Interactive Disaster Preparedness: Gaming for Children, Teachers and Parents

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American College of Emergency Physicians
ADVANCING EMERGENCY CARE
Interactive Disaster Preparedness: Gaming

- Why disaster preparedness?
- What’s so great about games?
- What is Disaster Hero?
- How is Disaster Hero being created?

All children’s artwork: www.fema.gov/kids
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**Disaster Preparedness and Apathy**

- One of the social realities to be faced in disaster planning is that the general attitude toward disaster preparedness is apathy.
- Apathy pervades governmental bodies as well as the public at large.
- **Public apathy** is due to the fact that public awareness of disaster risks is generally poor. Even in communities where disasters have occurred relatively frequently.
- The motivation for choosing where to live is dictated by economic opportunities (a better job) or aesthetic reasons (the risk of wildfire is overridden by the breathtaking view) rather than concern about natural or technological hazards (Drabek, 1986:322,358).
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- Disaster Preparedness and Apathy
  - Governmental Apathy is reflected in a lack of political support for disaster preparedness.
  - Programs have been difficult to initiate or maintain unless they have been demanded by the citizens or mandated by law and paid for by the state or federal government (Tierney, 1985b:73; Davenport, 1978:12).
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- Mass-Casualty Events at Schools: A National Preparedness Survey by Dr. Graham et al.
  
  *Journal of Pediatrics 2006*

  - The objective was to document the preparedness of public schools in the US for the prevention of and the response to a mass casualty event.
  - A survey was mailed to 3670 school superintendents of public school districts that were chosen at random from a list of school districts from the National Center for Education Statistics of the US Department of Education.
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- Mass-Casualty Events at Schools: A National Preparedness Survey by Dr. Graham et al.
  
  *Journal of Pediatrics 2006*

  - Most (86.3%) school superintendents reported having a response plan, but fewer (57.2%) have a plan for prevention.
  
  - Most (95.6%) have an evacuation plan, but almost one third (30%) had never conducted a drill. Almost one quarter (22.1%) have no disaster plan provisions for children with special health care needs, and 25% reported having no plans for post-disaster counseling.
  
  - Almost half (42.8%) had never met with local ambulance officials to discuss emergency planning.
  
  - Urban school districts were better prepared than rural districts on almost all measures in the survey.
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- Mass-Casualty Events at Schools: A National Preparedness Survey by Dr. Graham et al.
  
  \textit{Journal of Pediatrics 2006}

\textbf{Conclusion of the study:}

- There are important deficiencies in school emergency/disaster planning.
- Rural districts are less well prepared than urban districts.
- Disaster/mass casualty preparedness of schools should be improved through coordination of school officials and local medical and emergency officials.
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**Why disaster preparedness?**

- Government & disaster-relief organizations will help, but you need to be ready
- Local responders may not be able to reach you immediately, or they may need to focus their efforts elsewhere
- Get a kit, make a plan, and be informed (Red Cross)
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Why disaster preparedness?

- American Red Cross—only 7% of population prepared for a disaster or emergency
- FEMA—children who experience catastrophic event often feel helpless
- Children highly vulnerable —after a disaster; foundations of child’s life may suddenly collapse
- How well children and adults respond effects the number of people who survive a catastrophic event
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Why disaster preparedness?

- **Kids** only know basic information, such as remaining calm, not panicking, calling 9-1-1, and listening to parents, but have not discussed emergency plans with parents and do know what to do.
- More than 50% say their families **not** prepared.
- Most believe their schools **not** prepared.
- Most report they feel afraid, terrified when they hear about possible bad weather near where they live.
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- **Why disaster preparedness?**
  - **Parents:** Only 1/3 of parents have talked to their children about disastrous events
  - Said it is important for children to know: they will be safe, how to react quickly and safely, where to go and where to meet, how to stay safe, difference between a warning and a watch
  - **Teachers:** Concerned because more information and content has been taken out of the health curriculum

> Most students do not believe “it” will happen to them
• Why disaster preparedness?
• What’s so great about games?
• What is Disaster Hero?
• How is Disaster Hero being created?
What’s so great about instructional games?

*Play is a very serious matter....It is an expression of our creativity; and creativity is at the very root of our ability to learn, to cope, and to become whatever we may be.*

(Fred Rogers & Sharapan, 1994)
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Stop Disasters!

- Created by the International Strategy for Disaster Reduction
- Common objective: reducing the number of dead and injured by disasters triggered by natural hazards.
- Focused on 9-16 year olds and each scenario takes between 10 and 20 minutes to play.
- The player’s role is to plan and construct a safer environment

Stop Disasters!
Info coming...real life feel

Stop Disasters! Screen Report

Disney Health Kids (Camp Champ): Healthy Eating

http://adisney.go.com/healthykids/home/
Incredible Island

- It covers physical activity and eating right
- Players click on the vegetables and food facts appear on the screen
- Players can then play a trivia game with the information they learned.

