Adults and Informal Science Learning

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Adults and Informal Science Learning – An Overview

- Adult learning
- What is science
- Defining informal science learning
- Findings from a Study of Adult Museum Programs (Sachatello-Sawyer, Fellenz, et. Al, 2002)
- What do we know about adults learning science

Finding Direction

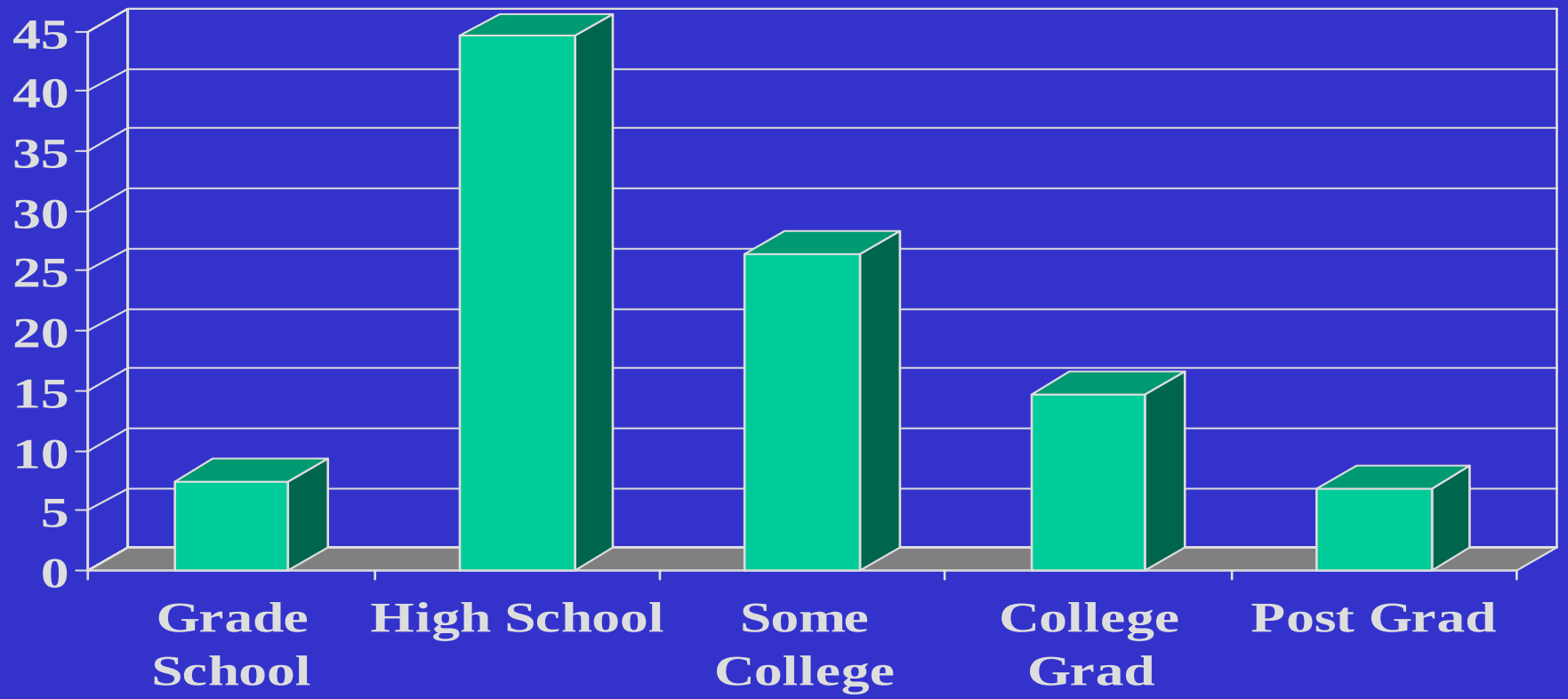
A National Study of Adult Museum Programs

