

NOTES

Inventory of Instruments of Critical Thinking

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Since about 1983 the venerable construct of critical thinking has become an educational juggernaut. See Follman (1987) for an overview of this recent critical thinking activity, and also Follman (1991) for a correlative overview of the recent critical reading activity.

A main plank in the rationale for enhancing critical thinking of children in general is the finding that 80% of third graders, more than half of seventh graders, and 36% of eleventh graders scored minimally or inadequately when reading critically (Vobejda). More specifically, of 36,000 public and private school students, less than 1% of third graders, 8% of seventh graders, and 23% of eleventh graders performed at the highest level on reading performance on the National Assessment of Educational Progress.

The purpose of this note is to inventory the contemporary critical thinking instruments. These instruments are identified for possible use in psychometric investigations of the nature and definition of the construct of critical thinking and especially for use as dependent variables in studies to determine the efficacy of independent variables purported to enhance people's critical thinking.

For compilations of early critical thinking tests see *An experiment in the development of critical thinking* (Glaser, 1941), *Education for effective thinking* (Burton, Kimball & Wing, 1960), and a list of 30 instruments (Ness, 1967).

More recent compilations of critical thinking tests have been reported by Stewart (1979), Baker (1981), Ennis (1986), Follman (1987), Norris & Ennis (1989), Facione (1989; 1990, 1992), Facione & Facione (1992), among others.

Baker (1981) compiled the contemporary critical thinking tests and identified 26, six described as then currently available and 20 as published but not readily available. The six currently available tests were: *Watson-Glaser Critical Thinking Appraisal*; *Cornell Critical Thinking Test Level Z*; *Test of Thematic Analysis*; *Analysis of Arguments*; *College Outcomes Measures Project*; and

COMP-Objective Test (CACTP). The 20 not readily available tests were: *Creative Writing on a Social Problem*; *Charley Brown test with no name*; *A Test of Critical Thinking in the Social Sciences*; *A Test of Critical Thinking, Form G*; *Inventory of Social Understanding I*; Charles Logan unnamed test; *Testing of Study Skills and Critical Thinking Section II*; *Testing of Study Skills and Critical Thinking Section V*; *Test of Study Skills and Critical Thinking VI*; *Testing of Study Skills and Critical Thinking Section XIII*; *Testing of Study Skills and Critical Thinking Section XV*; *Testing of Study Skills and Critical Thinking Section XVI*; *Testing of Study Skills and Critical Thinking XVII*; *Social Issues Analysis Test 1*; *Social Issues Analysis Test 2*; *Social Issues Analysis Test 3*; *Social Issues Analysis Test 4*; David Simon unnamed test; and *Interpretation of Data Test*.

Follman (1987) overviewed the contemporary critical thinking tests, and, in addition to the tests above, identified: *The Curry Test of Critical Thinking* (Landis & Michael, 1981); *The New Jersey Test of Reasoning*; *The Whimbey Analytical Skills Inventory* (Whimbey, 1985, October); a history-social studies with critical thinking skills test (Kneedler, 1986); the *Group Assessment of Logical Thinking* (Yeany, Yap & Padilla, 1986); *The Ennis-Weir Critical Thinking Essay Test* (Ennis, 1986); and state developed tests including one to be administered to fourth graders in Michigan (Ranbom, 1985, March 6), one in New Jersey (Whimbey, 1985, October), and one in Connecticut (Sternberg & Baron, 1985).

Baron (1987) compiled six multiple choice and one essay "tests that could be called critical thinking tests, at least in part." Tests not previously mentioned above include *Basic Skills for Critical Thinking*; *Cornell Critical Thinking Test, Level X*; and *Ross Test of Higher Cognitive Processes*.

