

TRANSFORMING INFORMATION  
LITERACY:  
DO WE HAVE THE SKILLS?

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# OUTLINE

- WHAT SKILLS DO TEACHERS AND LEARNERS NEED TO BE 21<sup>ST</sup> C. FLUENT?
- WHAT ARE “21ST CENTURY LITERACIES” OR “FLUENCIES”?
- HOW DO THEY RELATE TO INFORMATION LITERACY?
- HOW CAN NEW TECHNOLOGIES AND ONLINE/IMMERSIVE ENVIRONMENTS HELP BUILD THEM?
- CASE STUDY: WORLD OF WARCRAFT

**AT THE END OF THIS  
WORKSHOP, YOU WILL BE  
ABLE TO:**

- 1. DISCUSS RECENT FINDINGS ON THE 21<sup>ST</sup> C. FLUENCY LEVELS OF STUDENTS**
- 2. DISCUSS THE RELATIONSHIP BETWEEN INFORMATION LITERACY AND 21<sup>ST</sup> CENTURY FLUENCIES IN ORDER TO EVALUATE THE RELEVANCE OF EACH FOR TODAY'S STUDENTS**
- 3. DESCRIBE HOW GAMES, SIMULATIONS AND VIRTUAL WORLDS ADDRESS BEST PRACTICES**
- 4. ANALYZE HOW ONLINE LEARNING TOOLS SUCH AS GAMES FOSTER 21<sup>ST</sup> C. FLUENCIES**

**THE TRUTH IS OUT THERE:  
NETGEN NEEDS AND  
21ST CENTURY FLUENCIES**

# 21ST CENTURY FLUENCIES

- SCIENTIFIC LITERACY
- NUMERACY
- ECONOMIC LITERACY
- MEDIA LITERACY
- DIGITAL/ICT LITERACY
- VISUAL LITERACY
- INFORMATION LITERACY

# NUMERACY AND LITERACY SKILLS

- **“...A SIGNIFICANT NUMBER OF STUDENTS BELIEVED THEIR BASIC ACADEMIC AND LEARNING SKILLS WERE WEAK, IN PARTICULAR FOR STUDY, TEST TAKING AND MATH SKILLS. ... AN EQUIVALENT NUMBER REPORTED THEY COULD USE HELP IN DEVELOPING THESE SKILLS AREAS...”. (ACCC& HRSDC, 2007)**

# 21ST CENTURY FLUENCIES

- **STUDENTS NEED WORK IN ALL FLUENCIES**
- **STARTING TO SEE LIBRARIES TAKE STEPS TO ADDRESS**
  - ATWATER DIGITAL LITERACY PROJECT
  - LONDON PUBLIC LIBRARY MEDIA LITERACY

WHAT SHOULD WE TEACH?  
TRANSFORMING INFORMATION  
LITERACY

21<sup>ST</sup> CENTURY FLUENCIES



## Liaison program pairs librarians with faculty

*by Catherine Baird*  
*July 09, 2007*

McMaster University Libraries are launching an exciting new initiative, Library Liaison @ Mac, that will match librarians with academic departments, schools and programs to ensure that library services and collections are closely aligned with teaching and research priorities.

Liaison librarians will work collaboratively with faculty and in the upcoming year will focus on achieving four key priorities:

- ◆ Building partnerships between liaison librarians and their assigned departments, schools or programs
- ◆ Partnering to teach 21st century fluencies
- ◆ Managing access to scholarly literature
- ◆ Providing research consultations for faculty, graduate students and research assistants

## Search the Daily News

Krista Godfrey, liaison librarian for classics, works with Claude Eilers, associate professor in the Department of Classics. Photo courtesy of Catherine Baird.