Sachatello-Sawyer and Fellenz, et. al

Who We Interviewed

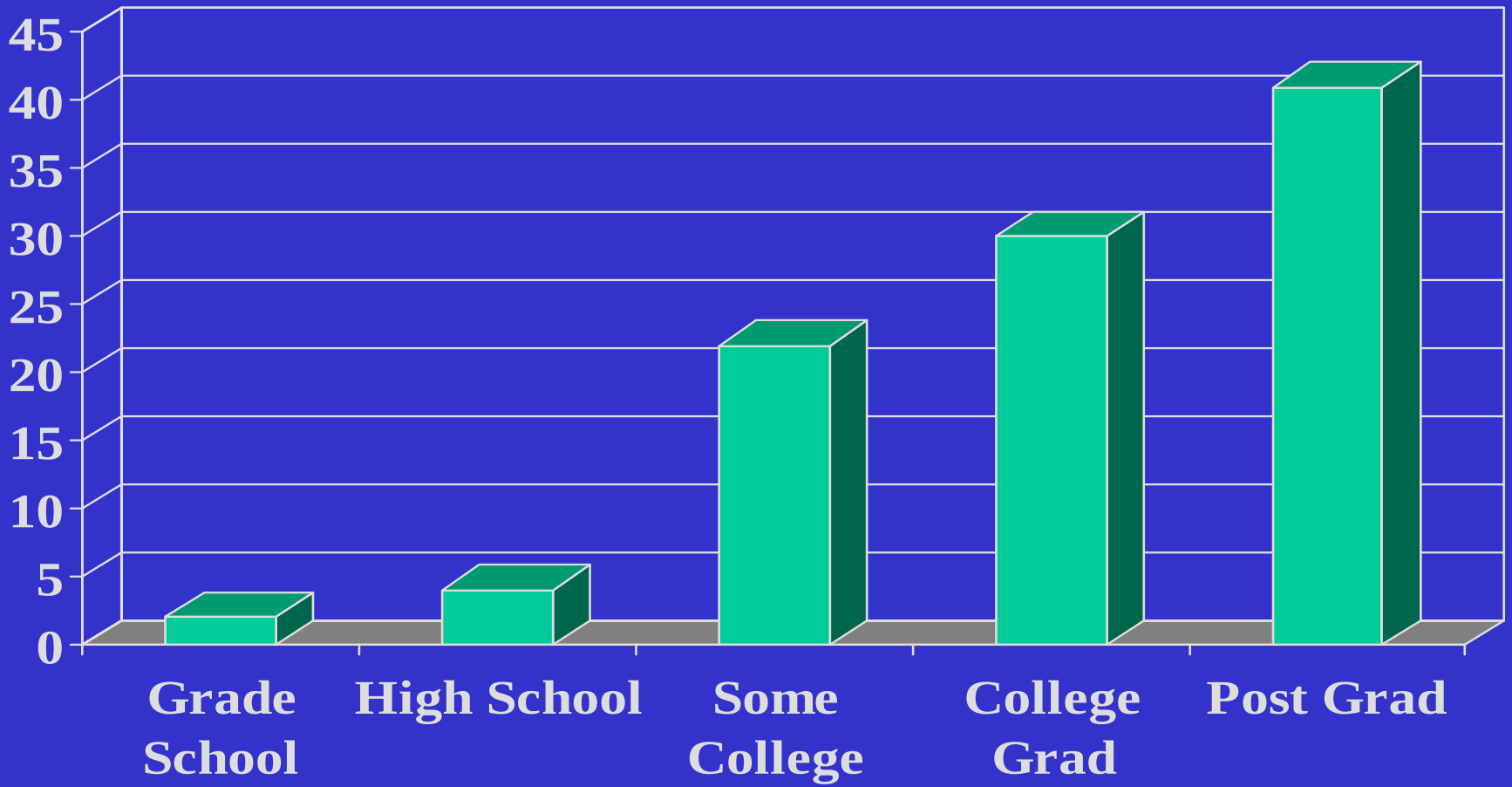
- **508 Adult Participants** in Museum Programs from 1996-1999
- 73 Instructors of Museum Programs
- 143 Museum Education Directors

Education Attainment Levels of Adults in the United States



National Center for Education Statistics, March 1996

Education Attainment Levels of Museum Program Participants



Who Attends Adult Museum Programs?

- **Knowledge Seekers**
- **Museum Lovers**
- **Skill Builders**
- **Socializers**

Museum Program Participants

- **Knowledge Seekers**
  - Desire to learn
  - Learning is fun!
  - Social aspect not as important
- **Museum Lovers**
  - Love being at the Museum
  - Want to be with those of similar interests

Museum Program Participants (cont.)

- **Skill Builders**
  - Want to learn a skill
  - Social aspect varies from somewhat to very important
- **Socializers**
  - Want to socialize
  - Subgroup: Tagalongs friend/spouse wanted to come

Museum Program Participants How do you like to learn?

- 43% Doing/Hands-on
  - I like to learn by doing
- 36% Listening/Lecture
- 32% Seeing
- 14% Reading
- 10% Interacting with Other People
- 8% Interacting with Instructor

Museum Program Participants What Did You Like Most About the Program?

