Course Syllabus

CT-E11: Assessing Creative Thinking

8-12 June, 1998 • National Institute of Education—Singapore
Dr. Don Treffinger

Course Description. This course provides a broad, introductory overview of goals, purposes, methods, and resources for assessing creativity in educational settings, with emphasis on practical approaches in the classroom setting (rather than individual clinical assessment or research instrumentation). We will review briefly the relation of basic concepts and principles of testing, measurement, and evaluation to creative thinking and the uses and misuses of tests in assessing creativity. The workshop will also include a brief overview of several tests, rating scales, and checklists for creative thinking, and an introduction to the nature and uses of alternative assessment tools, including profiles, performance tasks, rubrics, and portfolios in evaluating creative thinking and creative products at various age levels (childhood through adult). Participants will be asked to consider the implications of these topics for practical application in their own setting.

Instructor. The instructor for this course is Dr. Donald J. Treffinger, of Sarasota, Florida (USA). Dr. Treffinger is President of the Center for Creative Learning, Inc., and also Professor of Education at the University of Sarasota. Previously, he has taught at the Center for Studies in Creativity at Buffalo State College, the University of Kansas, and at Purdue University. He is the author of more than 300 books, chapters, and articles on many aspects of creativity, Creative Problem Solving, and talent development. Dr. Treffinger can be reached by e-mail at dontreff@gte.net and the Center for Creative Learning website is <www.creativelearning.com>.

Textbook. No textbook is required for this course. You will receive an extensive set of handout materials, entitled, "Assessing Creative Thinking." The following books are recommended as valuable supplementary resources for this course:


Daily Agenda

Monday

Objectives

As a result of your participation in this session, you should be able to:

- Define creativity and creative thinking, and describe ways that creative and critical thinking are related.
- Define and distinguish among assessment, testing, measurement, and evaluation.
- Identify at least three important purposes for assessing creativity.
- Describe several myths and misunderstandings about creativity assessment.
- Identify and give illustrations of uses and misuses of creativity tests.
- Define validity, reliability, and usefulness and explain their implications for assessing creativity.
- Identify and give examples of four components of creative productivity and describe their implications for assessment.

Topics of Discussion

- Introductions and course overview, goals, and objectives
- Defining Some Terms
  — What is “creativity”
  — What is “assessment”
- Purposes for creativity assessment
  (“Why assess?”)
- Myths and some misunderstandings about creativity assessment
- Uses and abuses of creativity tests
- Basic principles of assessment and measurement
  — Validity, Reliability, and Usefulness
- The C-O-C-O framework and its implications for assessing creativity
  Personal characteristics; Climate/Blocks

Assignment

- Read: Pages 1-24 in the handout set.
- Bring to class an example of something you consider a “creative product” (or a picture of that product) and be prepared to justify why you believe it is creative.
Tuesday

Objectives

As a result of your participation in this session, you should be able to:

- Define three categories and fourteen criteria for assessing creative products, and identify the implications for education.
- Identify and describe the implications for assessment of a model for teaching and learning creativity.
- Define, distinguish among, and give examples of at least three kinds of creativity assessment resources.
- Describe at least three ways to provide for creativity in teacher-constructed tests, quizzes, projects, or assignments.

Topics of Discussion

- What makes us call a product “creative?”
  - Exercise - Criteria
  - Discussion - Implications for looking at students' work
- Assessment and the Instructional Process
  - Various levels of instruction for creativity
  - Measurement implications of instructional levels
- Assessment resources
  - Tests — Rating Scales — Checklists
- Teacher tests and activities for assessing creative thinking

Assignment

- Read Pages 25-34 in the Handout Set.
- Consider your own fluency, flexibility, originality, or elaboration proficiency in one or more areas. Think about your own “creative strengths profile.”
Thursday

Objectives

As a result of your participation in this session, you should be able to:

- Define metacognition and give examples of several metacognitive skills relating to creativity.
- Identify the role of case studies and practice problems in assessing creativity.
- Define, describe, give examples of, and apply performance tasks and rubrics in assessing creativity.
- Define a profile and explain how assessment and instruction are importantly interrelated in teaching for creativity.

Topics of Discussion

- Metacognitive skills
- Various types of performance tasks
- Constructing and using rubrics
- Case Studies and practice problems
- Introduction to profiling
- Linking assessment and instruction.

Assignment

- Read pages 35-54 in the Handout Set.
- Consider other dimensions of your own creative strengths, and begin to elaborate on your own personal profile. Consider the implications of profiling in your work with students.
Friday

Objectives

As a result of your participation in this session, you should be able to:

• Describe the purposes, and key elements, of portfolios and explain the implications and uses of portfolios in assessing creativity.
• Identify and give examples of four levels of a model for evaluating creativity instruction, and describe the importance and implications of such efforts in relation to Singapore’s national educational mission.
• Create a personal action plan for assessing creativity in your own professional setting.
• Understand better your own personal creative strengths.

Topics of Discussion

• Portfolios
• Evaluating programs to foster creativity: four levels
• Putting the pieces all together: what will you do to assess creativity in your school?
• "Thinking Schools and A Learning Nation"—How will you know if it is working?
• Personal Planning for Action
• Sharing key learnings
• Closing

Assignment

• Read pages 56-69 of the Handout Set
• Complete your personal Creative Strengths Profile.
• Complete your Personal Action Plan.
Assessing Creative Thinking

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Section One: Understanding and Assessing Creativity (Introduction)
Creativity Assessment Purposes

- Helps to recognize and affirm the strengths and talents of individuals and to enable the person to do so, too.

- Expanding and enhancing our understanding of the nature of human abilities and giftedness.

- Provide "baseline" data for assessing individuals or groups, to guide teachers in planning and conducting instruction.

- Pre-post data for group comparisons for research or evaluation.

- Helping instructors, counselors, or individuals to discover unrecognized and untapped resources and talents.

- Provide a language or operational vocabulary for communicating with others about creative talents.

- Helps to remove creativity from the realm of mystery and superstition.

- Advances research and theory.

Source: Treffinger (1987)
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Myths and Misunderstandings About Creativity

Mystery
Creativity as a rare form of genius, possessed only by a few people.

Mystical
An elusive thing, which "evaporates" if you look too closely. (Muse)

Madness
Creative behavior is usually strange, bizarre, weird, or "flaky."

Magical
Creativity involves trickery or sleight of hand, not substance.

