RED RIVER COLLEGE
OF APPLIED ARTS, SCIENCE AND TECHNOLOGY

C. THINK CRITICALLY Overview

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Red River College graduates think critically to solve problems, make informed decisions, and innovate. They ask questions, identify issues, organize information, and discriminate between alternatives.

1. Definition/description.

Critical thinking is "a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts and events before accepting or formulating an opinion or conclusion."[1] It requires a dynamic and analytic process of making purposeful, reflective and fair-minded judgments and decisions about what to believe or what to do.

A statement by Michael Scriven & Richard Paul, presented at a 1987 conference, provided a definition of Critical Thinking as defined by the National Council for Excellence in Critical Thinking. In part, it said "Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness. It entails the examination of those structures or elements of thought implicit in all reasoning: purpose, problem, or question-at-issue; assumptions; concepts; empirical grounding; reasoning leading to conclusions; implications and consequences; objections from alternative viewpoints; and frame of reference. Critical thinking - in being responsive to variable subject matter, issues, and purposes - is incorporated in a family of interwoven

modes of thinking, among them: scientific thinking, mathematical thinking, historical thinking, anthropological thinking, economic thinking, moral thinking, and philosophical thinking"[2]

Critical thinking has also been defined as " that mode of thinking - about any subject, content, or problem — in which the thinker improves the quality of his or her thinking by skillfully analyzing, assessing, and reconstructing it. Critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking. It presupposes assent to rigorous standards of excellence and mindful command of their use. It entails effective communication and problem-solving abilities, as well as a commitment to overcome our native egocentrism and sociocentrism.[3]

2. Importance of this competency for academic, personal and professional life.

Learning demands critical thinking. Individuals who are both willing and able to accurately interpret information, analyze problems, see the consequences of the things they are learning, clearly explain their basis for their beliefs and actions, critique new ideas and evaluate assumptions are strong learners.

The quality of our life and that of what we produce depends on the quality of our thought. Critical thinking is the route to ongoing development as an individual and a member of a team, organization and society. There can be no positive progress without critical thinking to ensure continuous improvement and adaptability. Critical thinking, including reflective thinking and assessment of the past and current, along with creativity and looking to the future, is what generates innovation. Successful innovation depends on critical thinking as a key component.

The work of Edward Glaser from the 1940's is still recognized and referenced today. In a study about critical thinking in education in 1941, Edward Glaser defined critical thinking as follows "The ability to think critically, as conceived in this volume, involves three things: (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences, (2) knowledge of the methods of logical inquiry and reasoning, and (3) some skill in applying those methods. Critical thinking calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends. It also generally requires ability to recognize problems, to find workable means for meeting those problems, to gather and marshal pertinent information, to recognize unstated assumptions and values, to comprehend and use language with accuracy, clarity, and discrimination, to

interpret data, to appraise evidence and evaluate arguments, to recognize the existence (or non-existence) of logical relationships between propositions, to draw warranted conclusions and generalizations, to put to test the conclusions and generalizations at which one arrives, to reconstruct one's patterns of beliefs on the basis of wider experience, and to render accurate judgments about specific things and qualities in everyday life."[4]

Critical thinking is really a 'way of thinking' that we are encouraging as becoming a habit. It involves questioning 'the why are things the way they are', and whether they might be improved or adapted. The ultimate outcome is whether we are willing to think and act differently on the basis of our critical thinking and related results. Critical thinking can lead to positive change and progression in individuals, in the workplace, and in communities.

3. Listing of <u>levels</u> of *Critical Thinking* along the continuum of development at RRC.

<u>Level 1</u> ***Think Critically***
Graduates apply independent analysis and logical deduction to make reasoned and ethical decisions.

<u>Level 2</u> ***Think Critically through Collaboration***
Graduates exchange ideas, evaluate points of view, question perspectives, and check assumptions to reach logical conclusions. They work cooperatively to identify issues and evaluate alternatives against criteria and standards

<u>Level 3</u> ***Apply Critical Thinking to Global Issues***
Graduates apply critical thinking and research skills to global issues. They create and innovate to support sustainable practices for community and global citizenship.

4. <u>Interaction/connectivity</u> with other college-wide learning outcomes.