- 36% Instructor's Personality
- 21% Interaction with Other Course Participants
- 17% Interaction with the Instructor
- 12% Hands-on/Touch
- 12% Environment

What do Adults Want

- **Adults want**

Access

to unique people, places, and things

classes, tours, travel, theater, gallery demonstrations, film, festivals, lectures, discussion groups, clubs, docent training, workshops

Adults Want Experiences

- Knowledge acquisition
- Practical skill-building
- Physical challenges
- Entertainment
- Intrapersonal interactions
- Interpersonal interactions
- Spiritual connections
- Aesthetic experiences
- Outdoor adventure

What’s Important

Challenging Content	94%
Dynamic Instructor	92%
Time for Questions and Discussion	85%
Learning how to get More Info	82%
Getting Close/Access	80%
Coming Away with Questions	79%
Feeling Confident	75%
Pleasant Experience	74%

What's Important

Hands-on Activities	70%
Talk to Someone about Topic	70%
Beginning with an Overview	68%
Getting Help to Remember	67%
Interpretation of Facts	66%
Comfortable Setting	64%
Checkout Accuracy	56%
Interacting w/Other Participants	49%
Connected to Museum's Purpose	41%

What’s Important

Attending with Others you Know	29%
Preparing Before	23%
Professionally Dressed Instructor	16%

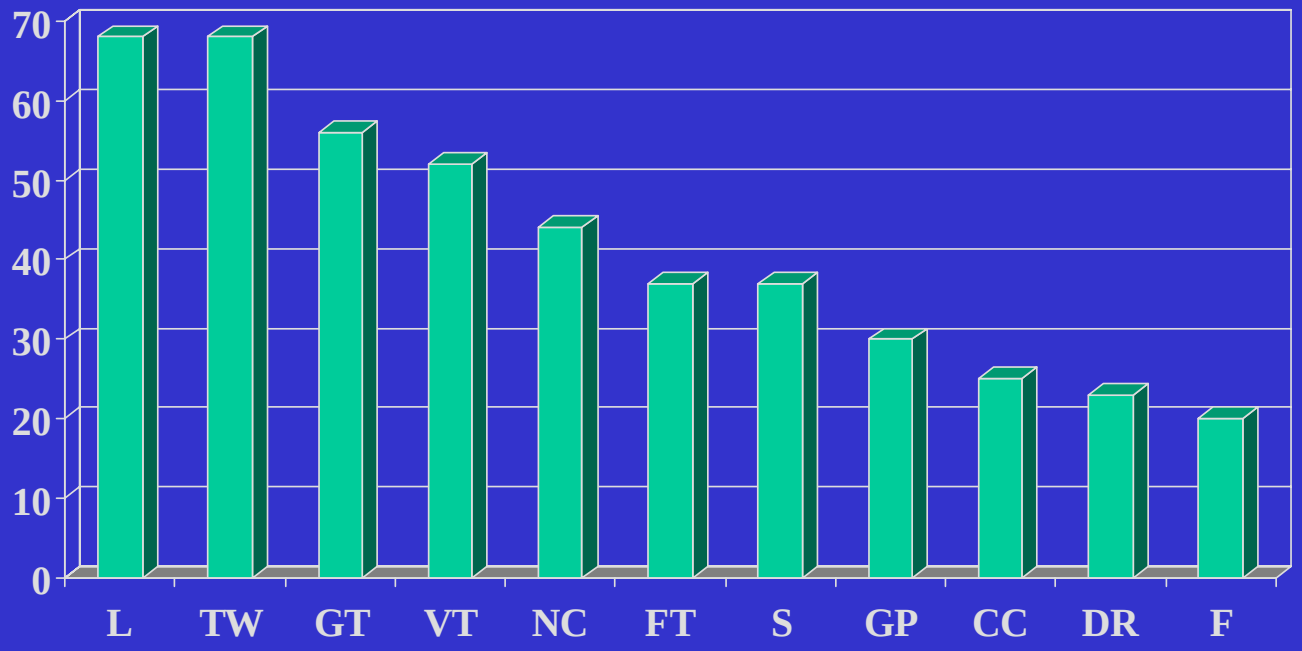
“I'm tired of being put in a room in a basement and hearing someone talk for an hour. Why are all the fun classes designed for kids? I want to play with putty, and fossils, and go on field trips to swamps too!”

-Program Participant,
Science Museum

"Boring lectures by boring bespectacled guys are passe. Put people in circles and make them discuss things."

