that live off campus prefer taking courses with technology while 58% of those living on campus prefer the same.
- Only 30% of students living off campus prefer courses with limited technology.

- Housing and preference for technology in the classroom



*Significant at 0.01 level