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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.

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

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.

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

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