Merriment
Creative behavior is totally spontaneous and undisciplined.
Assessing Creative Talent: Some Hypotheses

Don Treffinger

Interest in creativity assessment has waxed and waned through the last three decades. In recent years, however, with growing pressures for evaluation and accountability in education, training, and other areas, interest in creativity tests and assessment of creativity has begun to grow. The inquiries we receive usually begin with, “What test should we use?” There are other, more important starting points, however, such as: “What are you trying to measure? Why? How you do define ‘creativity’ as you would like to assess it? How will you use the results?” Most often, these questions are greeted with a puzzled silence.

It is certain not the case that there are easy answers to those questions. Although we have made considerable progress in our ability to define and assess many specific aspects of creativity, many problems remain to be unravelled. Frequently, we are still learning how to frame the questions better, so research will yield more helpful outcomes for theory and practice. A number of the important issues that need to be discussed, refined into hypotheses, modified, and tested are presented below. Some are expressed as statements, and others as questions; this was a choice based on convenience and ease of expression only. Although we might marshal more evidence in support of some than others, there are fascinating and unanswered dimensions in all of them.

- Creativity assessment is more a reaction to how people function over a period of time than a predesignation or certification of certain individuals’ creativeness.
- Calling someone a “creative person” is a description of his/her accomplishments from an historical perspective.
- Creativity is complex and multi-dimensional, and can be expressed in nearly infinite ways; we should not expect a single test or a single index to account for all its components and manifestations. We must struggle to avoid a creativity test and a “CQ” that might be abused as much as intelligence tests and IQ have been misused.
- Creative talent should not be assessed outside the contexts or environments in which the subjects are expected to function; it is not a simple trait that exists entirely within the mind of personality of the individual alone.
- The operations (or the tools, strategies, or methods) an individual knows and can apply successfully in authentic settings will be important an indication of creative talent than any test score (and may also influence future growth in powerful ways).
- Rather than asking how much or how little creative ability an individual possesses, it would be more productive to ask:
  - In what settings might creativity best be encouraged for this person?
  - What creative strengths does this person demonstrate?
  - How can the person’s creative expressions and accomplishments best be documented or monitored (by the person? by others?)
Although effective problem solving is a function of both creative and critical thinking skills, these may not be equally well developed or preferred in all people.
- There is a need for balanced effort.
- We should also build on individual strengths.
- Group activity and support can be very significant in creative action.

- Certain components of creative behavior may be described differently from internal, rather than external, frames of reference.
- Does creativity really involve "risk-taking," or is that more in the eye of the beholder than the one whose behavior is observed?

- Both playfulness and task intensity are integral for creative effectiveness, but they present assessment challenges, since they are difficult to synthesize or simulate in contrived assessment settings.

- Environmental preferences associated with the lifestyles or "workstyles" of creatively productive people (often assumed to represent basic dimensions or characteristics of creativity) may be better explained by individual differences in learning style.

- Charisma is not the same as substance, nor is it a good long range substitute. An engaging presentation does not assure a solid conceptual or theoretical foundation. Engaging examples, however familiar or realistic, are not substitutes for empirical evidence.

- Creativity is not a "hiding place." It is not a rationale or justification for ineffectiveness, carelessness, lack of effort, or lack of discipline. ("I'm creative, so you shouldn't expect me to be well organized.")

- Calling an instrument an "inventory" or a "checklist" does not provide an exemption from the principles and standards of psychological measurement. Instrument development is a long and rigorous process. Thus, creativity measures, like any other instruments, must be valid, reliable and useful. Beware of fads and homemade instruments. If it has four paws and barks at you, it's probably a dog; saying that you'd prefer to call it a telephone will not relieve you of the responsibility for caring for it properly.

- Telling people about descriptions of themselves (or categories into which you think they fit) can become a mere parlor game—probably foolish, and perhaps even dangerous—unless there is also a significant "so what." Effective assessment should lead to a response that promotes instruction or growth; testing should not become an end in itself.
**Creativity Tests In Education**

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<tr>
<td>Comparing group performances</td>
<td>Cutoff scores for individual students</td>
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<td>Enhance our comprehensive understanding of student abilities, through a profile</td>
<td>Seeking a “C.Q.” instead of “I.Q.” (Substituting a misuse of one test for a misuse of another)</td>
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<tr>
<td>Assessing mastery of basic divergent thinking skills to prepare more complex thinking skills/processes</td>
<td>“Divergent Busywork” Assigning more divergent thinking exercises to students already strong in those skills</td>
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<tr>
<td>Assess pupils’ growth in creative abilities over time</td>
<td>One-shot judgments</td>
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<td>Assist teachers in understanding and identifying dimensions of creativity that are relevant to instruction</td>
<td>Requesting global nominations, without training or experience, to seek ways to sort or label students</td>
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<td>Develop a “data base” for prediction of students’ academic and creative accomplishments</td>
<td>Short-term assessment, relying only on external norms</td>
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<td>Increase teachers’ effectiveness at recognizing and responding to students’ strengths</td>
<td>Searching for “weaknesses” to remediate</td>
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<td>Complex data used as part of our effort to obtain a richer, more comprehensive understanding of the student’s characteristics and needs</td>
<td>“Quick and Dirty” quantification to “justify” inclusion or exclusion decisions</td>
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Some Ways That Creativity Tests Shouldn’t Be Used.....

- Selection of individual students for participation in a single, global program.
- Exclusion of particular students from instructional programs.
- To meet a demand for multiple criteria.
- To establish more hoops through which students must jump during a screening process.

And Some Ways They Can Be Used:

- Baseline data for evaluating enriched instructional opportunities (for MANY students!)
- Baseline data for experimental projects involving group comparisons.
- Creating new instructional opportunities.
- Helping creative people learn to understand and accept their talents.
Specific Uses of Creativity Tests in Education

1. Comparison of experimental/control group performance in studies of effectiveness of teaching strategies or curriculum programs designed to enhance creative thinking.

2. Enhance our *profile of student abilities* by assessing aspects of cognitive functioning not measured by traditional ability and achievement tests.
   a) relating to "diagnostic/prescriptive" assessment
   b) help in understanding "overachievement"

3. Assess a group's mastery of basic divergent thinking skills in preparation for instruction in more complex thinking skills.

4. Evaluate (averages in) pupil growth in creative thinking variables over time (developmental data).

5. Help teachers identify dimensions of creativity that can be translated into instructional procedures/activities.

6. Develop regression equations for forecasting students' academic and creative accomplishments.

7. See variability among students more clearly, hence becoming more effective at recognizing individual differences.

8. Possible indications of mental health status, with clues for effective remedial or therapeutic programming.

9. As part of our comprehensive efforts to assess growth potential and anticipate possible future guidance needs.
Why Not Evaluate Students On Their Level of Creativity?