Critical thinking needs to be supported and integrated throughout all the RRC college-wide learning outcomes. "Critical thinking is an instrumental competence that depends on proficiency in other basic cognitive competences such as reflective thinking, logical thinking, analytical thinking, systemic thinking, practical thinking and team thinking. It is necessary to develop critical thinking in order to be able to recognize the conditions under which a given set of ideas can be transformed into knowledge or beliefs that will have a decisive influence on decisions and actions, as well as the way in which people construct their own mentalities based on ideologies. Therefore, it is an essential basis for developing individual interpersonal competences (self-motivation, adaptability and ethical sense) and social

competences (interpersonal communication, teamwork, and conflict management). Finally at the systemic level, critical thinking enables people to revise, question and improve social and organizational practices (quality orientation, achievement orientation and enterprising spirit)."[5]

Critical thinking is the basis for personal development and learning, and as such, should be integrated into all learning. As a 'way of thinking', it should be taught and encouraged in connection with all other learning. It has a strong connection to problem-solving, decision-making and innovation.

5. Rubric for mastery of 'Think Critically' and incorporation of the learning outcome in programs.

See rubric chart.

a. The rubrics provide the indicators for the outcome, plus a rubric descriptor for each indicator at each level.

b. The rubrics provide benchmarks for programs to reference their own program outcomes when developing or revising a program.

c. The rubrics provide detailed information for faculty to incorporate into their program/course assessment rubrics for student assessment. They are not intended for grading individual students.

d. The rubrics also provide a measurement for the evaluation of program and college-wide attainment of meeting the stated college-wide learning outcomes – on a composite basis.

6. Faculty Resources.

Faculty resources have been gathered to assist faculty in:

a. Increasing their knowledge about learning outcomes at various levels (institutional outcomes, program outcomes and course outcomes), and of how programs and courses relate to institutional outcomes.

b. Reflecting on the meaning and indicators of each of the college wide learning outcomes.

c. Referencing some sample student assessment rubrics related to the outcome (competency) or some component of it. These resources may assist faculty to develop their own course rubrics for assessment of students.

d. Accessing some teaching resources related to the outcome (competency) or components of it.

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[1] Critical Thinking VALUE rubric. AACU

[2] From "The Critical Thinking Community" website at http://www.criticalthinking.org/pages/defining-critical-thinking/766

[3] Richard Paul and Linda Elder. *The Miniature Guide to Critical Thinking Concepts and Tools*, Foundation for Critical Thinking Press, 2008. Accessed from http://www.criticalthinking.org/pages/defining-critical-thinking/766

[4] Edward M. Glaser, An Experiment in the Development of Critical Thinking, Teacher's College, Columbia University, 1941. Accessed from at http://www.criticalthinking.org/pages/defining-critical-thinking/766

[5] *Competence-based Learning. A Proposal for the assessment of generic competencies. Tuning*. University of Deusto 2008. Sanchez & Ruiz (Eds.)

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	Levels		
Competency Levels	**1. INTRODUCTORY learning** RRC graduates will be able to…	**2. COLLABORATIVE learning** RRC graduates will be able to…	**3. INTEGRATIVE learning** RRC graduates will be able to…
Level descriptors	**Level 1** ***Think Critically*** Graduates apply independent analysis and logical deduction to make reasoned and ethical decisions.	**Level 2** ***Think Critically through Collaboration*** Graduates exchange ideas, evaluate points of view, question perspectives, and check assumptions to reach logical conclusions. They work cooperatively to identify issues and evaluate alternatives against criteria and standards.	**Level 3** ***Apply Critical Thinking to Global Issues*** Graduates apply critical thinking and research skills to global issues. They create and innovate to support sustainable practices for community and global citizenship.

Notes:

Indicators (on table below):

- Indicators provide examples of the types of behaviours expected to demonstrate the competency and the level.
- These indicators need to be viewed as defining the broad college-wide outcomes - but also form the basis from which programs can identify more specific and detailed expectations of the outcome related to the field and their specific program. Discipline specific aspects of the outcome may be greatly enhanced and detailed in program outcomes.
- Programs/courses do not need to include all the indicators of a particular level (and indeed may have their own additional indicators for their program or course based outcomes), but it is expected that they would incorporate the majority of the indicators of the CWLO at that level.