# 21ST CENTURY FLUENCIES

■ SCIENTIFIC LITERACY

■ NUMERACY

■ ECONOMIC LITERACY

■ MEDIA LITERACY

■ DIGITAL/ICT LITERACY

■ VISUAL LITERACY

■ INFORMATION LITERACY

■ MULTICULTURAL LITERACY/  
GLOBAL AWARENESS

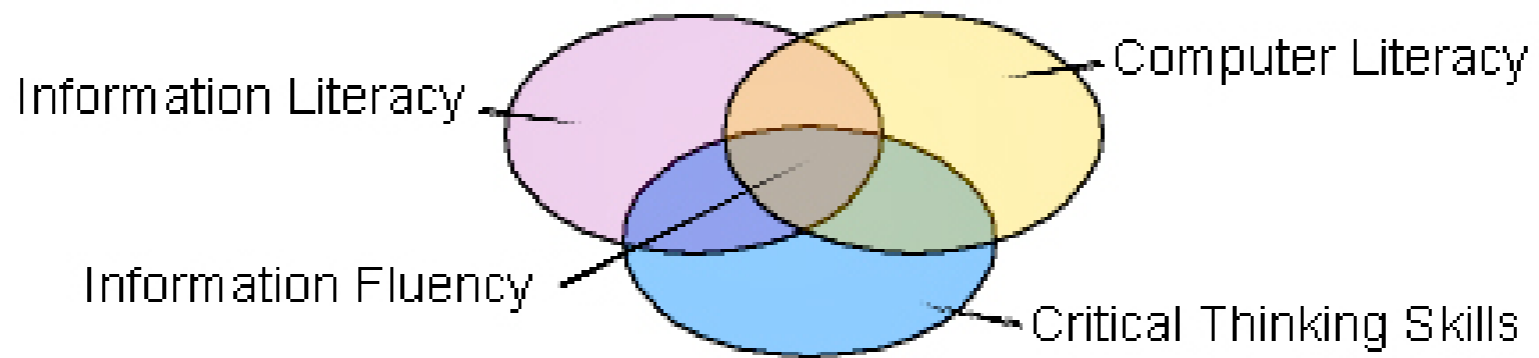
# LITERACY

**“JUST AS LITERACY EMBODIED THE IDEALS OF AN INDUSTRIAL AGE, TECHNOLOGY IS POSITIONED AS A SYMBOL OF ENLIGHTENED PROGRESS IN THE AGE OF INFORMATION.” (TYNER, 1998)**

# COMMON THEMES

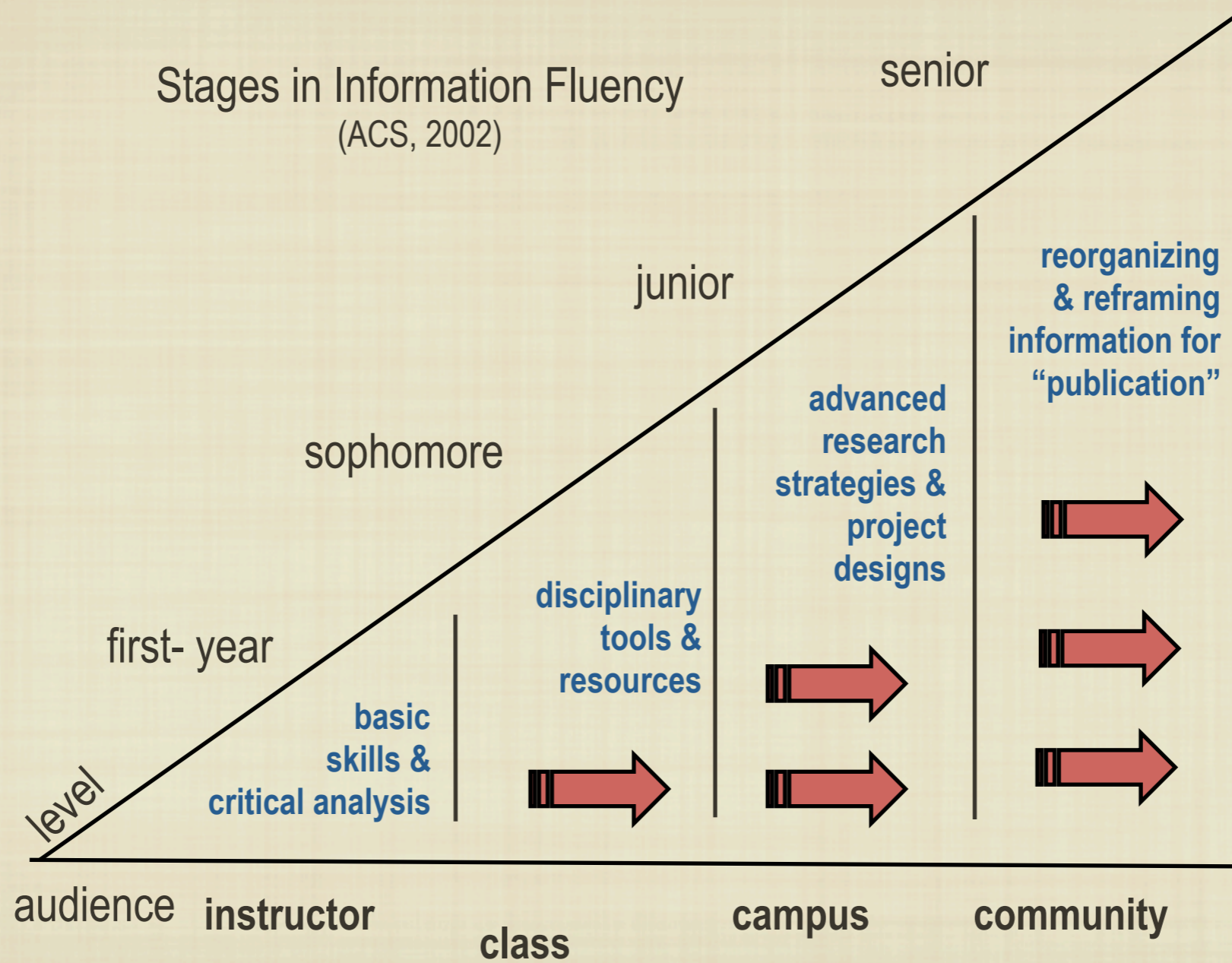
- TECHNOLOGY
- COGNITIVE SKILLS AND CRITICAL THINKING
- CREATIVITY
- RISK-TAKING
- PRODUCTIVITY
- LIFELONG LEARNING