1. The complexity of the construct of creativity makes such judgments impractical and unrealistic. Creativity can be manifest in a nearly infinite number of ways, in any domain or human expression or productivity. It is not meaningful to say a person is or is not "creative;" we must think about "creative in what...."

2. In any domain, creativity is not a unitary trait or a single variable; rather, it is a complex or multi-dimensional. The construct of creativity involves many variables, working both independently and in interrelated ways.

3. Creativity does not just represent a "kind of person," and it does not just exist "within one's head." It is, instead, "thick and deep," richly textured or contextualized. To understand it, we must consider, in addition to personal characteristics, styles, abilities, interests, and motivations of the individual: the setting or environment; the domain, task, and goals or outcomes; the role of time and history; and a variety of interpersonal factors. In addition, these factors all interact with each other "synergistically."

4. Most of the instruments we have for the creativity-related variables we can define are not well-suited for individual, clinical use. They most often have limited norms. They have limited long-term predictive validity. In addition, the very construct of creativity may not be appropriate for evaluation using instruments for which there are traditional psychometric expectations and assumptions (e.g., evaluating reliability assumes stability in the trait being measured; creative productivity may, in fact, vary substantially).

5. Arguably the most important concern: seeking to sort people into categories (high or low on creativity) asks the wrong question! Most dimensions of creativity, across a broad array of domains or talents, can be nurtured with effective instruction and experience. We would be wise to be more concerned with developing creativity than with sorting people into groups based on some assumed levels or degree of "natural" ability or aptitude. In the long run, educators are more concerned with stimulating productivity than with explaining its origins!

[P. S. Might each of these concerns be equally valid if we substituted the word "giftedness" for the word "creativity?"]
Common Definitions of Creativity

- Making new connections.
- Doing things differently.
- Finding and solving problems that call for new ideas.
- Recognizing one’s own uniqueness, and reaching for one’s fullest potential.
- Marching to the beat of your own drummer.
- Generating many, varied, or unusual ideas; refining ideas, and making them workable.
- Translating gifts and talents into products and actions.
- Being a wonderful artist, musician, writer, or inventor.
- Engaging more of your mind for more time.
- Using imagination and imagery to form and express new insights or ideas.
- Thinking divergently.
- Immersing yourself with passion in an area of interest and expression.
Creativity is...

...the encounter of the intensively conscious human being with his world. (Rollo May)

...the occurrence of a composition which is both new and valuable. (Henry Murray)

...the disposition to make and to recognize valuable innovations. (H. D. Lasswell)

...the emergence in action of a novel relational product, growing out of the uniqueness of the individual. (Carl Rogers)

...the ability to make new combinations of social worth. (John Haefele)

...the ability to see (or be aware) and to respond. (Erich Fromm).

...any thinking process which solves a problem in an original and useful way. (H. Herbert Fox)

As cited in: You And Creativity (1968). Kaiser Aluminum and Chemical Corp.
Effective Problem Solving Relies Upon

Creative Thinking

Encountering gaps, paradoxes, opportunities, challenges, or concerns;

then searching for meaningful new connections by generating—

- Many possibilities;
- Varied possibilities (from different viewpoints or perspectives);
- Unusual or original possibilities;
- Details to expand or enrich possibilities.

&

Critical Thinking

Examining possibilities carefully, fairly, and constructively;

then focusing your thoughts and actions by—

- Organizing and analyzing possibilities;
- Refining and developing promising possibilities;
- Ranking or prioritizing options;
- Choosing or deciding on certain options.

Productive Thinking

Productive thinking occurs when a student:

A. Gathers, organizes, and analyzes information.

B. Asks questions and generates ideas.

C. Refines and tests ideas.

D. Makes inferences, deductions, choices, and decisions.

E. Finds, manages, and solves problems.

F. Continuously monitors, reflects, and evaluates.

G. Implements decisions and action plans.
Discovering and Formulating Problems
Being sensitive to problems and puzzling phenomena
Determining the real problem
Formulating the problem in workable terms
Reflecting on the problem
Keeping an open mind—not jumping to conclusions
Being planful—laying out systematic steps for problem attack

Organizing and Making Use of Information
Getting the known facts well in mind
Classifying information
Distinguishing between relevant and irrelevant data
Deciding what additional data are needed
Inquiring: asking fruitful fact-finding questions
Drawing inferences—reasoning and analyzing
Reviewing the facts

Generating Ideas
Thinking of many possibilities, not just a few
Searching by systematic scanning of problem elements
Searching by systematic outline of possible solutions
Using similarities, analogies, and metaphors
Thinking of appropriate but unusual ideas
Creating hypotheses to account economically for puzzling facts

Evaluating and Improving Ideas
Checking ideas against the available facts
Experimenting: devising ways to test hypotheses
Decision-making: selecting the best ideas and plans
Seeing implications of ideas and considering consequences
Elaborating—bringing ideas to full development
Modifying—changing good ideas to make them even better

Creating New Perspectives
Reformulating—looking at problems in new ways
Seeing problems and issues from the viewpoint of others
Combining ideas into new and surprising forms
Transforming unlikely ideas into productive possibilities

Source: Covington, Crutchfield, Olton, and Davies. The Productive Thinking Program (1972).
Assessing and Evaluating Creativity: Some Fundamentals
Donald J. Treffinger

In any assessment or evaluation task, some data will be gathered, analyzed, and interpreted. These data might be either qualitative or quantitative.

Qualitative refers to information based on observation, biographical information, anecdotal records, or other similar efforts to view the subjects. Qualitative data include descriptions and anecdotal records, which provide a basis for in depth analysis and discussion, including consideration of relevant context issues, possible biases, and values. Analyzing qualitative data is a process concerned more with discerning the meaning of information than with formulating and testing statistical hypotheses. When trying to answer questions such as when or why some behavior is occurring, qualitative data analysis can often yield important, valuable, and original insights. An observer's description and analysis of a child's curiosity and creativity, as expressed in spontaneous exploratory behavior in a typical school setting is an example of the use of qualitative data concerning creativity. Data might be gathered in classrooms, in the lunchroom, and on the playground, involving many instances and examples of the student's curiosity and exploration, gathered over a period of several weeks.

