MULTIGOGY

PART II: Philosophy of Education

Theoretical Underpinnings of Multigogy® & its Instructional Design Framework

SCORE BASICS for LTC[6] and CREDS

By

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SCORE BASICS for TLC^6 and CREDS

Multigogy® is an educational philosophy with a framework for the design of brain-based teaching and learning. Multigogy's two major strategies (original 1995) are summarized in the mnemonic: "Stripping *is Hard and Scoring Is Easy, so SCORE the BASICS". SCORE the BASICS* is a mnemonic to organize principles of brain operations and adult education, relevant to teaching for learning, into a memorable and learnable format. When Multigogy is updated with 21st Century Learning competencies, the core remain the same (mastery of concepts' application through critical thinking strategies) and characteristics of human potential learning outcomes emerge. Theses characteristics are *TLC^6 and CREDS* in the mnemonic/instructional riddle (cognitive preset) *SCORE the BASICS for TLC^6 and CREDS.* Originally, Multigogy was developed with its roots in andragogy (teaching of adults), informal education, and professional development. The continual question is: does this work for youth as well as adults and, if yes, under what conditions and when and why?

Within this paper, the components of *SCORE the BASICS for TLC[6] and CREDS* are correlated to concepts in cognitive psychology, learning theories, 21st Century Learning Competencies, and Internet Communications and Technology Competencies (ICT[3]). During previous publications (for ease of referencing), *SCORE* and *BASICS* were referenced to one Introductory Psychology text; Elliott's Educational Psychology (1996)[1]. This original sourcing scheme remains in this version with additional references for *TLC[6] and CREDS* cited at the end of this document.

These correlations and references are not intended to be all-inclusive nor mutually exclusive; only a representative and preliminary list to encourage further thought and development. Many of the older works are classics and form foundations for current research. This is a work in progress. Please share your thoughts and references, by sending an email to dlenaghan@multigogy.com or upcoming blog on www.multigogy.com.

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[1] Elliott, S., ed. (1996). *Educational Psychology: Effective Teaching, Effective Learning* (2nd ed.). New York: The McGraw-Hill Companies, Inc.

TABLE 1: Multigogy's Instructional Design

MULTIGOGY *Instructional Design Should..*	THEORETICAL FOUNDATIONAL CONCEPTS & CHARACTERISTICS *Because Learners are..*
S Show It	Caine's hemispheric lateralization; Pressley's & Harris's strategies for comprehension; Silverman's visual-spatial learner; Armstrong's multiple intelligences' application; Thornes' mapping
C Chunk It	Bruner's 3 types of concept organizers (conjunctive, disjunctive and relational); Miller's magical seven plus or minus two; Hart's brain pattern-matching; Elliott's interference
O Operate It	Bruner's discovery learning; Sherry & Schachter's forgetting as disuse; Warschauer's active critical learning principle; Silverman's visual-spatial learner; Armstrong's multiple intelligences' application; Hannaford's brain gym; Papert's computers and constructivism; Lucas Foundation's project based learning; Giles' service learning
R Review It	Ausubel's advance organizer; Pressley & Harris's strategies for comprehension; Elliott's reminiscence; Hannaford's brain gym; Giles' service learning
E Emotionalize It	Bruner's discovery learning; Sherry & Schachter's forgetting as disuse; Warschauer's active critical learning principle; Silverman's visual-spatial learner; Armstrong's multiple intelligences' application; Hannaford's brain gym; Papert's computers and constructivism; Lucas Foundation's project based learning; Goleman's emotional intelligence

Table 1 References: From Elliott, S., ed. (1996). *Educational Psychology: Effective Teaching, Effective Learning* (2nd ed.). New York: The McGraw-Hill Companies, Inc. (If not listed below from Elliott, the source is referenced at the end of this paper.)

Caine and Caine's hemispheric lateralization principle = material presented in visual form develops creative understanding (pp.250-252).

Pressley & Harris's strategies for increasing comprehension = summation, imagery, and prior knowledge activation (p. 266).

Bruner's 3 concept organizers = people organize concepts in three ways: conjunctive-presence of several attributes; disjunctive-a single attribute; and relational-units share some characteristic with each other (p. 247).

Miller's magic seven = students are able to efficiently learn lists of seven items plus or minus two (p. 247).

Hart's brain pattern-matching = brain is natural pattern matcher and nature of this matching depends on the experiences of the individual.

Elliott's interference = forgetting is a function of interference. Students learn items at the beginning and end of a list easier and retain them longer (p.268).

Bruner's discovery learning = student's rearrange material to gain insights to solve problems (p. 247).

Sherry & Schachter's forgetting as disuse = students will forget an item unless it is used. Also referred to as the Trace Decay Hypothesis by Ebbinghause (p. 266).

Ausubel's advance organizer = general overview of new learning should occur before presenting new material (p. 246).

Pressley & Harris's comprehension strategies = summation, imagery, and prior knowledge activation (p. 266).

Elliott's reminiscence = after rest memory improves (p. 268).

Wlodkowski's perception motivation = students' perceptions, values, personalities and judgements ultimately determine their motivation (p. 331).

Corno's control of emotions = students acquire personal responsibilities for learning and control of emotions that aid or distract from motivation and learning (p. 334).