# INFORMATION FLUENCY

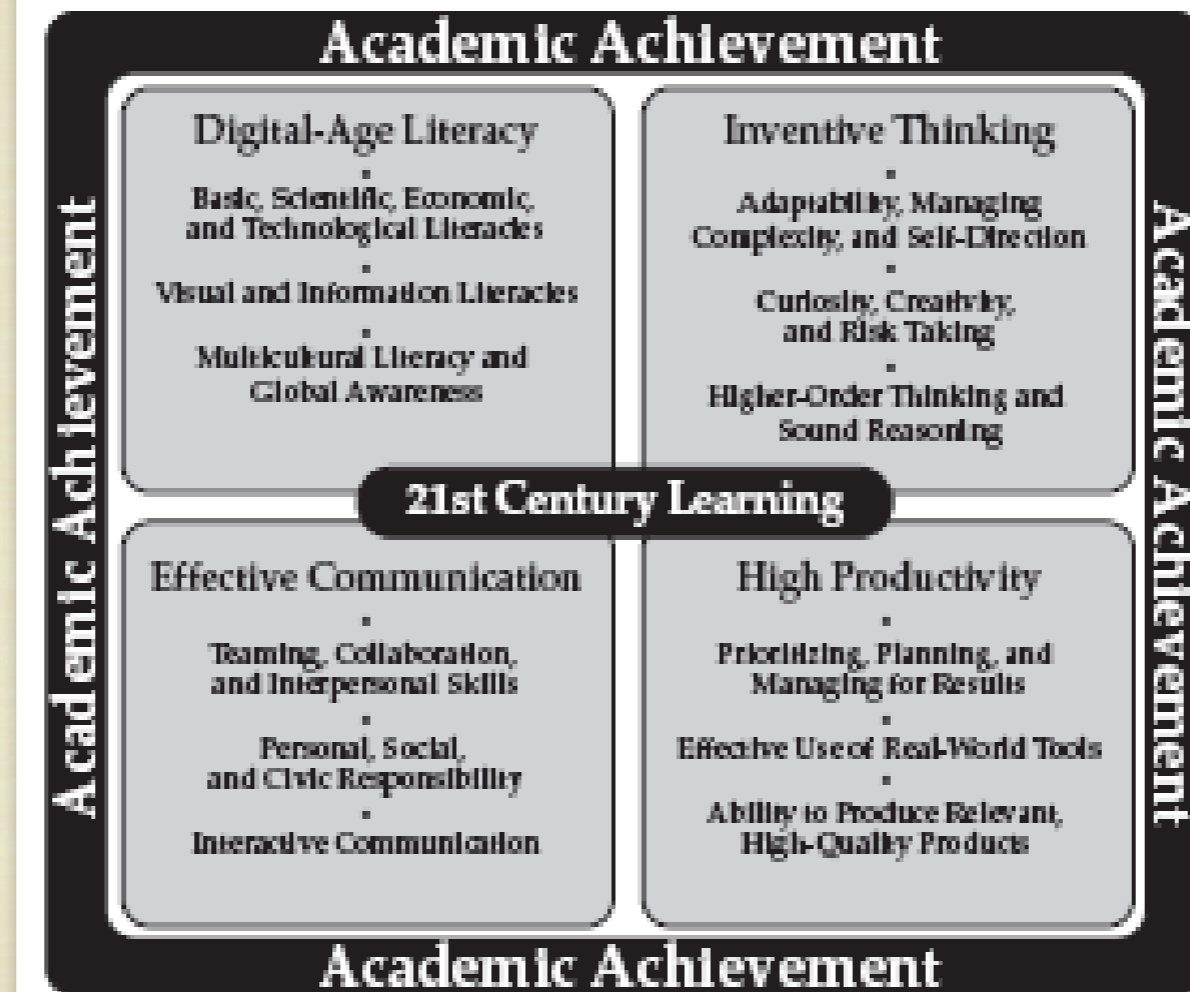


(Associated Colleges of the South, 1999)

Stages in Information Fluency  
(ACS, 2002)



# enGauge 21st Century Skills



**“IT IS LEARNING RATHER THAN  
INFORMATION, AND  
SOCIOTECHNICAL FLUENCY  
RATHER THAN LITERACY, THAT  
COMPRISE THE AGENDA FOR  
TOMORROW.”**

**(MARCUM, 2002)**



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Job Number: 3641556

**Title: Information technology (it) business analyst (NOC: 2171)**

Terms of Employment: Permanent, Full Time, Day

Salary: To be negotiated

Anticipated Start Date: As soon as possible

Location: Toronto Centre, Ontario (2 vacancies)

Essential Skills: Reading text, Document use, Numeracy, Writing, Oral communication, Working with others, Problem solving, Decision making, Critical thinking, Job task planning and organizing, Significant use of memory, Finding information, Computer use, Continuous learning

# ICT LITERACY

**“WHILE LEARNING TECHNOLOGY SKILLS CAN BE THE EASY PART, A LACK OF LITERACY, NUMERACY, PROBLEM SOLVING, AND TEAMWORK SKILLS IN NEW AND EXISTING WORKERS REFLECTS THE GAP BETWEEN TECHNOLOGY PROFICIENCY AND ICT LITERACY.”**