Quantitative data analysis draws upon resources that yield numerical scores or results, such as tests, rating scales, checklists, and self-report inventories. Quantitative procedures yield scores for variables based on clearly identified attributes, characteristics, or specific objectives; these specific scores or numerical data are used for statistical treatment. Thus, the results of quantitative data are expressed numerically (by using percentiles, averages, or means, for example). For quantitative analysis, the items on instruments are intended to be free of judgments based on values, and efforts are made to eliminate error or bias or to control error by statistical procedures. Quantitative measures are best used to answer such questions as, "How much... or how many...? What is the relationship between...?" "What are the effects of...?" or "What are differences between...?" for one or more operationally defined variables. The number of items generated by a participant in response to an open-ended question on a test of divergent thinking is an example of quantitative data on creativity assessment. After asking students, for example, to "List as many things as possible that you might see inside an elementary school," counting the total number of responses (a measure of ideational fluency) for each student involves using quantitative data.

The complex and multidimensional nature of creativity cannot be captured effectively and comprehensively by any single instrument or analytical procedure. Systematic efforts to understand creativity require a well-planned process of studying individuals or groups, including both qualitative and quantitative data.

Measurement, Assessment, and Evaluation

It may also be important to distinguish among measurement, assessment, and evaluation. The term measurement refers to the use of any instrument or testing procedure through which quantitative data can be obtained, and thus can be treated statistically.
**Assessment** is a process of “taking stock” of an individual (or a group) by drawing together information from a number of sources and attempting to organize and synthesize those data in a meaningful way. Assessment draws upon qualitative and quantitative data, and frequently includes (but does not rely only upon) measurement sources. Assessment might be undertaken to identify and understand a person’s (or a group’s or team’s) strengths and deficiencies, or for more prescriptive reasons, such as for instructional planning or for placement in a specific experimental treatment or program. Assessment is, therefore, a broader and more inclusive term than measurement. *Evaluation* can be viewed, within the context of instruction or educational programs, as a systematic process to guide decision-making and to determine the extent to which stated goals and objectives were achieved. Evaluation may involve the use of qualitative or quantitative data, or both.

In both creativity assessment (recognizing creativity in individuals or groups) and evaluation (determining whether creativity objectives have been attained), measurement will often play an important role. **Creativity assessment might be regarded as an attempt to recognize or identify creative characteristics or abilities among people, or to understand their creative strengths and potentials.** Measurement might play a specific role in creativity assessment to the extent that specific tests, inventories, or rating scales provide evidence to help answer such questions.

We would be concerned with creativity assessment in education, for example, if we were to pose such questions as:

- Who are the most (or least) creative students in this class?
- What characteristics suggest that a particular student is very creative?
- What are the creative strengths of the people in this group?
- How is creativity expressed differently among individuals of varying learning styles or preferences?
- How might we optimize a group’s performance, or design the most effective training experience for a team or work group?

Measurement commonly plays an important role in evaluating instructional or training efforts related to creativity. If a special program for students purported to enhance or stimulate students’ creative thinking skills, for example, pre- and post-tests might be used as part of an evaluation design. The kinds of questions posed might include, for example:

- Was the program effective in enhancing students’ creative thinking and problem solving skills?
- What impact did the program have on those who participated in it?
- Were participants better able to recognize problems, generate ideas, and plan for creative action after the training than they were prior to it?
- Did participants in an experimental group demonstrate greater gains in creativity than students in a control group?

Basic Measurement Principles: Implications For Creativity Assessment

I. Measures Should Be *Valid*.

- Content validity
- Criterion-related validity
  - (concurrent; predictive)
- Construct validity
- What makes an adequate criterion?
  - Relevance
  - Free from bias
  - Reliable
  - Available

II. Measures Should Be *Reliable*.

- Stability
- Equivalence or Comparability
- Internal Consistency
- What are some threats to reliability?
  - Changes in person
  - Changes in task
  - Limited samples of behavior

III. Measures Should Be *Practical And Useful*.

- Economy
- Test administration
- Test scoring
- Norms and test interpretation
Using Creativity Tests in Education: General Guidelines

1. Clarify goals and objectives for creative learning and assessment.
2. Select and evaluate instruments carefully.
3. Avoid the use of "home-made" instruments.
4. Be alert for many sources of data.
5. Sample students’ work early and often.
6. Assess complex aspects of creativity.
7. Gather data for a profile within a talent or task domain, and use portfolios to document students’ creative efforts.
8. Use group tests carefully.
9. Develop a written plan.
10. Build a data base.
11. Combine clinical [qualitative] and statistical [quantitative] analyses
12. Don’t settle for decisions you can’t defend.
13. Retain flexibility about decisions.

COCO: Components of Creative Productivity
(Treffinger, 1991)

Characteristics
- Level: "How creative are you?" (Personal and Cognitive)
- Style: "How are you creative?"
- Motivation (Intrinsic and Extrinsic)
- Metacognitive skills (linked to Operations)
- Freedom from internal blocks (linked to Context and Operations)
- Self Confidence

Operations
- Diverging—generating options
- Converging—analyzing, refining, and choosing options.
- Defining, formulating, and solving problems.
- Making complex choices and decisions.
- Metacognitive skills (linked to Characteristics).
- Collaboration and teamwork strategies.

Context
- Internal blocks to creativity (linked to Characteristics and Operations)
  - strategic
  - perceptual
  - values
  - self-concept
- External barriers to creativity (Organizational culture, climate, and environment; leadership)
- Group dynamics, teamwork, and collaboration (linked to Operations)

Outcomes
- Novelty
- Resolution
- Elaboration and Synthesis
- Goal-setting and vision
- Balance of quality and innovation
Some Personal Characteristics Associated with Creativity

- Thinks of many ideas in everyday situations.
- Uses materials in unexpected ways.
- Looks at things from different points of view (varied perspectives).
- Sees unique or unusual possibilities.
- Refines ideas or adds details to make ideas more complex and interesting.
- May be seen by others as a risk-taker.
- Prefers and trusts own judgments and evaluations to those of others. (Can lead to resentment by others!)
- Sensitive to paradoxes, inequities or injustices, unusual events.
- Synthesizes: draws ideas from many sources, integrates ideas, makes patterns.
- Alert to transformations or ways to combine, modify ideas.
- Often a sharp, accurate, caustic wit.
- Non-conforming, but not necessarily deliberately so.
- High energy level for preferred tasks.
- Alert, aware, sensitive—often notices things that go unseen by others.
- Preference for complexity.
- Spontaneous in expressing ideas, emotions, reactions.
- Curious, exploring, playful, adventurous in spirit; enjoys toying with objects, ideas.
- Imaginative, rich use of imagery.
- Strongly motivated to achieve in situations calling for independence.
- Eager to communicate ideas and accomplishments to audiences.
- More concerned with expression (using tasks or requirements as a springboard for own ideas) than with completing tasks or requirements set by others.
- Actively seeks opportunities to be creative.
- Suspends judgment about new possibilities.
- Affirmative, constructive in approach to new ideas or directions for problem solving.
- Easily bored by low level or routine tasks, may drift off into own thoughts.
- Intuitive in perceiving or gathering data.
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<td><strong>Fluency</strong></td>
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<td><strong>Flexibility</strong></td>
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<td><strong>Originality</strong></td>
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<td><strong>Elaboration</strong></td>
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Based on the pioneering contributions of E. Paul Torrance and J. P. Guilford
Internal or Personal Blocks and Barriers—
Those We Create Inside Ourselves