A contemporary overlapping inventory of instruments was prepared by Kennedy, Fisher & Ennis (1987). They classified the tests into two types, multi-aspect, and aspect-specific. The multi-aspect tests were: *Cornell Critical Thinking Test Level X*; *Cornell Critical Thinking Test Level Z*; *New Jersey Test of Reasoning Skills*; *Ross Test of Higher Cognitive Processes*; *Watson-Glaser Critical Thinking Appraisal*; and *Ennis-Weir Critical Thinking Essay Test*. The aspect-specific tests were: *Cornell Class-Reasoning Test, Form X*; *Cornell Conditional-Reasoning Test, Form X*; *Logical Reasoning*; and *Test of Enquiry Skills* (Australia). Kennedy et al. considered their list comprehensive. Another more recent Ennis iteration was by Norris & Ennis (1989) which included *Judgment: Deductive Logic and Assumption Recognition* and *Test on Appraising Observations* as well as those above.

One of several more recent critical thinking instruments, *The Test on Appraising Observations*, measures the ability to evaluate statements of observations, was constructed by Norris (1988). The National Center for Research to Improve Postsecondary Teaching and Learning (NCRIPAL) (1989) identified the *Chickering Critical Thinking Behaviors Inventory* in which students report

the percent of time spent on memorizing, interpreting, analyzing, synthesizing, and evaluating. NCRIPAL also identified several open-end measures of thinking: *The Measure of Intellectual Development*, a subjective measure of decision making, careers, and classroom learning; *The Analysis of Argument*; *The American College Testing Program's College Outcome Measures Program*, a test of reasoning; and more importantly the *Reflective Judgment Interview (RJI)*, in which an interviewer asks a student questions about an ethical dilemma presented orally and in writing. The *RJI* is currently receiving considerable research attention. Another less formal system was developed by the Maryland Center for Thinking Studies (METS) for younger pupils. METS uses taped interviews primarily. Also used are performance assessment matrices, debriefing wheels, think logs, student journals, parent and student questionnaires, classroom observations, teacher diaries, and structured faculty debriefing sessions (Worsham, 1991).

Facione (1990) assembled a panel of critical thinking experts to identify critical thinking skills and sub-skills. The panel also identified a number of additional contemporary critical thinking tests including: the *Test on Appraising Observations 1983*; The American College Testing Program 1988 *Collegiate Assessment of Academic Proficiency* which included a critical thinking measure; the *Valett Inventory of CT Abilities*; *Test of Cognitive Skills 1981*, McGraw Hill; subscores on inference and evaluation and logical evaluation in the *Basic Skills Assessment 1977-81* McGraw Hill; *Test of Problem Solving 1984* Linguist System; *Corrective Reading Mastery Test 1980*, SRA; *Ball Aptitude Battery*. Facione also included a useful bibliography of critical thinking assessment references.

The Wisconsin Research and Development Center for Cognitive Learning has compiled an inventory of 37 measures of cognitive abilities at the intermediate grade level.

In order for the reader to have an appreciation of the scientific significance of tests of critical thinking see Follman (1994a) for an exhaustive compilation of critical thinking correlations, some eight pages in excess of 700 coefficients, the nomothetic network of critical thinking research relationships. Also see Follman (1994b) for a companion compilation of correlations of the nomothetic network of the related, but much smaller, literature of the construct of critical reading.

Finally, starting on the next page, is a list of critical thinking tests, clienteles, and references. The tests are sorted more or less into tests readily available or tests not readily available. Also, examination of the references herein will indicate additional measures of critical thinking which are not included herein primarily because of the difficulty in obtaining them.

