Health Quest: Engaging Adolescents in Health Careers with Technology-Rich Personalized Learning

**Background**

Developing our biomedical, behavioral, and clinical research workforce is a critical national need.

- Significant workforce shortages exist or are emerging in the fields of medicine, dentistry, public health, nutrition/dietetics, and mental health
- Exacerbating this problem is the underrepresentation of women, and racial and ethnic minorities in health research and the health professions

Adolescence offers a key window to promote interest, and increase self-efficacy to pursue health science careers and health professions.

**Objectives**

Health Quest aims to promote middle grade students’ interests in health science careers by:

- Engaging students in a rich narrative-driven health sciences career adventure game where they can work with virtual scientists to solve critical scientific problems
- Allowing students to learn about the career paths of health professionals through interactive video interviews
- Providing middle school teachers with tools and resources to implement Health Quest in their classrooms
- Increasing students’ self-efficacy for pursuing health science careers

The project will culminate with a formative evaluation of Health Quest in the project’s partner schools in North Carolina and California.

**Social Cognitive Theory**

Health Quest is grounded in Social Cognitive Career Theory (SCCT) which holds that self-efficacy and outcome expectations exert a significant effect on the formation of career interests.

**Personalized Learning Technologies**

Health Quest will leverage significant advances in personalized learning technologies to create engaging interactions that enable students to explore and gain confidence in pursuing health science careers.

**Designing the Career Adventure Game**

Over the past year, the research team has been actively developing the first career adventure episode, which aims to introduce students to careers in public health. The narrative-driven storyline requires students to interact with virtual characters to solve a local outbreak mystery.

- **I. Career Adventure Game**
  - Through engaging storylines students will:
    - Be introduced to a broad range of health science careers
    - Work with virtual characters to address critical health science problems
    - Learn about how science plays a key role in promoting health

- **II. Student Discovery Center**
  - Through interactive interviews with health professionals from biomedical, behavioral and clinical science, students will:
    - Learn about career paths for health science professions
    - Learn about what motivates scientists
    - Hear about barriers to success and how individuals overcame them

- **III. Teacher Resource Center**
  - Through online professional development materials and in-class activities Health Quest will:
    - Support middle school teachers’ classroom implementations of Health Quest

**Focus Groups**

We conducted focus groups with 8th grade students to gather input on the game episode's storyline, health science content, and visual appearance. We also gathered feedback on the health professional interviews.

- **Suggested improvements:**
  - Keep game episodes concise
  - Keep dialogue short
  - Include mini-games within the episode
  - Make the scenario more consequential
  - Make videos more bite-sized
  - Include more age appropriate career explanations

**Future Development**

The feedback from focus groups is being used to refine the game design strategy and video content.

- The career adventure game will center on an infectious disease outbreak that students must solve through gathering clues, interacting with health professionals, and formulating and testing hypotheses
- Students will unlock hidden game levels where they can explore character backgrounds and complete mini games to learn more

**Video Interviews with Health Professionals**

We conducted video interviews with public health professionals. The video includes personal accounts about their careers, career path, and what motivates them about their career field.

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