External Blocks and Barriers—
Arising From Our Context or Environment
Exploring the Climate For Creativity
(Based on Research by G. Ekvall)

Use this informal exercise only to probe your own thoughts and feelings about the climate for creativity and innovation in your organization. (This is not an assessment instrument!)

1. Challenge and Motivation. The extent to which people who work here enjoy what they do, and view their work as meaningful and stimulating.

   1-2-3-4-5-6-7-8-9-10

2. Freedom. The extent to which staff members perceive that there is room for individual initiative in their work in this school.

   1-2-3-4-5-6-7-8-9-10

3. Idea Support. People are encouraged to take initiative and are supported when sharing new ideas.

   1-2-3-4-5-6-7-8-9-10

4. Trust and Openness. The environment of the school is characterized by open communication and trust.

   1-2-3-4-5-6-7-8-9-10

5. Liveliness and Dynamism. There is an exciting atmosphere, in which many things are going on.

   1-2-3-4-5-6-7-8-9-10

6. Playfulness and Humor. The atmosphere is informal and allows people to show their sense of humor.

   1-2-3-4-5-6-7-8-9-10

7. Debates. The climate provides for open sharing and discussion of new ideas.

   1-2-3-4-5-6-7-8-9-10

8. Conflicts. There are power struggles and personal differences in the organization. [High scores on this dimension can inhibit creativity and innovation; lower scores characterize a climate that is conducive to creativity.]

   1-2-3-4-5-6-7-8-9-10

9. Risk-Taking. The environment is action-oriented, and is responsive and encouraging of new and uncertain ideas.

   1-2-3-4-5-6-7-8-9-10

10. Idea Time. The pace of work provides flexibility and opportunities to develop new ideas.

    1-2-3-4-5-6-7-8-9-10
Dimensions of Creativity in Products

NOVELTY

The extent to which a product demonstrates newness—new processes, techniques, materials, or concepts; new products in or out of the field; and the effect of the product on future creative efforts. Novelty includes three of the 14 general criteria:

Originality. The product is uncommonly found or observed in the everyday course of things; statistically infrequent or unusual.

Germinal. The likelihood of suggesting additional creative products in the future.

Transformational. The extent to which the product forces others to shift their thinking or look at things in a totally new and different way [“Things won’t ever be the same again because of this...”].

RESOLUTION

The extent to which there is a correctness, completeness, or “rightness” about the idea or product, so that the product clearly “fits” or fills the need it was intended to address. Resolution includes five of the 14 general criteria:

Adequate. How well the product answers the needs of the situation—does it respond to enough of the needs?

Appropriate. The product makes sense and is relevant to the challenge.

Logical. The extent to which the product follows the accepted and understood rules for the discipline or universe in which it operates.

Useful. The product has clear, practical applications.

Valuable. The product is deemed worthy by users, listeners, viewers, or consumers.

ELABORATION AND SYNTHESIS

The degree to which the product combines unlike elements into a refined, well-developed, or coherent whole. Resolution includes six of the 14 general criteria:

Attractive. The product commands the attention of, and appeals to, the intended audience.

Complex. The product or solution contains many elements at one or more levels.

Elegant. The product or solution is expressed in a refined, understated way.

Expressive. The product is presented in a way that promotes communication or makes the solution easy to understand.

Organic. The product has a sense of completeness or wholeness.

Well-Crafted. The product has been worked and reworked with care, to develop it to the highest possible level for that point in time.

Assessment

- Calls for students to demonstrate performance on an authentic task.
- Emphasizes use and application more than just acquisition and recall.

Instruction

- Involves tasks similar to those students will encounter in real life.
- Perceived by students (and by the adult world) as meaningful and worth doing.
Section Two: Assessment and Instruction—In Search of "Creative Connections."
Context: Climate and Physical Setting for Learning

Metacognition

Personal Characteristics (Cognitive and Affective)

Real Life Opportunities and Challenges
- Problem Solving
- Inventing
- Independent Projects (Individual or Group)

Foundations
- Knowledge
- Generating and Focusing Tools for Thinking
- Research/Inquiry Tools
- Expression/Productivity Tools

Realistic Tasks
- Application and Extensions of Learning
- Practicing Problem Solving
- Making Choices and Decisions

Source: Treffinger & Feldhusen, Planning for Productive Thinking and Learning
<table>
<thead>
<tr>
<th><strong>Real</strong></th>
<th><strong>Realistic</strong></th>
<th><strong>Artificial</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying an airplane.</td>
<td>Being in a flight simulator.</td>
<td>Viewing a movie in which you watch someone flying an airplane.</td>
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<tr>
<td>Level of Process Outcome</td>
<td>Teaching and Learning Dimensions</td>
<td>Evaluation Implications</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td><strong>1</strong> Learn and Use Basic “Tools”</td>
<td>Direct instruction (&quot;Teaching&quot;) Learner receives, masters, applies [Desirable: teaching for transfer to content.]</td>
<td>Mastery of tools; Ability to use tools in more than one area [Tests, Rating Scales, or Check Lists.]</td>
</tr>
<tr>
<td><strong>2</strong> Learn and Practice Complex Process(es)</td>
<td>Collaborative work; Group involvement Leadership by teacher [Cooperative or collaborative skills, guided by teacher.]</td>
<td>Performance demonstrations Case Studies Simulations Scenarios Practice Problems Computer-based (interactive)</td>
</tr>
<tr>
<td><strong>3</strong> Dealing with Real Problems and Challenges</td>
<td>Student-directed efforts (Individual or groups) [Facilitation]</td>
<td>Portfolio -written -work or product samples -prototypes or models -videos, slides, or tapes -“testimonials”</td>
</tr>
<tr>
<td>Assessment or Evaluation Approach</td>
<td>Level I: Basic &quot;Tools&quot;</td>
<td>Level II: Learn/Practice Proce</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Tests</td>
<td>Useful to assess level of proficiency or growth in basic areas (e.g., creative or critical thinking)</td>
<td>Expanded multiple choice or written responses to assess process skills may be useful.</td>
</tr>
<tr>
<td>Performance Tasks</td>
<td>Tasks of brief scope and duration (e.g., &quot;event&quot; tasks) can yield information relating to skill or proficiency with basic tools.</td>
<td>Wide variety of tasks can be used to provide realistic assessment of performance (e.g., cases, scenarios, practice problems)</td>
</tr>
<tr>
<td>Portfolio</td>
<td>Might include documentation of applications of specific tools or strategies in particular contexts.</td>
<td>Might include documentation of involvement in competitions, contests, or other structured programs.</td>
</tr>
</tbody>
</table>