**(ICT LITERACY PANEL, 2007)**

COMPLEXITY OF KNOWLEDGE AND EXPERTISE

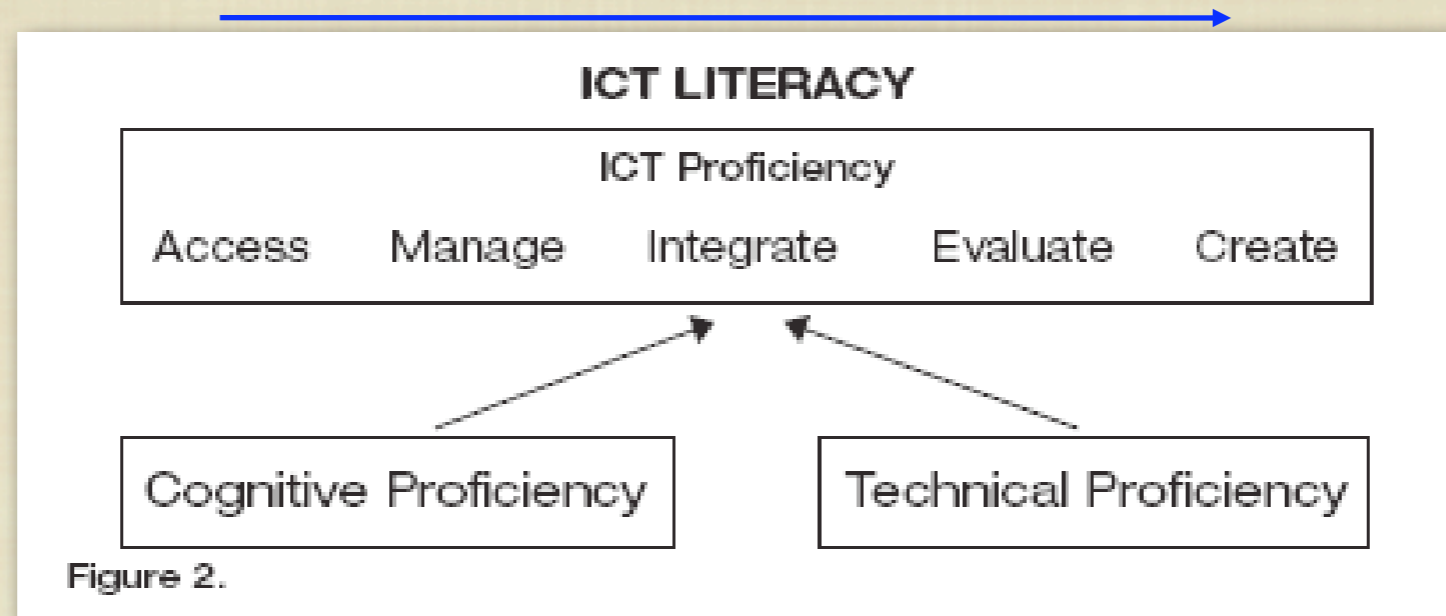


Figure 2.

LITERACY,  
NUMERACY, PROBLEM  
SOLVING, AND  
SPATIAL / VISUAL  
LITERACY

DIGITAL LITERACY  
(HARDWARE,  
SOFTWARE  
APPLICATIONS,  
NETWORKS, DIGITAL  
TECHNOLOGY)

(ICT LITERACY PANEL, 2007)

