iPad affordances in a dental anatomy course

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Background

Digital technologies, such as iPads, offer new possibilities for enhancing instructional practices. They can also increase organization and productivity with faculty and learners. In 2019 OHSU launched an iPad initiative with these aims in mind. The School of Dentistry was the first, and so far, only school at OHSU to adopt iPads for teaching and learning. This began in Summer term 2019 and has now been in operation for nearly two years.

Methods

In a first-year dental anatomy course (Rest 701), iPads and specific applications were utilized in order to improve productivity and enhance pedagogy. To collect data and report on findings, the following were used:
- Student perception surveys
- Instructor observations
- App alignment with 8A model

Results

Student perceptions: Students largely prefer using iPad over paper and pencil and over other computing tools. Students also report liking that they have access to all their learning materials and tools in one device.

Instructor perceptions: The instructor reported that iPad integration into REST 701 saved time and paper, as well as enhancing formative feedback.

Pedagogical affordances: The iPad apps utilized in the course align with affordances in the 8A model, and thus demonstrate their potential to enhance pedagogical practices.

References:

Cope, B. & Kalantzis, M. (Eds.). (2017). *E-learning ecologies: Principles for new learning and assessment*. Routledge.

Mochizuki, Y. & Bruillard, E. (Eds.). (2019). *Rethinking pedagogy: Exploring the potential of digital technology in achieving quality education*. Mahatma Gandhi Institute of Education for Peace and Sustainable Development.

1. Students prefer iPads to traditional tools.
2. iPads save time and paper.
3. iPads can enhance pedagogical practices.

Student Perceptions

Student preference for iPads over pen and paper:

Pie chart:
- Strongly Agree 68%
- Agree 11%
- Neutral 8%
- Disagree 5%
- Strongly Disagree 8%

N=37
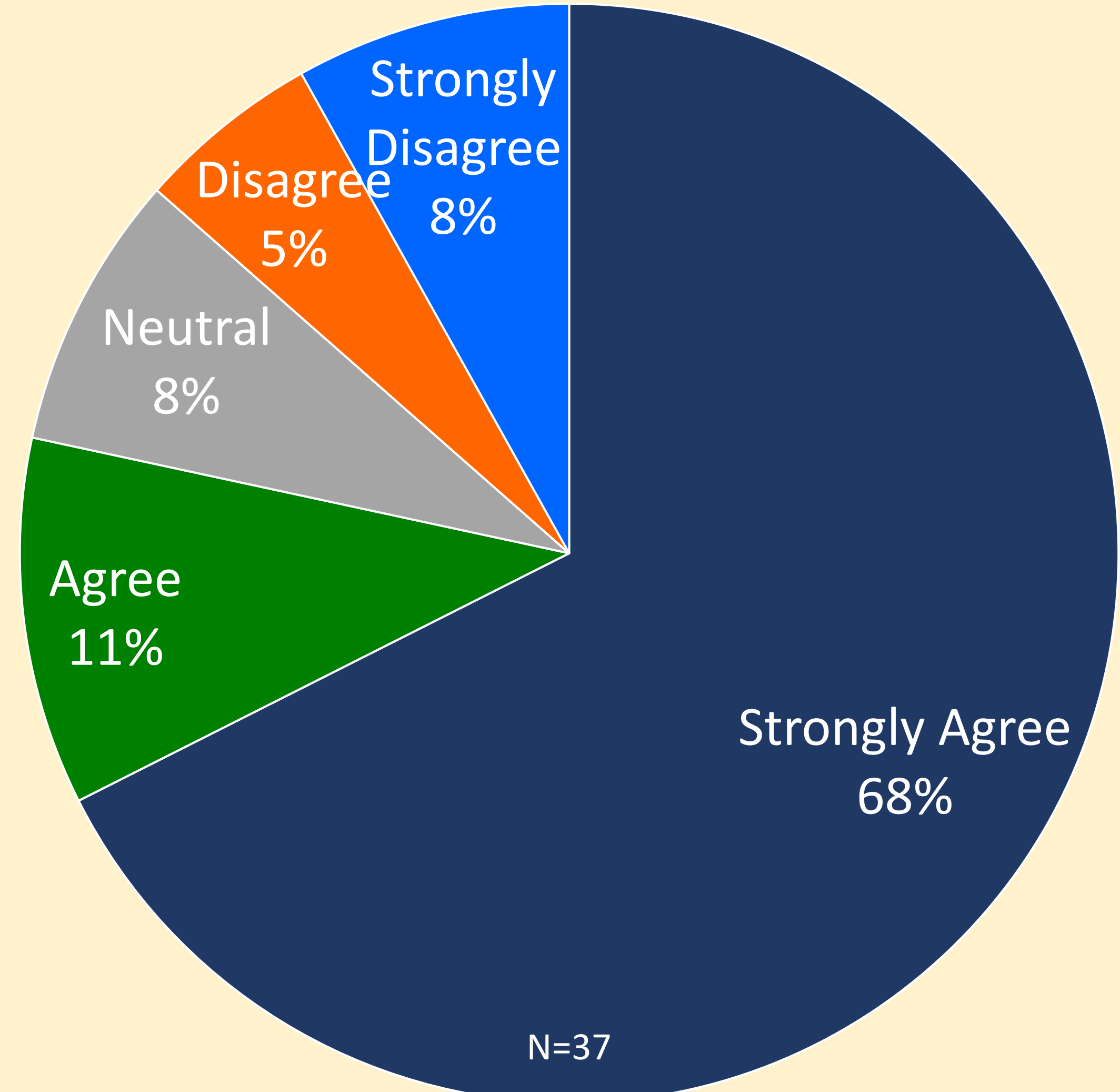
Student quotes:

