Targeted Critical Thinking: Effective Use of Critical Thinking Activities

Calvin Wang

Arcadia University

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Learning Styles and Critical Thinking in Library Instruction

PaLA, LIRT Spring Workshop, March 11, 2011
Targeted Critical Thinking

Effective Use of Critical Thinking Activities

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First a word from the sponsor...

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Wang is wrong, but Wäng is right.

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Effective Use of Critical Thinking Activities is about applying the activity for the knowledge to the population at the time under the circumstances.
Effective Use of Critical Thinking Activities is about TARGETING
SCOPE & SEQUENCE
scope & sequence

SAMPLE STANDARDS
scope & sequence

sample standards

SAMPLE POPULATIONS
scope & sequence

sample standards

sample populations

SAMPLE
KNOWLEDGE
scope & sequence
sample standards
sample populations
sample knowledge
sample activities
Effective Use of Critical Thinking Activities is about TARGETING
Effective Use of Critical Thinking Activities

is about applying

the activity
for the knowledge
to the population
at the time
under the circumstances
Scope & Sequence

is about

the

knowledge

at the
time

RIGHT
## K-12 Scope and Sequence Charts

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>Civics in the Kindergarten Classroom (Civics)</td>
<td>Economics in the Kindergarten Classroom (Economics)</td>
<td>Me and My World (Geography)</td>
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<tr>
<td></td>
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<td>Many Families, One Nation (History)</td>
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<tr>
<td>First Grade</td>
<td>Civics in the First Grade Classroom (Civics)</td>
<td>Economics in the First Grade Classroom (Economics)</td>
<td>Learning About My World (Geography)</td>
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<td>Our American Heritage (History)</td>
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<tr>
<td>Second Grade</td>
<td>Civics in the Second Grade Classroom (Civics)</td>
<td>Economics in the Second Grade Classroom (Economics)</td>
<td>Our World (Geography)</td>
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<td></td>
<td></td>
<td>Unity in Diversity (History)</td>
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<tr>
<td>Third Grade</td>
<td>Citizenship (Civics)</td>
<td>The First Americans (History, Geography and Civics)</td>
<td>Foothills and Freeways (Civics, Economics and History)</td>
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<tr>
<td>Fourth Grade</td>
<td>Jr. Geographers (Geography)</td>
<td>Exploring Africa (Geography)</td>
<td>Colorado (Civics, Economics and History)</td>
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<td></td>
<td>Japan (optional study)</td>
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<td></td>
<td></td>
<td></td>
<td>(History and Civics)</td>
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<tr>
<td>Fifth Grade</td>
<td>The World in 1492 (Geography, History, Economics)</td>
<td>Exploration of the Western Hemisphere (Geography and History)</td>
<td>Colonial America (Economics and History)</td>
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<td></td>
<td>The American Revolution (History, Civics and Economics)</td>
</tr>
<tr>
<td>Sixth Grade</td>
<td>Founding our Nation (Civics and History)</td>
<td>Our Neighbors to the South and North (Economics and Geography)</td>
<td>U.S. Regional Geography (optional study) (Geography)</td>
</tr>
</tbody>
</table>