## 21<sup>ST</sup> C. LITERACY

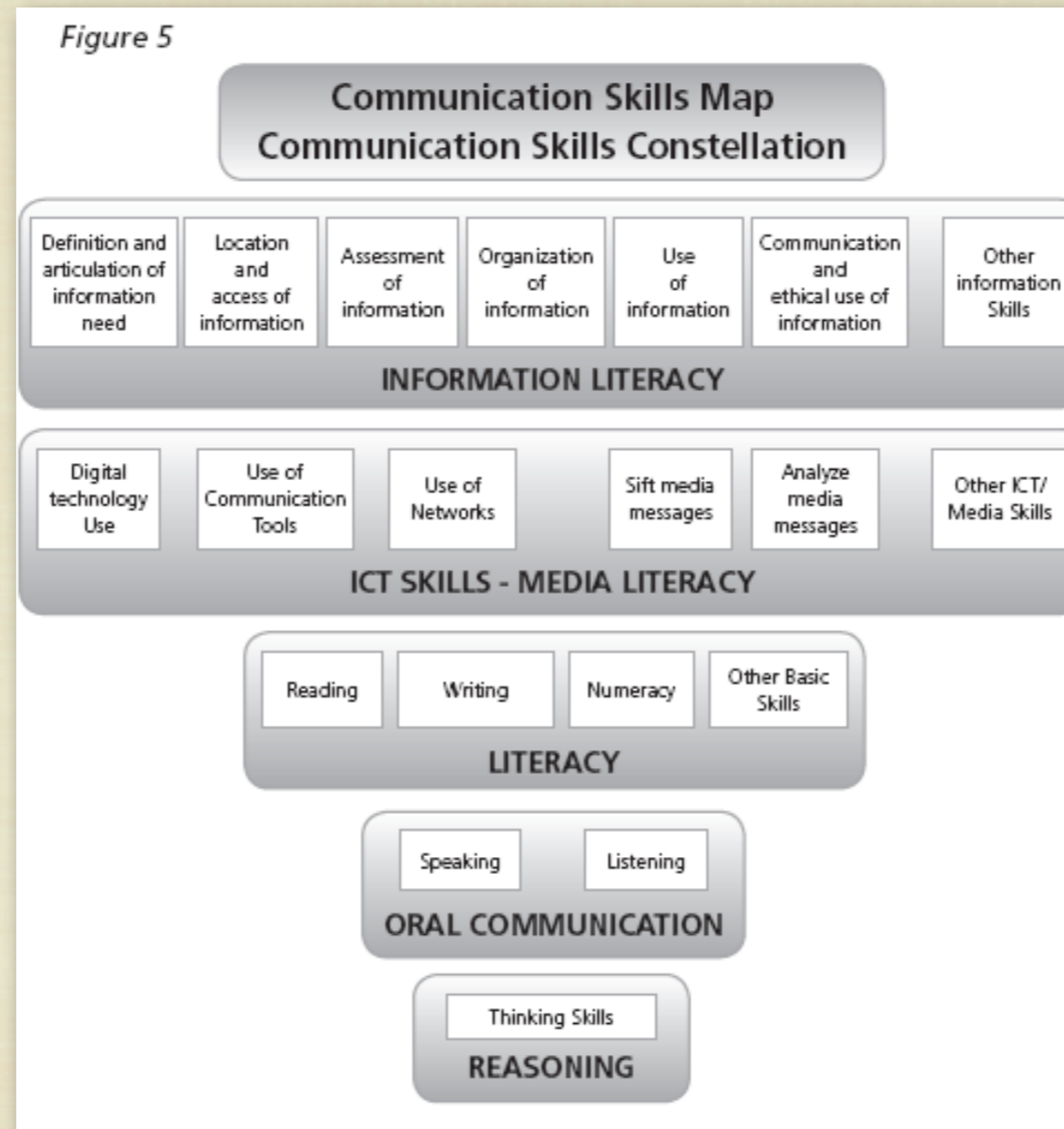
**“...THE SET OF ABILITIES AND SKILLS WHERE AURAL, VISUAL, AND DIGITAL LITERACY OVERLAP. THESE INCLUDE THE ABILITY TO UNDERSTAND THE POWER OF IMAGES AND SOUNDS, TO RECOGNIZE AND USE THAT POWER, TO MANIPULATE AND TRANSFORM DIGITAL MEDIA, TO DISTRIBUTE THEM PERVASIVELY, AND TO EASILY ADAPT THEM TO NEW FORMS.”**