"I like how all of our apps and projects are integrated on the iPad so we only need one device for everything." (2019)
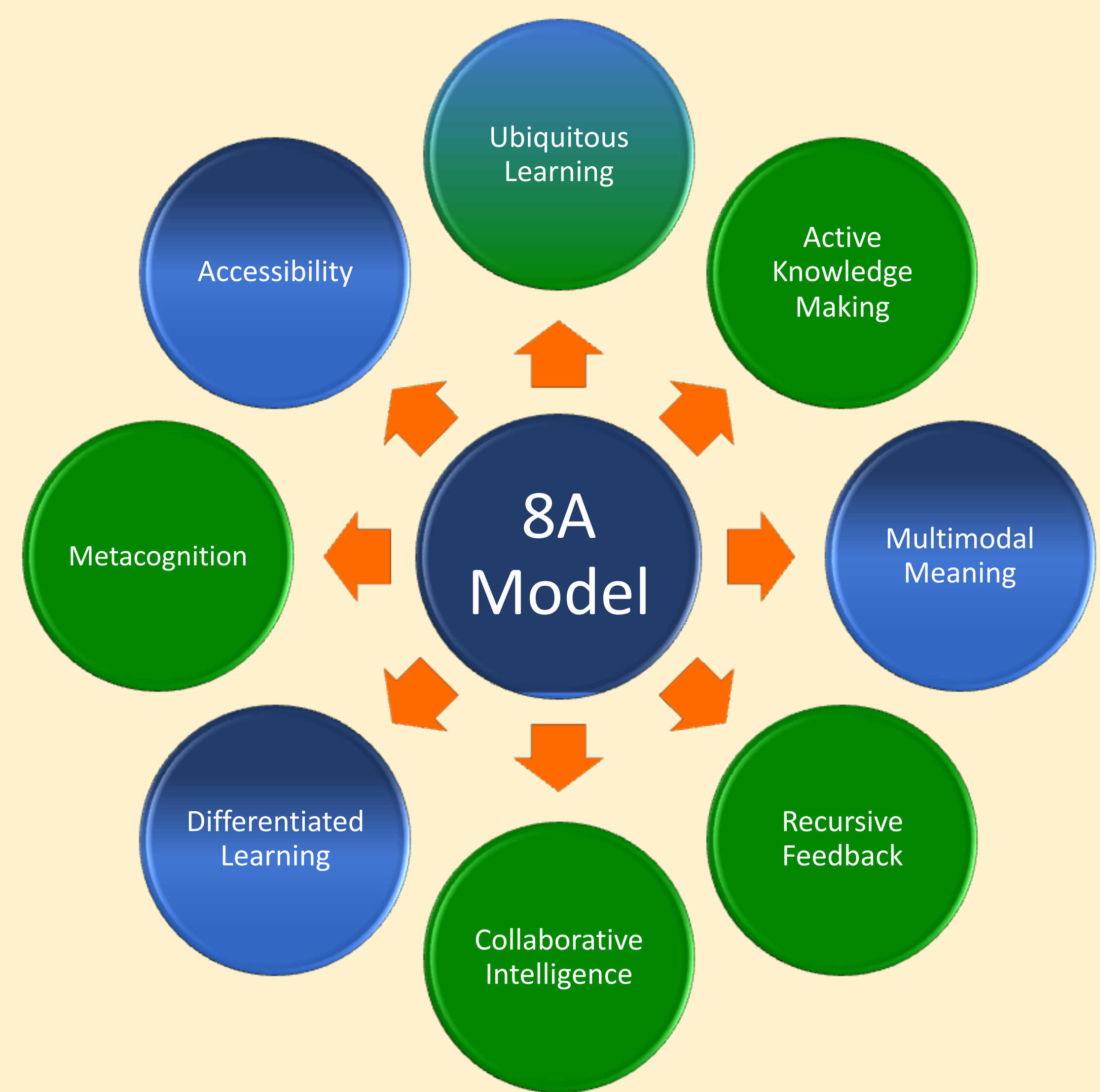
"I really like having everything on one device. It makes me stay organized and happy." (2021)

"I like that when we go to campus all we need to bring is a small lightweight iPad." (2021)

Instructor Observations

Description	Result
Change lab manual to digital on iPad	• Saved over 2000 pieces of paper • Eliminated printing costs
Digital vs. Paper Assignments	• Instant time & date stamp • Flags if assignment is late • Eliminated cost of entering scores • Tracking of students who previously could be behind and "under the radar"
Use of iPad camera	• Can give visual feedback with notations • Previous projects can be compared with improvements

Pedagogical Affordances

8A Model diagram:
- Ubiquitous Learning
- Active Knowledge Making
- Multimodal Meaning
- Recursive Feedback
- Collaborative Intelligence
- Differentiated Learning
- Metacognition
- Accessibility

Active Knowledge Making
- Sketchbook
- PollEverywhere
- Notability
- Tooth Atlas

Recursive Feedback
- Camera/Photos
- Notability
- ExamSoft

Collaborative Intelligence
- Explain Everything
- Pages
- Keynote

Ubiquitous Learning:
- Bookshelf

Metacognition
- PollEverywhere