-Program Participant, Natural History Museum

94% of Museums offer Some Type of Adult Programs



L = Lectures
TW = Teacher Workshops
GT = Guided Tours
VT = Volunteer Training
NC = Non-credit Classes
FT = Field Trips
S = Symposiums
GP = Gallery Programs
CC = Credit Courses
DP = Drama Presentations
F = Films

Excellent Museum Programs Change Adult Lives

Measuring Change

- Life Change Experienced
- Transformed Perspectives
- Changed Attitudes or Emotions
- Increased Appreciation or Meaningfulness
- Expanded Relationships
- Knowledge and Skill Mastered

Adult Informal Science Learning

Science learning outcomes can change over time

Short term outcomes:

- Immediate impacts
- Good recall of experience
- Less likely to be able to place experience in context of life (Spock, 1999)

Adult Informal Science Learning

Long term outcomes:

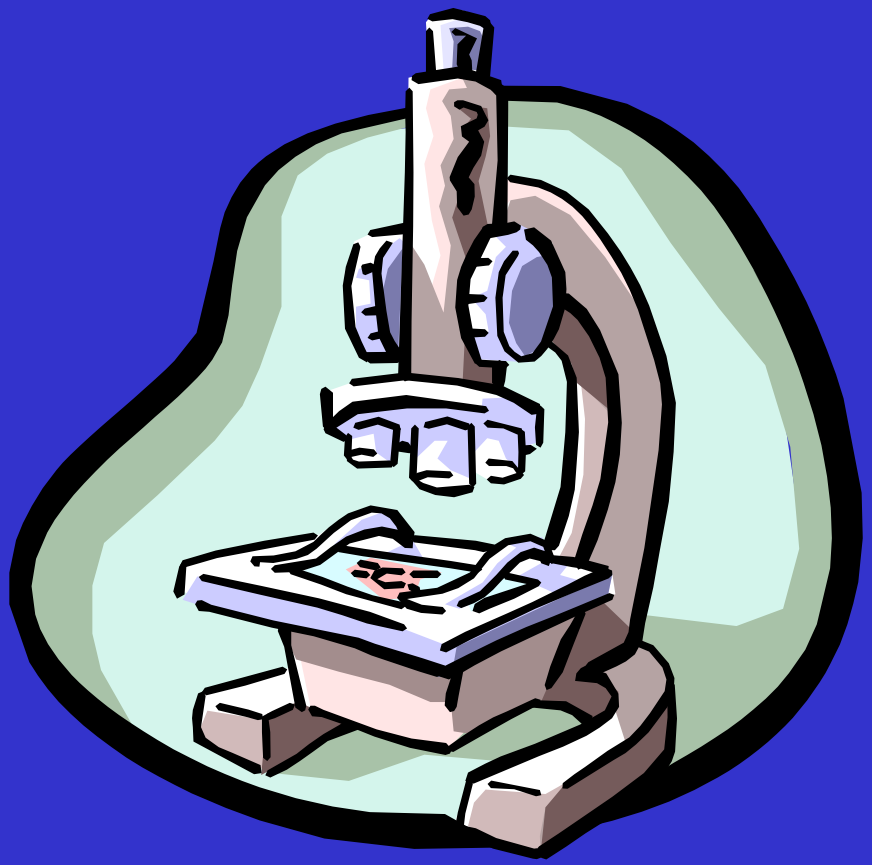
* Memories of experience may be fainter
* Important events are reported in emotional terms and in context of overall life

Adult Informal Science Learning

- Adult learning is additive and science learning interests change over time
- Adults “make meaning” of science (Roberts, 1999)
- Informal science learning occurs throughout adulthood (Tough, 1979)
- Science is understood in a cultural context (Cajete, 2000)

Adult Informal Science Learning

- Persistent adult learners often pursue science interests they had as a 9-12 year old child (Graham, 1990)
- Formal and informal science learning is linked – formal school success increases participation in informal museum science programs (Sachatello-Sawyer & Fellenz)



Adult Informal Science Learning

Adult Learning and the Internet

- Nearly 9 in 10 (87%) online users have used the internet to look up the meaning of a scientific concept, answer a specific science question, learn more about a scientific breakthrough, help complete a school assignment, check the accuracy of a scientific fact, downloaded scientific data, or compare different or opposing scientific theories.
- Nearly three quarters (71%) of internet users say they turn to the internet for science news and information because it is convenient.
  (Pew Internet Project and the Exploratorium, 2006)