**(NMC, 2005)**

# NEW MEDIA LITERACIES

**“...A SET OF CULTURAL COMPETENCIES AND SOCIAL SKILLS THAT YOUNG PEOPLE NEED IN THE NEW MEDIA LANDSCAPE. ...THESE NEW SKILLS BUILD ON THE FOUNDATION OF TRADITIONAL LITERACY, RESEARCH SKILLS, TECHNICAL SKILLS, AND CRITICAL ANALYSIS SKILLS TAUGHT IN THE CLASSROOM.” (JENKINS, 2006)**

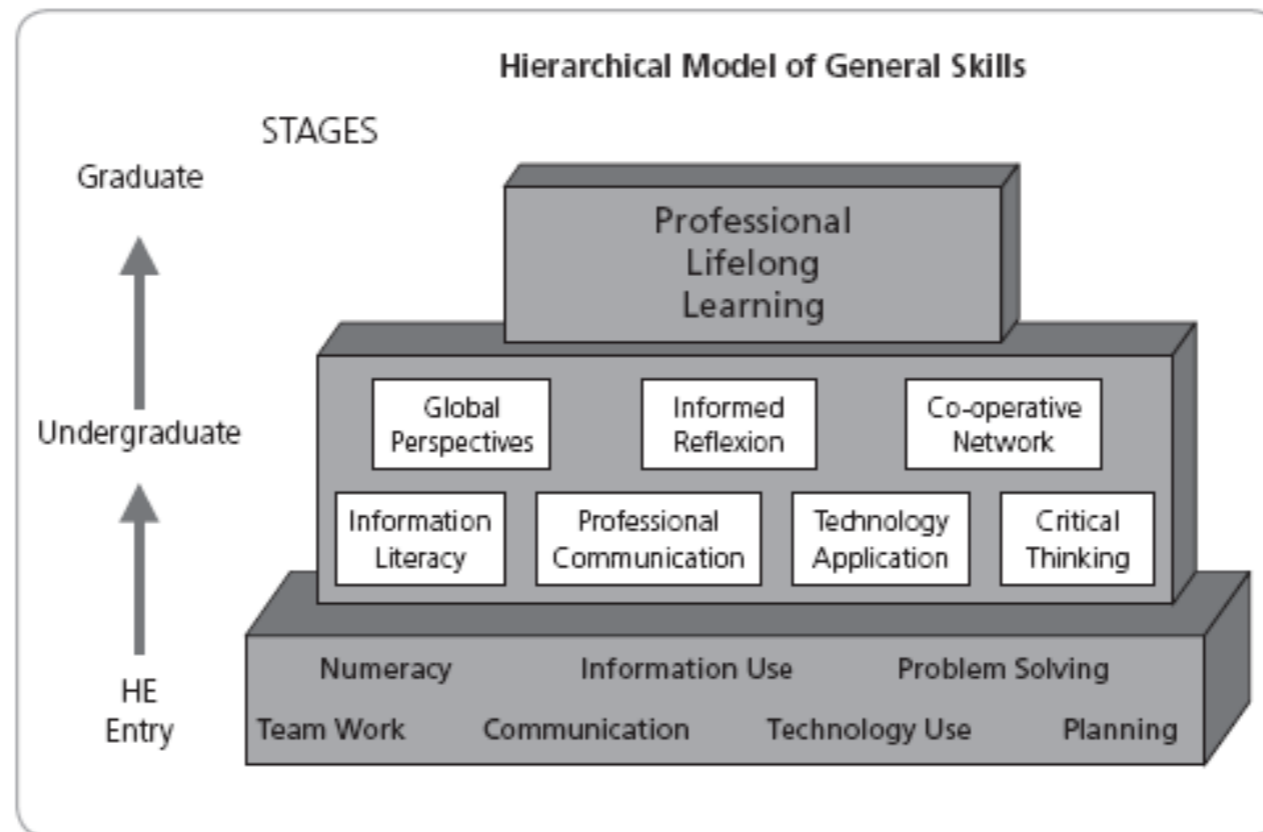
Figure 5



(REEFF, ZABAL, &  
BLECH, 2006)

Figure 7

### Hierarchical Model of Generic Skills in Higher Education



CATTS, 2007, CITED IN  
UNESCO

# ESSENTIAL LEARNING

- Intellectual and practical skills:
  - Inquiry and analysis
  - Critical and creative thinking
  - Written and oral communication
  - Quantitative literacy
  - Information literacy
- Intercultural knowledge and competence
- Foundations and skills for lifelong learning  
(AACU, 2008)



**“LITERACY, AT BOTTOM LINE, HAS TO BE ABOUT BEING ABLE TO READ AND WRITE BECAUSE OF THE ACCESS THIS GIVES US TO THE WORLD OF KNOWLEDGE AND CULTURE. BUT IT IS MORE ABOUT PEOPLE ENGAGING WITH THIS KNOWLEDGE AND CULTURE THAN IT IS ABOUT A STRING OF MEASURABLE SKILLS OR COMPETENCIES.”**

**WENDY EARLE, IOI  
EDUCATION FORUM, 2005**