http://jeffcoweb.jeffco.k12.co.us/isu/ss/scoseq.html
<table>
<thead>
<tr>
<th>Scope &amp; Sequence for Language Arts in Carrollton-Farmers Branch Independent School District, Carrollton, Texas</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Middle School</strong></td>
<td><strong>Language Arts</strong></td>
</tr>
<tr>
<td><strong>6th Grade</strong></td>
<td><strong>7th Grade</strong></td>
</tr>
<tr>
<td><strong>Oral Communication: Listening, participating in discussion, presenting ideas.</strong></td>
<td><strong>Oral Communication: Listening, participating in discussion, presenting ideas.</strong></td>
</tr>
<tr>
<td>Developing as a reader</td>
<td>Developing as a reader</td>
</tr>
<tr>
<td>6.1.E: Listen to proficient models of oral reading from classic and contemporary works to appreciate language and to increase vocabulary.</td>
<td>7.1.E: Listen to proficient models of oral reading from classic and contemporary works to appreciate language and to increase vocabulary.</td>
</tr>
<tr>
<td>Understanding/Appreciating literature</td>
<td>Understanding/Appreciating literature</td>
</tr>
<tr>
<td>6.2.B: Compare language, oral traditions, and experiences that connect and reflect customs, regions, and cultures.</td>
<td>7.2.B: Compare language, oral traditions, and experiences that connect and reflect customs, regions, and cultures.</td>
</tr>
<tr>
<td>Developing as a researcher</td>
<td>Developing as a researcher</td>
</tr>
<tr>
<td>6.2.C: Clarify and support spoken ideas with evidence, elaboration, and examples.</td>
<td>7.2.C: Clarify and support spoken ideas with evidence, elaboration, and examples.</td>
</tr>
<tr>
<td>Developing as a reader</td>
<td>Developing as a reader</td>
</tr>
<tr>
<td>6.2.F: ESL: Identify people, places, objects, events, and basic concepts such as numbers, days of the week, food, occupations, time, and surroundings.</td>
<td>7.2.F: ESL: Identify people, places, objects, events, and basic concepts such as numbers, days of the week, food, occupations, time, and surroundings.</td>
</tr>
<tr>
<td>Understanding/Appreciating literature</td>
<td>Understanding/Appreciating literature</td>
</tr>
<tr>
<td>6.3.A: Present dramatic interpretations and read aloud texts, plays, and personal experiences to demonstrate understanding and engage an audience.</td>
<td>7.3.A: Present dramatic interpretations and read aloud texts, plays, and personal experiences to demonstrate understanding and engage an audience.</td>
</tr>
<tr>
<td>Developing as a reader</td>
<td>Developing as a reader</td>
</tr>
<tr>
<td>Understanding/Appreciating literature</td>
<td>Understanding/Appreciating literature</td>
</tr>
<tr>
<td>6.5.A: Read from a variety of self-selected and assigned genres, including classic and contemporary works, for pleasure, to acquire information, to appreciate the writer’s craft and to discover models for his/her own writing.</td>
<td>7.5.A: Read from a variety of self-selected and assigned genres, including classic and contemporary works, for pleasure, to acquire information, to appreciate the writer’s craft and to discover models for his/her own writing.</td>
</tr>
<tr>
<td>Developing as a researcher</td>
<td>Developing as a researcher</td>
</tr>
<tr>
<td>6.5.B: Use multiple reference aids (dictionary, thesaurus, technology) to locate or clarify meanings.</td>
<td>7.5.B: Use multiple reference aids (dictionary, thesaurus, technology) to locate or clarify meanings.</td>
</tr>
<tr>
<td><a href="http://cfbstaff.cfbisd.edu/library/MIDTAKS.htm">http://cfbstaff.cfbisd.edu/library/MIDTAKS.htm</a></td>
<td></td>
</tr>
</tbody>
</table>
scope & sequence for Mathematics on Home School Math Website

http://www.homeschoolmath.net/curriculum_reviews/scope_sequence.php
scope & sequence for Information Literacy in New Hope-Solebury School District, New Hope, Pennsylvania

K-12 Information Literacy Scope & Sequence

The following scope and sequence of Information Literacy Skills were assembled by the New Hope Solebury School District librarians after reviewing a variety of professional sources. These sources included the Pennsylvania Department of Education’s Library Tool Kit for Implementing Information Literacy in Schools, The Pennsylvania Guidelines for School Library Programs 2005, the Big Six, and numerous websites based on other states K-12 Information Literacy Skills sets.

Target benchmarks for each skill are indicated with a “C” for competence. This does not mean that the skills will be mastered by all students at the grade level, but rather that most students will be able to consistently perform the listed skill by the end of the given grade level. In each case the “C” for competence was listed for the highest grade in a particular building (2, 6, and 12) to reflect our building configurations and that the skill should be considered a benchmark for students leaving that building. ISTE (International Standards for Technology in Education) also uses the same building level configurations. Our district has already adopted a K-12 technology skill set based on ISTE and PDE standards.

Central to the core of Information Literacy-skills utilized by students is the integration of these skills throughout the subject area curricula of each building. The 2005 Pennsylvania Guidelines for School Library Programs emphasize that “just as the information literacy skills cannot be taught in isolation from the classroom curriculum, neither can these skills become the sole responsibility of the librarian. It takes the entire educational community—the librarian, teachers, administrators, and parents—working together to have students attain the information literacy skills linked to established academic standards.”

Library Awareness Skills | Lifelong Reading Skills | Information Problem Solving

http://www.nhsd.org/Library/litscope.htm
### 3.2 Find information within sources (Continued)

<table>
<thead>
<tr>
<th>Skill Development Codes: I = Introduction  D = Development  C = Competence  R = Review</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C. Information Problem Solving (Continued)</strong></td>
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<tr>
<td>Magazines</td>
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<td>Newspapers</td>
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<tr>
<td>Reference Materials</td>
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<tr>
<td>Atlases</td>
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<tr>
<td>Almanacs</td>
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<tr>
<td>Dictionary</td>
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<td>Encyclopedias</td>
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<tr>
<td>Thesauri</td>
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<td>Phone book</td>
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<tr>
<td>Locates &amp; is able to use - electronic card catalog systems</td>
</tr>
<tr>
<td>Locates &amp; is able to use - Types of electronic resources</td>
</tr>
</tbody>
</table>