[ ] = Primary Assessment or Evaluation Approach at Each Level

Assessment and Evaluation within the Creative Learning Model
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Publishers of Creativity Assessment Instruments

IMPORTANT NOTE! This list is provided for professional use only. Creativity assessment instruments should be employed only by individuals with appropriate training and experience, who can assess their reliability, validity, and usefulness in a particular setting, and who can properly supervise all test administration, scoring, and interpretation. Creativity assessment instruments should not be used as practice exercises or demonstration items. Inclusion of instruments on this list does not imply any recommendation or endorsement as to their validity or appropriateness for any specific age group or assessment purpose.

BIOGRAPHICAL INVENTORY, FORM U (C. Taylor & R. Ellison)
Institute for Behavioral Research on Creativity
1570 South 11th East
Salt Lake City, UT 84105

CREATIVITY TESTS FOR CHILDREN
(J. P. Guilford)
Sheridan Psychological Services Inc.
Beverly Hills, CA 90213

KHATENA-TORRANCE CREATIVE PERCEPTION INVENTORY
(J. Khatena & E. P. Torrance)
Scholastic Testing Service
480 Meyer Rd.
Bensenville, IL 60106

SCALES FOR RATING BEHAVIORAL CHARACTERISTICS OF SUPERIOR STUDENTS (J. Renzulli & Others)
Creative Learning Press
P.O. Box 320
Mansfield Center, CT 06250

ASSESSING CPS PERFORMANCE
(D. Treffinger)
Center for Creative Learning, Inc.
P.O. Box 3736
Sarasota, FL 34230-3736

GIFT / GIFFI / PRIDE
(S. Rimm & G. Davis)
Educational Assessments Service, Inc.
Route I, Box 139A
Watertown, WI 53094

TORRANCE TESTS OF CREATIVE THINKING
(E. P. Torrance)
Scholastic Testing Service
480 Meyer Rd.
Bensenville, IL 60106

SOI ASSESSMENT RESOURCES
(Based on Guilford's model; Dr. Mary Meeker)
SOI Institute
45755 Good Pasture Rd.
Vida, OR 97488

THINKING CREATIVELY WITH SOUNDS AND WORDS
(E. P. Torrance, B. Cunningham, J. Khatena)
Scholastic Testing Service
480 Meyer Rd.
Bensenville, IL 60106

THINKING CREATIVELY IN ACTION AND MOVEMENT (E. P. Torrance)
Scholastic Testing Service
480 Meyer Rd.
Bensenville, IL 60106
Productive Thinking Skills Check List

Name of Student ____________________________  Date ____________________________

In what settings or situations do you observe this student's critical thinking and problem solving efforts?

_____________________________________________________________________________

_____________________________________________________________________________

What are some specific strengths (Mark S) or limitations (Mark L) that you have seen in this student's creative thinking?

- Verbal Fluency (thinking of many ideas using words or language)
- Figural Fluency (thinking of many ideas using pictures or images)
- Verbal Flexibility (thinking of different or varied ideas with words)
- Figural Flexibility (thinking of different or varied pictures or images)
- Verbal Originality (using words to think of new, unusual, or unique ideas)
- Figural Originality (using pictures or images to think of new, unusual, or unique ideas)
- Verbal Elaboration (refines ideas and adds details using words)
- Figural Elaboration (refines pictures and images with details)
- Recognizes many, varied, or unusual implications of options
- Uses idea-checklisting strategies (e.g., SCAMPER) to search for options
- Makes transformations of data or possibilities
- Makes connections effectively using random objects or using analogy or metaphor
- Monitors own use of diverging processes and strategies effectively
- Knows and uses deferred judgment principle
- Other: (Give examples):

What are some specific strengths (Mark S) or limitations (Mark L) that you have seen in this student's critical thinking?

- Recognizes or makes inferences readily and accurately
- Analyses arguments fairly, carefully, and thoughtfully
- Reaches sound conclusions and uses deductive reasoning effectively
- Generalizes and uses inductive reasoning effectively
- Recognizes propaganda or persuasion techniques
- Understands information and uses it independently
- Gives logical reasons or justifications for decisions
- Uses analogy, comparing and contrasting effectively
- Seeks evidence and uses it skillfully
- Categorizes or clusters options effectively into meaningful groups
- Rank orders or prioritizes options or alternatives effectively
- Formulates appropriate criteria and uses them constructively to evaluate options
- Monitors own use of converging processes and strategies effectively
- Knows and uses affirmative judgment principle
- Other: (Give examples):

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Productive Thinking Skills Check List— Page Two

What are some specific strengths (Mark S) or limitations (Mark L) that you have seen in this student's problem solving?

- Sees many opportunities or challenges
- Selects an appropriate broad goal or objective
- Examines tasks carefully to determine appropriate methods to use
- Determines appropriateness of individual or group effort to solve problems
- Clarifies ownership or clientship for a task or challenge
- Formulates general goal as a broad, brief, and beneficial “Mess” statement
- Considers and uses many sources of data
- Identifies most important areas of data
- Formulates many possible problem statements
- Constructs problem statements that invite many ideas
- Selects problem statement with Idea-Finding potential
- Generates many ideas for a problem statement
- Selects promising ideas
- Selects appropriate strategies for analyzing, developing, or refining promising ideas
- Applies idea development or selection strategies effectively
- Anticipates possible sources of assistance or resistance
- Plans for successful implementation of solutions
- Develops a specific Plan of Action and ways to carry it out.
- Analyzes, describes, monitors, and modifies own problem solving efforts effectively
- Other (Give examples)

IV. Give at least two specific illustrations or examples of the student's typical performance in critical thinking, creative thinking, and problem solving efforts. Describe as completely as possible situations in which you have observed the student's thinking skills. Include any relevant information about the student's products or accomplishments.
Metacognitive Skills for Productive Thinking

Productive thinkers are competent, confident, and committed as they think creatively and critically, solve problems, and make decisions. In each of these “three C’s” there are several important metacognitive skills. These are skills students need and use (independently and as members of a group) to plan their productive thinking efforts, monitor and manage their strategies and results as they proceed, modify their behavior as necessary, and communicate about their thinking.