CRITICAL THINKING TESTS
Tests Readily Available

<i>TEST</i>	<i>CLIENTELE</i>	<i>REFERENCE</i>
Academic Profile Test (ETS)	G 15+	Facione (1989)
Analysis of Arguments		Baker (1981)
Assessing Higher Order Thinking Skills		Arter & Salmon (1987)
Basic Skills for Critical Thinking	G 9-12	Baron (1987)
California Critical Thinking Skills Test: Form A	College	Facione (1992)
California Critical Thinking Skills Test: Form B	College	Facione (1992)
California Critical Thinking Disposition Inventory		Facione & Fac. (1992)
Cognitive and Analytical Skill Test	College	Chovan & McG. (1985)
College Outcomes Measures Project		Baker (1981)
Collegiate Assessment of Academic Proficiency	College	Pascarella et al. (1994)
COMP-Objective Test (ARTP)		Baker (1981)
Cornell Class Reason. Test Form X	G 4-14	Kennedy et al.(1987)
Cornell Cond. Reason. Test Form X	G 5-11	Stewart (1979)
Cornell Critical Thinking Test Level X)	G 4-14	Baron (1987)
Cornell Critical Thinking Test Level Z	Adults	Baker (1981)
Critical Thinking Skills (History/Soc.St.)	G 8	Kneedler (1986)
Curry Test of Critical Thinking		Landis& Michael (1981)
Developing Cognitive Abilities Test	College	Torres & Cano (1995)
Ennis-Weir Argumentation Test		Facione (1990)
Ennis-Weir Critical Thinking Essay Test	G 7-16+	Ennis(1986)
Group Assessment of Logical Thinking		Yeany, Yap & Padilla
Graduate Record Examination	G 16+	Facione (1989)
Judgment: Ded. Log. & Ass. Recog.	G 7-12	Norris & Ennis (1989)
Logical Reasoning	G 9+	Kennedy et al. (1987)
MAP Critical Thinking	G 3-5, 6-11	Moss & Koziol (1991)
Maryland Center for Think. Studies System	G 4-9	Worsham (1991)
New Jersey Test of Reasoning Skills	G 4-16+	Follman (1987, Summer)
Preference for Cognitive Complexity Test	College	Chovan & McG. (1985)
PRIDE I (reason critically in social work)	University	Gibbs et al. (1995)
Reflective Judgment Interview	G 9+	Stewart (1979)
Ross Test of Higher Cognitive Processes	G 4-College	Baron (1987)
Soloff & Houtz	G K-4	Follman (in progress,c)
Test of Problem Solving 1984	G 6-12	Facione (1990)
Test of Thematic Analysis		Baker (1981)
Test on Appraising Observations	G 7-14	Norris (1988, Fall)
Valett Inventory of CT Abilities	Age 4-5+	Facione (1990)
Watson-Glaser Critical Thinking Appr.	G 9+	Baker (1981)
Whimbey Analytical Skills Inventory		Whimbey (1985)

Tests Not Readily Available

<i>TEST</i>	<i>CLIENTELE</i>	<i>REFERENCE</i>
A Test of Critical Thinking Form G	G 9+	(author)
A Test of Crit. Think. in the Soc. Sci.		Baker(1981)
ACTP Collegiate Ass. of Acad. Prof.	G 13+	Facione(1990)
Basic Skills Assessment 1977-81	Adults	Facione(1990)
Ball Aptitude Battery		Facione(1990)
Charles Logan unnamed test		Baker(1981)
Charley Brown unnamed test		Baker(1981)
Corrective Reading Mastery Test 1984 (SRA)		Facione(1990)
Creative Writing on a Social Problem		Baker(1981)
David Simon unnamed test		Baker(1981)
Interpretation of Data Test	G 9-12	Stewart(1979)
Inventory of Social Understanding I		Baker(1981)
Meno	Adults	Cambridge(1992)
Near Transfer Critical Thinking Test		Edelman & Hudgins
Pearson Hiram Test of CT		Stewart(1979)
Recognizing Reliable Observations		Stewart(1979)
Smith-Sturgeon Conditional Reas.	G 1-3	Ennis et al. (1969)
Social Issues Analysis Test 1		Baker(1981)
Social Issues Analysis Test 2		Baker(1981)
Social Issues Analysis Test 3		Baker(1981)
Social Issues Analysis Test 4		Baker(1981)
Test of Cognitive Skills 1981	G 2-12	Facione(1990)
Test of Enquiry Skills (Australia)	G 7-10	Kennedy et al. (1987)
Test. of Study Skills & Crit. Th. II		Baker(1981)
Test. of Study Skills & Crit. Th. V		Baker(1981)
Test. of Study Skills & Crit. Th. VI		Baker(1981)
Test. of Study Skills & Crit. Th. XIII		Baker(1981)
Test. of Study Skills & Crit. Th. XV		Baker(1981)
Test. of Study Skills & Crit. Th. XVI		Baker(1981)
Test. of Study Skills & Crit. Th. XVII		Baker(1981)
Uncritical Inference Test	G 12+	Stewart(1979)

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