### C4 Information Use

#### 4.1 Reads Purposely

- Skims
- Scans

#### 4.2 Extract relevant information - data collection

- Underlines keywords and context clues
- Follows links and layers in electronic sources
- Reads & interprets information
- Gathers information from a variety of sources:

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[http://www.nhsd.org/Library/litscope.htm](http://www.nhsd.org/Library/litscope.htm)
The following scope and sequence of Information Literacy Skills were assembled by the New Hope Solebury School District librarians after reviewing a variety of professional sources. These sources included the Pennsylvania Department of Education's Library Tool Kit for Implementing Information Literacy in Schools, The Pennsylvania Guidelines for School Library Programs 2005, the Big Six, and numerous websites based on other states K-12 Information Literacy Skills sets.

http://www.nhsd.org/Library/litscope.htm
scope & sequence
sample standards
sample populations
sample knowledge
sample activities
cases

SAMPLE STANDARDS
sample standards

http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/AASL_LearningStandards.pdf
sample Standards for the standards 21st-Century Learner

• Inquire, think critically, and gain knowledge.
• Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.
• Share knowledge and participate ethically and productively as members of our democratic society.
• Pursue personal and aesthetic growth.

http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/AASL_LearningStandards.pdf
sample
standards


Information Literacy Competency
Standards for Higher Education
The information literate student:

1. Determines the nature and extent of the information needed.

2. Accesses needed information effectively and efficiently.

3. Evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/AASL_LearningStandards.pdf
The information literate student:

4. Individually or as a member of a group, uses information effectively to accomplish a specific purpose.

5. Understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/AASL_LearningStandards.pdf
The information literate student constructs and implements effectively designed search strategies.

**Outcomes Include:**

b. Identifies keywords, synonyms and related terms for the information needed

c. Selects controlled vocabulary specific to the discipline or information retrieval source

http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/AASL_LearningStandards.pdf
The information literate student constructs and implements effectively designed search strategies.

*Outcomes Include*:

d. Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books)

The information literate student constructs and implements effectively designed search strategies.

**Outcomes Include:**

e. Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameter

http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/AASL_LearningStandards.pdf
sample standards Performance Indicators

- Articulates understanding of subject matter
- Implements process obtaining full-text
STANDARDS
provide the scope to
scope & sequence
Scope & Sequence is about the right knowledge at the right time.
Effective Use of Critical Thinking Activities is about applying the activity for the knowledge to the population at the time under the circumstances.
sample Arcadia University populations

- EN 101 students
- First-year Seminar students
- Research-writing students
- Transfer students
- Capstone students
- Graduate students
- Returning students
- Adjunct faculty members
- Full-time faculty members
In reality, a given individual could be anywhere on the scope and sequence plane.
SCOPE & SEQUENCE

transcends educational level
### Skill Development Codes:  
I = Introduction  D = Development  C = Competence  R = Review

#### C. Information Problem Solving (Continued)

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</tbody>
</table>

### C4 Information Use

#### 4.1 Reads Purposely
- Skims  
- Scans  

#### 4.2 Extract relevant information - data collection
- Underlines keywords and context clues  
- Follows links and layers in electronic sources  
- Reads & interprets information  
- Gathers information from a variety of sources:
Effective Use of Critical Thinking Activities

is about applying

the activity

for the knowledge

to the population

at the time

under the circumstances
A bit more history, professional ancient history...
Standard Use of Average Thinking Activities

is about applying the activity for the knowledge population to a time under different circumstances.
Effective Use of Critical Thinking Activities is about applying the activity for the knowledge to the population at the time under the circumstances.
Circumstances

Sample

Sample Standards

Sample Populations

Sample Knowledge

Sample Activities

Sample Cases

Scope & Sequence
sample circumstances

- Life status
- Degree of subject mastery
- Attitude
- Proximity
- Instructional frequency
- Learning style
- Demands of assignments
- Level of information literacy
Do you see a problem?
Effective Use of Critical Thinking Activities is about applying the activity for the knowledge to the population at the time under the circumstances.
SAMPLE ACTIVITIES

- scope & sequence
- sample standards
- sample populations
- sample knowledge
- sample activities
- cases
sample activities

- Lower level population: Focused associations
- Lower level population: 6 degrees of Kevin Bacon
- Upper level population: Focused conversations
- All levels: Lecture about personality of search interfaces
- All levels: Lab time with JIT elaboration
scope & sequence

sample standards

sample populations

sample knowledge

sample activities

cases
cases

• Education graduate student: Effort on learning styles and self-improvement. Necessity to NOT “higher education”

• Biology senior: Effort on what happens during suffocation. Issue of wrong knowledge base and wrong period of time for the knowledge base. Necessity to employ alternate terms. Necessity to utilize supplemental database (WorldCat).

• All students: Necessity to see research and available resources at a higher level.
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