TABLE 2: Multigogy's Learners' Characteristics

MULTIGOGY *Learning Should..*	THEORETICAL FOUNDATIONAL CONCEPTS & CHARACTERISTICS *Because Learners[2] are..*
B Builders on Previous Learning	Thorndike's law of readiness; Behaviorists' principles of extinction; Ausubel's meaningful learning; Pressley & Harris's strategies for comprehension; Tharp's contextualized instruction; Warschauer's bottom-up basic skills principle; Gregorc's and Tobias' dominant perception and ordering principle
A Active Learners	Bruner's discovery learning; Warschauer's and other's scaffolding principle; Silverman's visual-spatial learner; Armstrong's multiple intelligences' application; Hannaford's brain gym; National Council of Research's science of learning
S Solution Seekers	Luria's first stage of thinking process; Sternberg's critical thinking; Warschauer's practice principle and probing principle; Giles' service learning
I Independent Individualizers	Piaget's adaptation, assimilation and accommodation; Piaget's schema; Silverman's visual-spatial learner
C Connection Seekers	Erikson's and Levinson's stages of adult development; Bandura social cognitive theory; Brophy's student response; Slavin's cooperative learning; Warschauer's multiple routes principle; Friedman's interconnected world; Gardner's virtues and challenges; Cuban's social capital and technology; Wilson's consilience
S Self-Esteem/Success Oriented	Erikson's self-esteem; Skinner's & Behaviorists' reinforcement; Bandura's self-efficacy; McClelland's need achievement; Warschauer's achievement; Bascomb's new cool; Wlodkowski's affect; Clemes' self-esteem

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[2] **Originally based on Knowles' Andragogy Characteristics of Adult Learners**

Table 2 References: From Elliott, S., ed. (1996). *Educational Psychology: Effective Teaching, Effective Learning* (2nd ed.). New York: The McGraw-Hill Companies, Inc. (If not listed below from Elliott, the source is referenced at the end of this paper.)

Thorndike's Law of Readiness = satisfaction or frustration in learning is related to learner's readiness to learn (p. 202).

Behaviorists' principles of extinction = must unlearn previous learning and relearn new learning (pp. 203-205).

Ausubel's Meaningful Learning = learning will occur when material presented relates to what students' previous knowledge (p. 245).

Pressley's & Harris' strategies for comprehension = summaries, question and answer sessions, self-questioning and periodic review enhance learning.

Thrap's contextual instruction = student's personal experiences are used to introduce new material (p. 274).

Bruner's discovery learning = students rearrange material to gain insights to solve problems (p. 247).

Luria's first stage of thinking = people are motivated to solve a problem for which there is no immediate solution (p. 249).

Sternberg's critical thinking = the use of mental strategies to solve problems (p. 280).

Piaget's adaptation = people take in new information and change it to make it theirs; assimilation and accommodation (p. 84).

Piaget's schema = individuals create inner representations of experiences (p. 83).

Erikson's and Levinson's stages of development = people have a basic need to relate to other people throughout life. During each stage, the characteristics of these relationships change (pp. 121-123).

Bandura's social cognitive = we learn from observing others (p. 216).

Brophy's student responses = students like tasks which allow interactions with the teacher and/or students (p. 336).

Slavin's cooperative learning = students enjoy and succeed when they learn together (p. 354).

Skinner's and Behaviorists' positive reinforcement = positive reinforcement is more effective than negative (pp. 209-211).

Bandura's self-efficacy = students' beliefs about achievement will affect achievement (p. 218).

McClelland's need achievement theory = people seek challenging and moderately difficult tasks and become bored if it is too easy and are not constantly praised (p. 337).

TABLE 3: Multigogy and 21st Century Learning Skills[3]

Multigogy's TLC[6] *Paradigm:* *Learners Should..*	*Theoretical FOUNDATIONAL Concepts & Characteristics Develop Skills, Knowledge and Attitudes in..*
TL Technology Literacies: media, information and digital	Tapsott's net generation; McLuhun's media message; Power's disconnect; Healy's computer reading; Durson's multimodal learning characteristics; ISTE and ICT[3] standards
C Content Mastery	Carr's shallows; Power's disconnect; Cuban's technology in schools; ISTE and ICT[3] standards; Sorden's multimedia design
C Collaboration	Siedman's how; Wadsworth's constructivism; Thornes' co-operative learning; Sylwester's plasticity and neural connectors; Edutopia's student engagement: Lucas Foundation's learning in digital age
C Communications	Byham's zapp; Power's disconnect; ISTE & ICT[3] standards; Edutopia's student engagement; Tapscott's wikinomics
C Critical Thinking	Carr's shallows; Thornes' questioning; Power's disconnect; Cuban's technology in schools; Giles' service learning
C Citizenship	Tapscott's net generation; UN's sustainable development; Service Learning; Gardner's truth and goodness; Giles' service learning
C Career Preparation	Seidman's how; Gladwell's outliers; Gardner's ways of thinking; Cuban's technology in schools; Tapscott's wikinomics

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[3] **Sources: Partnership for 21st Century & ISTE**

TABLE 4: Multigogy's Learner's Ideals[4]

Multigogy's Learners Ideals *Education Should Produce..*	Theoretical FOUNDATIONAL Concepts & Characteristics *Learners With Mindsets That Are..*
C Creative	Silverman's visual-spatial learner; Powers' disconnect; Bascomb's new cool; Gelb's how to think
R Respectful	Friedman's interconnected world; Seidman's how; Wadsworth's constructivism; Giles' service learning
E Ethical	Gardner's virtues and challenges; Cuban's social capital and technology; Seidman's how; Wadsworth's constructivism; Power's disconnect; UN sustainable development; Giles' service learning
D Determined	Claxton's d-mode (deliberative thinking); Bascomb's new cool; Carr's shallows; Gladwell's outliers; Hart sustainable value
S Syngenerist	Warschauer's semiotic principle; ICT literacy panel; Friedman's interconnected world; National Research Council's science of learning; Wilson's consilience; Tapscott's wikinomics

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[4] Gardner's Five Minds for Future

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