

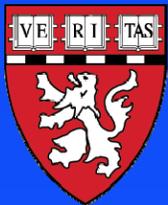
# Identifying Gaps and New Directions in Media Research



**Michael Rich, MD, MPH**

**Director, Center on Media and Child Health  
Children's Hospital Boston**

**Harvard Medical School Harvard School of Public Health**



# Children and Media

- Children and youth early adoptors of technology
- Technology changed society in 20<sup>th</sup> Century
- Television became dominant activity of childhood
- Children and adolescents are saturated in media
- Concern for content  violence, advertising
- Children targeted as consumers – from the cradle
- Media platforms everywhere—bedrooms to pockets
- Use differs by gender, race; changes over time
- Television first and still most used medium
- Wired world - networked, interactive, multitasking

# Media in the Home, School & Family

- Child development (and media use) nested in concentric and overlapping ecological systems
- Limitations of technological fix, recommendations
- Media must be studied and responded to within systems and across contexts and time
- Power of purposeful, focused use of media
- Democratizing effect of media – cuts two ways
- Content matters – learning happens
- Some media make unfounded educational claims
- Parents comfortable with media, expose even their infants with little concern
- We have done a poor job of communicating

# Learning from Media

- When can learning occur? 6 mos, 18 mos, 30 mos?
- Cognitive stimulation vs. overload
- Video deficit – non-existent early, disappears with repetition
- What supports learning? Interaction, contingency
- Effects on imagination and empathy
- Where does learning occur? Hippocampus for conscious memories, amygdala for fear, emotion
- Long-lasting persistence of unconscious fear
- Steady increase of anxiety, 1 SD in 40 years
- More children on psychotropic medications than ever before

# Attention & Cognitive Development

- Mixed findings on attention – pacing vs. content
- Attention to media – traveling lens, familiarity to novelty – varies with age/developmental stage
- Salience vs. feature-sampling
- Effective educational TV improves letter-word skills, number skills, and school readiness; better grades in high school
- Unique educational effects for special groups – autism, English as a 2<sup>nd</sup> language
- Age-specific educational effectiveness
- Content is critical
- Flynn effect – improvement in mean IQ since 1930s

# Interactive Media - Learning and Attention

- Interactivity increases attention
- Increased visual attention to action video games
- Built-in traveling lens
- Reward structure
- Not as good as expected for visual or verbal learning
- Improves “task-switching”
- Computers/VGs can provide limited contingency
- Race-specific “digital divide” of familiarity, facility

# Multitasking

- **Multitasking with media and media vs. media and other activities**
- **Do they “toggle” or truly “multitask”?**
- **Different media have different effects – music vs. visual media**
- **Do one or more tasks suffer from multitasking via:**
  - **Limited Capacity – not enough cognitive resources**
  - **Structural Interference – similar tasks demand same resources**
  - **Attentional Interference – attention is drawn away from primary task by media, primarily in younger children by background media**
- **Are they combining to create new media?**

# Background/Foreground Media

- Background media, usually adult fare, attracting young children's orienting reflex and distracting them from play
- Background media attracting parents' attention and reducing interaction with child
- Multitasking teenagers – reading and memorization exercises suffered with TV on
- Soap operas more distracting than music videos
- Music not a problem

# Media Use Recommendations

- Consider what they are, not the spin
  - “Pediatricians should...”
  - “...discourage use of screen media under the age of 2 years...”
  - “...discourage television in bedroom...”
  - “...not use television as electronic babysitter...”
- Action steps based on incomplete data, risk-benefit ratio
- Recommendations, not prohibitions or blame
- Pediatricians are realists
- Goals to strive for – just like avoiding junk food
- Pediatricians are failing to get the word out

# Methodology Issues

- Concern for limitations of self-report - salience
- Study systems *in situ* for ecological validity
- Content description – time-use diaries, Portable People Meter
- Context evaluation
- Portability – TV is outside the box, the research must follow
- Research technology must be as agile and flexible as media technology
- The need for multiple measures
- Consider momentary sampling - attention
- Video surveys – content, context, BG/FG

# Where do we go from here?

- **Discard “good/bad” values paradigm**
  - Everyone has different values – hard to change, impossible to measure
  - In the Information Age, media are an environmental health influence, like the air we breathe, water we drink
  - Physical, mental and social health outcomes are measurable, consensus can be reached on evidence
  - Reframing issue may open up funding opportunities
- **Lose our assumptions, preconceptions**
  - Learning for the 21<sup>st</sup> Century and beyond
- **Accept that children and youth define themselves with their media diets**

# Establish a coherent field

- **Assess what we know**
  - Citing studies from 30+ years ago
  - Energize and inform the field through common library
  - Use and contribute to CMCH Database of Research, free access to academics and to consumers
- **Standardize nomenclature, methods, variables**
  - Define “learning,” establish protocols, pursue multicenter studies
- **Multidisciplinary to interdisciplinary**
  - At least 13 disciplines have done media research
  - Break out of the academic silos
  - Collaborate to increase rigor, generalizability
- **Holistic view – quantity, content, context**

# Evolve methodology

- Devise methods that are responsive to contemporary and future media use habits/patterns
  - Multiple methods “triangulating” on findings
- Methods must be flexible to follow evolving media technologies and innovative user-devised applications
  - Web 2.0 sites for users to self-assess and respond to problematic media usage
- Increase speed of research “turnaround” so that findings can be applied by users in timely and effective ways
- Follow the data - find what is there
- “Translational research” – lab to “bedside”

# What do we need to investigate?

- Outcomes of greatest interest
- Learning, especially early childhood
- Attention, imagination and school function
- Behavior:
  - Violence
  - Substance use – tobacco, alcohol, other drugs
  - Sex
  - High risk behaviors
  - Empathy
- Anxiety
- Connectedness
- Overweight

# What do we need to investigate?

- Move beyond cross-sectional studies - prospective, longitudinal studies of complex ecological systems, with multiple independent and dependent variables, *a la* Framingham
- “Applied” research – media influence on bullying
- 0-2 learning – how and when, what can be done to optimize gain and minimize risk
- Graduated media use for different needs and demands at different developmental stages
- Background media - less or more?
- Multitasking – a new medium?

# What do we need to investigate?

- **Screen literacy**
- **Media literacy: protective?**
- **Special groups – high media use, learning disabilities, autism**
- **Learning from interactive media**
- **Neurobiological correlates of observed behaviors and learning - fMRI, newer imaging technologies**
- **Roles of senses, limbic system**
- **Evaluate interventions by pediatricians (newborn), teachers, strategies for parents**

# What do we do with the findings?

- **Develop and evaluate positive rather than negative recommendations and applications**
  - More motivating to do than stop doing
  - Explore positive applications of media
- **Educate the public**
  - Address education /entertainment dichotomy
  - Make evidence-based, feasible recommendations
  - Use data to face, rather than be daunted by status quo
  - Don't hesitate to call it as we see it
- **Funding – CAMRA, NCS, media industry**
- **Make do with what we have by collaborating and conserving resources, rather than competing for them**

# Center on Media and Child Health

Children's Hospital Boston

(617) 355 - 2000

[www.cmch.tv](http://www.cmch.tv)



*Keeping Kids Healthy and Safe*