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A Participatory Design Workshop on Accessible Apps and Games with Students with Learning Differences



Problem:

Students with learning differences (LD) need access to hands-on problem-solving tasks in STEM domains to help them to experience real scenarios and to choose STEM careers.

Solution:

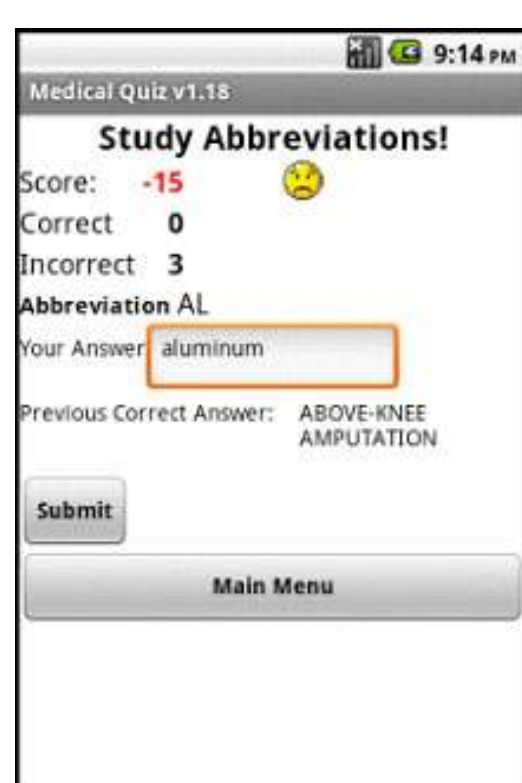
Conduct outreach workshops with LD students to engage them in computing activities, focusing on **participatory design**.

Participatory Design (PD): designers collaborate directly with intended users throughout design process; users make decisions as part of the team.

Prototype Apps / Games Used in Workshop:



Rehab Dashboard
Guides people performing rehabilitative exercises.



MedQuiz
Tests memory of vocabulary user needs to know.



Procedure Pal
Builds procedural tasks skills and memory.



Scheduler
Reminds users of tasks, appointments or dates.

Workshop Procedure:

- UMBC faculty and grad students facilitated 1-day workshop at Landmark
- Iterative participatory design sessions (2) in small teams (4 LD students and 1 or 2 facilitators) for 60-minutes each
- 12 LD students participated

Lessons Learned:

- PD engaged LD students and increased / confirmed STEM interest
- **Communication differences:** small peer groups (e.g., 3-5 students) better than large groups (e.g., 15-20 students)
- **Visual / Verbal thinking:** design approaches depends on students' ability to verbalize their ideas

Student diagram of design concepts for app.



- **Personal context:** relate apps / games to students' daily lives
- **Inclusive empowerment:** enough materials for hands-on activities by all

Lisa Anthony, Sapna Prasad‡, Amy Hurst, Ravi Kuber
UMBC Information Systems, Human-Centered Computing Group
‡Landmark College Institute for Research and Training