http://adisney.go.com/healthykids/home/
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http://adisney.go.com/healthykids/home/
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http://www.legacygames.com/online/play/328/pet_pals%253a_animal_doctor/
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http://www.legacygames.com/online/play/328/pet_pals%253a_animal_doctor/
Zoo Vet: Taking Care of Wild Animal

http://www.zoovetgame.com/images/screens/main_menu_screen.jpg
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• What’s so great about instructional games?
  ▪ Increase interest and motivation; grabs attention
  ▪ Provide enjoyable and fun experiences
  ▪ Improve retention
  ▪ Enhance cognitive skills (such as problem solving, decision making, organization, and critical thinking)
  ▪ Use sophisticated learning strategies
    • Interactivity with several levels of difficulty
    • Information categorized by user’s needs (e.g., state / region)
    • Scenario-based activities lead to mastery
    • Downloadable activities, e.g., checklists, quizzes, posters, lesson plans
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- What is disaster preparedness?
- What’s so great about games?
- What is Disaster Hero?
- How is Disaster Hero being created?
What is Disaster Hero?
- Interactive, online game for grades 1-8
- Designed to teach children, parents, & teachers / caregivers
- Provides multiple games within 4 scenarios: earthquakes, floods, hurricanes, tornadoes
- Emphasizes 3 steps to preparedness: Make a plan, get a kit, and be informed
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- **What is Disaster Hero?**
  - Dante Shields is the most famous and decorated disaster rescue specialist
  - He creates Disaster Area, a disaster simulation and training facility
  - His team, “Ultimate Disaster Heroes,” compete against game players
  - Game players who defeat an “Ultimate Hero” become *Disaster Heroes*
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• What is Disaster Hero?
  ◦ **Dante Shields** world’s “go-to” person for dangerous disaster rescues
  ◦ Strong, experienced
  ◦ Tons of first-hand knowledge
  ◦ Knows what it takes to get the job done; has scars to prove it
  ◦ Commands instant trust
  ◦ His stories inspire greatness
  ◦ Instills common sense, hard work and persistence
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What is Disaster Hero?

- **Mika (MEE-kah)**, rescued by Shields, who took Mika “under his wing”
- An orphan, raised in computer world
- One of most respected and feared hackers on the web.
- Young, smart, spirited, a bit quirky
- Always “on-line” and “tapped in” to cyber world
- Unusual predilection for using computer terminology
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- Create your character
- Select difficulty level
- Introduce Dante and Mika and Ultimate Heroes
- Select disaster scenario
- Pre-test—Disaster Dodge minigame
- Make a plan—Find the Difference minigame
- Get a kit—Flash Finder minigame
- Be informed—Disaster Blaster, map
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- Movie wrap-up of round 1
- **Before**—Hidden Object minigame
- **During**—Bubble Popper; Disaster Maze minigames
- **After**—Replace items, Lightning Match, Quick Care minigames
- Post-test intro movie
- Post-test—Disaster Dodge minigame
- Concluding movie, **player score**
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• What is Disaster Hero?

American College of Emergency Physicians and Legacy Interactive team up to create *DISASTER HERO*, an original web-based game designed to enthrall and teach children and their families practical knowledge on how to prepare for and deal with natural disasters or emergencies.
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- What is Disaster Hero?
- Hurricane Hero
What is Disaster Hero?
Flood Hero

Wirlwind
What is Disaster Hero?
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• How is Disaster Hero being created?
• Funding
  ▪ Federal Emergency Management Agency (FEMA) to ACEP
• Partnering
  ▪ Federal partners
    • Agency for Healthcare Research and Quality
    • Centers for Disease Control and Prevention
    • Office of the Assistant Secretary for Preparedness and Response
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• How is Disaster Hero being created?
  ◦ National partners
    • American College of Emergency Physicians
    • American Academy of Pediatrics
    • American Red Cross
    • Boy Scouts; Girl Scouts; YMCA of Metropolitan Dallas
    • Emergency Medical Services for Children
    • Emergency Nurses Association
    • International Association of Emergency Managers
    • National Association of Pediatric Nurse Practitioners
    • National Child Care Association
    • National Parent Teacher Association
    • State and Territorial Injury Prevention Directors Association
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- How is Disaster Hero being created?
  - Creating and following goals and learning objectives
    - *Be prepared* by working with family to get an emergency and evacuation kits, talk with parents about what to do, and know what could happen in their area
      - List types of hazardous events common to specific state or region
      - Recognize injuries common in specific types of disasters
      - Describe appropriate techniques for personal protection before, during, immediately following event
      - List supplies needed for protection from and treatment of injuries prior to arrival of first responders
      - Select quick-care techniques for common injuries
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How is Disaster Hero being created?

- Performing user and sme evaluation at every step
  - Prototyping
  - Alpha testing
    - Stakeholder groups, ACEP staff and members
    - Usability testing with target audience
  - Beta testing
    - Specific stakeholders, ACEP staff and members
  - Web metrics
    - Usage metric analyzed monthly
    - Game mastery by target audience
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**How is Disaster Hero being created?**

Following an instructional design process:
(ADDIE)

- Confirm (Planning, **Analysis**), Organize (Design, Development),
- Review (Implementation, Evaluation), Enable (Sustainment)
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- **Why teach preparedness to kids?**
  - So they know what to do & how to protect themselves
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• Why teach preparedness to kids?

Specifically they need to know:

◦ **Types of hazardous incidents** categorized by state or region
  • Learn what disasters are likely to happen where they live

◦ **How to stay safe before, during, & immediately after an incident**
  • Learn specifically what to do for earthquakes, floods, hurricanes, and tornadoes

◦ **Types of injuries common to specific types of disaster**
  • Learn basic quick-care techniques for common injuries, i.e., cuts, scrapes, broken bones, hypothermia, burn

◦ **Red Cross - “get a kit, make a plan, be informed”**
  • Learn to be prepared by working with family to get an emergency and evacuation kits, talk with parents about what to do, and know what could happen in their area
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Questions????