# DISCUSSION

- INFORMATION LITERACY, INFORMATION FLUENCY OR 21<sup>ST</sup> C. FLUENCIES: DOES THE CHANGE IN TERMINOLOGY MATTER?
- WHAT ARE WE CURRENTLY TEACHING?
- WHAT SHOULD WE BE TEACHING?

DO WE HAVE THE SKILLS?

TECHNOLOGIES AND  
FLUENCIES

TECHNOLOGY AS A LEVER

# TEACHING AND TECHNOLOGY

- **LEARNING MANAGEMENT SYSTEMS**
- **AUDIENCE RESPONSE TECHNOLOGY**
- **GAMES/SIMULATIONS/VIRTUAL WORLDS**

# LEARNING 2.0

- **STUDENT-CENTERED AND TECHNOLOGICALLY ENRICHED**
- **ACTIVE LEARNING AND PARTICIPATION**
- **INFO LIT, TECHNOLOGICAL FLUENCY AND SUBJECT KNOWLEDGE BLENDED**
- **PEDAGOGY FIRST, THEN TECHNOLOGY**

# BEST PRACTICES FOR UNDERGRADUATE EDUCATION

- ENCOURAGES STUDENT-FACULTY INTERACTION
- ENCOURAGES COOPERATION AMONG STUDENTS
- ENCOURAGES ACTIVE LEARNING
- PROVIDES PROMPT FEEDBACK
- RESPECTS DIVERSE TALENTS AND WAYS OF KNOWING
- COMMUNICATES HIGH EXPECTATIONS
- EMPHASIZES TIME ON TASK