Indicators	Level 1 *Think Critically*	Level 2 *Think Critically through Collaboration*	Level 3 *Apply Critical Thinking to Global Issues*
1. Issue identification and information/ evidence	a. State issue/problem and describe from own perspective. b. Use a range of information sources in ethical manner. c. Validate information sources.	a. State issue/problem and describe so others can enhance issue identification and add perspectives in collaborative fashion. b. Research a range of information, sources and perspectives within the sector or community using valid research and inquiry techniques. c. Validate concepts, ideas and information through questioning and collaboration.	a. Explain issue/problem in detail. Clearly define scope of research, issue or question, with community and global considerations and implications noted where applicable. b. Identify needed information and locate and select efficiently and effectively from valid, current and appropriate sources. c. Use good research skills to validate best information to be used for the purpose.
2. Analysis & perspectives	a. Identify own and others' assumptions.	a. Question assumptions.	a. Systematically and methodically discuss and analyze own and

	b. Explore alternatives with open mind.	b. Identify several relevant contexts and perspectives when analyzing and presenting position. Exchange information with others to seek and discuss different points of view.	others' assumptions and information in complex and unique situations and issues. b. Analyze strengths and weaknesses of optional opinions and information through use of evidence to gain maximum value.
3. Evaluation	a. Formulate and pose appropriate questions, reflect on assumptions and facts, and form reasonable and ethical judgments.	a. Evaluate alternatives against relevant criteria, guidelines and standards of own profession/occupation, using various types of critical reasoning and considering implications of alternatives.	a. Evaluate own and others' judgment and alternatives in systematic and constructive manner using logical and critical thinking process. Analyze how parts of a whole interact with each other to produce overall ethical outcomes in complex systems.
4. Outcomes, decisions, problem-solving	a. Link decisions, recommendations and solutions to problems or issues and information reviewed.	a. Link logical conclusion to clearly described range of information or research topic, including various or competing perspectives or judgments. b. Clearly describe outcomes and implications related to self and	a. Provide strong rationale for outcomes or decisions. Develop conclusions, and solutions to problems or research topic to create new ideas, address emerging issues, and contribute productively and ethically to the community. b. Use critical thinking to support sustainability for community and

		group.	global citizenship.

Terminology usage in rubric

Analysis: the ability to examine, organize, classify, categorize, differentiate, and prioritize variables.

Community: people or groups with a common interest who collaborate to share ideas, information and other resources.

- People or groups implies formal or informal
- "Common interest who collaborate" – self-organized network is implied
- Virtual community is included as there is no physical component in the definition
- Community members can play an active or passive role

Critical reasoning: the ability to be able to compare, weigh or evaluate information against other sources and one's own knowledge.

Evaluation: the ability to assess the credibility, significance, and applicability of sources of information necessary to support conclusions.

Global citizen: a global citizen is aware of the interdependent nature of the world, understands how local and global issues affect people around the world, and commits to taking actions to create a more just and sustainable world.

Inquiry: examination or research into facts, principles, information or issues. It may augment knowledge, resolve doubt or solve a problem.

Judgment: the evaluation of evidence to make a decision.

Questions and questioning (sometimes referred to as 'mindware'): are critically important human technologies that might enable people to solve problems, make smart decisions and support a sustainable world.

Sustainability: Meeting the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability is an evolving process to improve the economy, the environment and human health & well-being for the benefit for current and future generations. Sustainability requires a long-term perspective, a systems approach (systems that connect space and systems that connect time), fairness, and creativity & innovation.

Key References for *Think Critically* Rubric

- Critical Thinking and Information Literacy VALUE Rubrics. AACU. http://www.aacu.org/VALUE/rubrics/
- Competence-based learning: A proposal for the assessment of generic competences. Tuning. University of Deusto. Sanchez & Ruiz (Eds) (Critical thinking, reflective thinking) 2008
- Resources from The Foundation for Critical Thinking at www.criticalthinking.org
- 21st Century Skills. P21 Framework Definitions Dec 2009 http://www.p21.org/our-work/p21-framework