Competence

- Knows content or task domain;
- Knows productive thinking processes (strategies and underlying concepts and principles; how and when to use strategies, individually or in groups);
- Knows and applies the language or vocabulary of productive thinking;
- Attends and focuses; deliberately reviews and analyzes tasks (task demands and constraints; data; new possibilities; criteria and actions);
- Uses efficient memory strategies;
- Applies strong processing techniques (mental pictures, words, emotions; physical sensations);
- Monitors performance and choices; knows how, when to revise or adjust;
- Engages in strong organizing efforts;
- Integrates processes and content in learning and in many life situations.

Confidence

- Believes in effectiveness of processes or methods;
- Believes in self as a facilitator;
- Feels empowered by productive thinking skills;
- Able to change course or redirect with being threatened;
- Comfortable with strategies and language of process;
- Recognizes needs and opportunities for productive thinking;
- Uses power thinking and affirmations (“I can!”);
- Applies goal-setting and benchmarking;
- Aware of obstacles and ways to avoid or overcome them;
- Predicts and anticipates successful outcomes;
- Views situations as opportunities and challenges;
- Knows own strengths and style and how to make best use of them.

Competence

- Immerses self in important concerns; passion;
- Takes ownership (responsibility for, and intent to take, action);
- Shows initiative; actively seeks opportunities to apply productive thinking;
- Demonstrates belief in, and regular use of, productive thinking processes;
- Strives for completeness of understanding and continues to work toward that goal;
- Judges results accurately and honestly;
- Engages in “debriefing” and continues to study, learn, and improve;
- Seeks others with whom to learn and share (as colleagues and in mentoring relationships).

Note. This material is excerpted from: Treffinger, D. J. & Cross, Jr., J. A. (1994). Professional development module: Authentic assessment of productive thinking. [Field Test Edition]. Contact the Center for more information about this module or other titles in our Professional Development Modules series.
Types of Performance Tasks

• **Short Tasks.** Open-ended tasks that assess the student's performance on procedures or thinking skills in a specific context.
  — Engage or capture attention
  — Provide initial stimulus
  — May include additional data (or "scaffolding") such as key concepts or explicit performance criteria.

• **Expanded Objective Questions.** These are multiple choice tasks that build on a given set of data and ask students to engage in higher level thinking to choose the best response. They may also ask students to explain or justify their responses.

• **Free Response Tasks.** Provide an engaging, open-ended situation, and ask student to plan, construct, and communicate an original response.

• **Event Tasks.** Similar to Free Response, but often presented for a group or team to work on collaboratively. May require extended working time, under realistic circumstances.

• **Extended Performance Tasks.** Long-term projects, which may involve multiple goals and skills, for individuals, groups, or teams. There may be several intermediate checkpoints or milestones en route to the final products or results, with opportunities for developmental feedback, discussion, and revision. They may vary in scope and magnitude, and may be contrived or realistic (as in simulation experiences) or real (as in internships or field-based projects).

The Thinking Tools Record

Name ____________________________  Group ____________

<table>
<thead>
<tr>
<th>Diverging Tools</th>
<th>Presented</th>
<th>Practice</th>
<th>Apply-W/Tchr</th>
<th>Appy-Indepen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brainstorming</td>
<td></td>
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<tr>
<td>Brainwriting</td>
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<tr>
<td>Attribute List.</td>
<td></td>
<td></td>
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<tr>
<td>Forced Rel</td>
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<tr>
<td>Direct Analogy</td>
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</tr>
<tr>
<td>Personal Analogy</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SCAMPER</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Morphology</td>
<td></td>
<td></td>
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<tr>
<td>Visual Force Fit</td>
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<tr>
<td>Slip Writing</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
### Diverging Tools — Group Record Sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>Defers Judgment</th>
<th>Uses Brain-storming</th>
<th>Brain-storms Post-its®</th>
<th>Uses Brain-writing</th>
<th>Uses SCAMPER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alicia</td>
<td>8/29</td>
<td>8/30</td>
<td>9/1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pat</td>
<td>8/29</td>
<td>8/30</td>
<td>9/1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chris</td>
<td>8/29</td>
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<td></td>
</tr>
<tr>
<td>Jose</td>
<td>8/29</td>
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</tr>
</tbody>
</table>

### Individual Record — Uses Level One Tools

**Name**  
Susan

**DIVERGING TOOLS**
- Brain-storming  
- Brain-writing  
- Attribute  
- Forced  
- SCAMPER  
- Morphology  
  
**9/3**  
**9/10**

**CONVERGING TOOLS**
- Compare & Inferences & Judging  
- Hits & ALU  
- Contrast Deductions Relev. Data Hot Spots  
- ALU Criterion Matrix  
  
**9/3**
New Approaches To Scoring Tasks

- **Rubric.** An established set of criteria to score or rate a performance, project, or portfolio. It describes the kinds or levels of performance that will be expected in relation to a standard of achievement. The descriptors in the rubric tell the evaluator what to look for in a response or product. They help the rater place the student's work along a predetermined scale.

**Example: “Drawing Conclusions”**

<table>
<thead>
<tr>
<th>Points</th>
<th>Descriptors—Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Draws a conclusion supported by data, and gives supporting evidence</td>
</tr>
<tr>
<td>2</td>
<td>Draws a conclusion supported by data, but does not give supporting evidence</td>
</tr>
<tr>
<td>1</td>
<td>Draws a conclusion that is not (or is only partially) supported by evidence</td>
</tr>
<tr>
<td>0</td>
<td>Fails to draw any conclusion</td>
</tr>
</tbody>
</table>

May also include Benchmarks—concrete examples or samples at each level.
Sample Rubric: Brainstorming

3  Searches open for many, varied, and unusual possibilities; defers judgment.

2  Separates idea generation from evaluation (defers judgment), but generates only a limited number of possibilities.

1  Generates one option at a time, stopping to judge or evaluate each possibility, and generates only a limited number of possibilities.