# WHAT THE HECK?

## ■ GAMES

- VOLUNTARY ACTIVITY, CREATING AN IMAGINARY OR IMMERSIVE WORLD, PLAYED WITHIN A SPECIFIC TIME AND PLACE ACCORDING TO ESTABLISHED RULES

## ■ SIMULATION

- REPRESENTATIONS OF REAL-WORLD SYSTEMS, CONTAIN RULES AND STRATEGIES THAT ALLOW ACTIVITY TO TAKE PLACE FLEXIBLY AND WITH VARIABLE CONDITIONS

## ■ VIRTUAL WORLDS

- PERSISTENT SPACES, MAY BE REALITY OR FANTASY BASED, MAY HAVE GAMING OR SOCIAL ELEMENTS



# WHY GAMING, SIMULATIONS AND VIRTUAL WORLDS?

- UNIVERSITIES RECOGNIZE LINK BETWEEN TEACHING BEST PRACTICES, STUDENT NEEDS, AND STUDENT OUTCOMES
- OVER 130 COLLEGES AND UNIVERSITIES IN SECOND LIFE
- PROVIDES IMMERSIVE, COLLABORATIVE, CREATIVE LEARNING EXPERIENCE

# LEARNING STYLES

- VISUAL
- KINESTHETIC
- CONSTRUCTIVIST/EXPLORATORY

# STUDENT ADVANTAGES

- **MANY STUDENTS COMFORTABLE WITH COMPUTERS AND GAMING**
- **LEARN THROUGH EXPLORATION, COLLABORATION, CREATION AND CONSTRUCT INNOVATIVE SOLUTIONS**
- **ANONYMITY TAKES AWAY FEAR OF FAILING, TRY UNTIL THEY GET IT RIGHT**
- **INCREASED MOTIVATION, BECOME INVESTED**
- **LEARNING BECOMES FUN**

# BEST PRACTICES FOR UNDERGRADUATE EDUCATION

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# AN IDEAL LEARNING ENVIRONMENT?

- CUSTOMIZED TO SPECIFIC STUDENT NEEDS
- IMMEDIATE FEEDBACK
- CONSTRUCTIVE
- MOTIVATES BEYOND EXTERNALLY IMPOSED REQUIREMENTS
- BUILDS ENDURING CONCEPTUAL STRUCTURES

# WHAT ABOUT LIBRARIES?

- **SUPPORT THE EDUCATIONAL MISSION OF THE UNIVERSITY**
- **SUPPORT UNDERGRADUATE EDUCATION BEST PRACTICES**
- **EXPLORE POTENTIAL OF GAMES/SIMULATIONS FOR INFORMATION LITERACY AND OTHER 21ST CENTURY FLUENCIES**

21ST CENTURY  
FLUENCIES  
AND MMORPGs!?!?!?

# WHAT IS AN MMORPG?

- MASSIVELY MULTIPLAYER ONLINE ROLE PLAYING GAME
- VIRTUAL WORLDS
- MANY SIMULTANEOUS PLAYERS



# WORLD OF WARCRAFT

- MMORPG CREATED BY BLIZZARD (STARCRRAFT, WARCRAFT, DIABLO)
- RELEASED NOVEMBER 2004
- LARGEST MMORPG: 10 MILLION PLAYERS WORLDWIDE

# THE GAME OUTSIDE THE GAME

- **WEB SITES -** [WORLDOWWARCRAFT.COM](http://WORLDOWWARCRAFT.COM),  
[WOWINSIDER.COM](http://WOWINSIDER.COM), [MMO-CHAMPION.COM](http://MMO-CHAMPION.COM)
- **FORUMS -** [ELITISTJERKS.COM](http://ELITISTJERKS.COM),  
[WORLDOWWARCRAFT.COM](http://WORLDOWWARCRAFT.COM)
- **DATABASES -** [WOWHEAD.COM](http://WOWHEAD.COM),  
[THOTTBOT.COM](http://THOTTBOT.COM)
- **WIKIS -** [WOWIKI.COM](http://WOWIKI.COM)
- **MACHINIMA -** [WARCRAFTMOVIES.COM](http://WARCRAFTMOVIES.COM),  
[YOUTUBE.COM](http://YOUTUBE.COM)

# SUMMARY