0  Thinks immediately of an option, with no divergence, and accepts it; criticizes other ideas and rejects need for more options.

Sample Rubric: Using Criteria To Analyze Options

3  Formulates appropriate criteria, applies them systematically to options, and considers ways to overcome possible limitations, to combine appealing possibilities, or produce new options.

2  States appropriate criteria for analyzing options and applies them in a "mechanical" way to rank or rate the options, focusing only on finding "the best idea."

1  Lists several options then judges them, stating reasons for accepting or rejecting them, without formulating criteria explicitly or applying criteria systematically.

0  Declares any option "good" or "bad" (accepts or rejects) with no evidence of criteria, justification, or systematic analysis.
<table>
<thead>
<tr>
<th>Item</th>
<th>Price at Store A</th>
<th>Price at Store B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Bookish Way—**

1. How much would it cost you to purchase the items on your shopping list at Store A? ________

2. How much would it cost you to purchase the items on your shopping list at Store B? ________

3. At which store would you spend less money? ________

4. How much money would you save there? ________

Adding a little “pizzaz…”

Give the students ads from two different grocery stores, and a “shopping list.” (Make sure all the items on the lists are in both ads!) Then proceed as above.

**Variations:** Longer list of products; varied shopping lists for individuals or groups; vary the quantities; “Get everything on your list without spending more than [xx] dollars.”
Increase the Challenge—

- Vary quantities of items, so students must use both multiplication and addition.
- Bring the use of coupons into the task, at one or both stores, to influence calculation and planning required and to influence comparison of stores.

For more productive thinking—

- Monitor prices on several items at two different stores, for a period of 6-8 weeks. Does one store offer consistently lower prices?
- Compare prices on advertised specials versus regular prices of other items.
- When one store shows its prices to be lower by showing a list and comparing it to another, does that mean all their prices are lower?

For even more "stretch," consider a project such as—

"Work as a pair [or in teams of 3 or 4] to determine which of two groceries stores is a better place to shop. Prepare and present to the class a report on your findings."

Reports must include:

- What criteria were used by the team?
- What data were obtained, and how?
- Include some data presentation in graphic format
- Make recommendations, and show how they are (or are not!) based on your results
- List the members of your team, and what each person’s role was.
Group Task: Design a New Park

There has been considerable interest in your town in converting an empty lot into a new neighborhood park. You have been appointed to a committee to study the concept. Your task is to consider the possible design and development plan for such a park, and to make recommendations to the Town Council regarding the proposed park.

1. Some people have already expressed interest in things that might be included in the park. Their suggestions include:
   a. Playground equipment for children
   b. A pond, with a small bridge and fish
   c. A small zoo
   d. Picnic tables with barbeque grills
   e. A community floral garden
   f. Tennis and basketball courts
   g. A swimming pool
   h. Hiking or walking trails
   i. Marked nature trail
   j. Bicycle paths
   k. A small concert or performance area or stage
   l. Concession stands
   m. A sports field with bleachers

2. Develop a drawing of your committee's proposal, and be prepared to support it with a detailed rationale, a statement of the criteria you considered in developing your rationale, a drawing of the proposed park, and a proposed budget.
<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Unit</th>
<th>Quantity</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rope</td>
<td>$1</td>
<td>per 10'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bricks</td>
<td>$1</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand</td>
<td>$1</td>
<td>cubic ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepping Stones</td>
<td>$5</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plants and Shrubs</td>
<td>$10</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trash Barrels</td>
<td>$15</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benches (6' long)</td>
<td>$15</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old telephone poles (10' long)</td>
<td>$25</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wire fence (6' high)</td>
<td>$30</td>
<td>6 run. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphalt pavement (4' wide)</td>
<td>$50</td>
<td>3 run. ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Picnic Tables with two benches</td>
<td>$50</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community garden plot and seedlings</td>
<td>$50</td>
<td>10' x 10'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animals</td>
<td>$10</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Animals</td>
<td>$20</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Animals</td>
<td>$100</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinking Fountains</td>
<td>$75</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pond</td>
<td>$100</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playground Equipment</td>
<td>$100</td>
<td>per item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bike racks</td>
<td>$150</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barbeques</td>
<td>$150</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street Lights</td>
<td>$250</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Telescope</td>
<td>$400</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage or Gazebo (20' square)</td>
<td>$600</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathrooms (one each, men/women)</td>
<td>$570</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bleachers (Grandstand)</td>
<td>$750</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridge</td>
<td>$1200</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Booths or Food/Refreshment Stands</td>
<td>$700</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterfalls or Decorative Fountains</td>
<td>$800</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tennis or Basketball Court (with fences)</td>
<td>$3500</td>
<td>per court</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swimming Pool</td>
<td>$8500</td>
<td>each</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (list)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (list)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Section Three: Profiling Creative Talents
We should not ask, "How gifted [creative] is this person?"

A profile is NOT an aggregation of several independent data sources to yield an overall index or categorization of a person!

Instead...

A profile should be a vehicle to help identify the person's strengths or talents

- For a particular task or goal;
- In a certain setting;
- Under particular circumstances.
Profiling refers to the development of a multi-dimensional framework to help understand, predict, and facilitate performance in a meaningful or valued domain (worthwhile outcome).


The profile should help us plan how best to...

- Create meaningful and effective instructional experiences;
- Help people understand, recognize, or identify their talents, and "spot" emerging or developing strengths;
- Know and teach through the student's strengths, interests, and talents;
- Guide people in learning how to use their talents autonomously;
- Build bridges between past and future learning experiences;
- Involve students actively in learning;
- Recognize and respond to "gaps" between student needs and present instructional program or services.

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The profiling framework takes into account a constellation of:

- **Characteristics**
  - Cognitive
  - Metacognitive
  - Personality and Styles
  - Interest Data or Inventories

- **Dimensions of the Situation**
  - Culture
  - Climate

- **History and Experiences**
  - Test data (especially criterion-referenced)
  - Biographical data
  - Transferable process skills
  - Ratings, Observations, References
  - Prior evaluations or grades

- **Elements of the Task**

- **Product or Outcome Qualities**

- **Data from one’s current Portfolio**
Context
- Places
- Settings
- Situations
- Culture
- Climate
- Time
- Resources
- Expectations
- Support

Outcomes
- Goals, aspirations
- Expectations and constraints regarding the task requirements
- Perceptions of the outcome (desired or expected)

Giftedness
Creative Productivity

Operations
- Process strategies available
- Metacognitive skills
- Other transferable skills (e.g., writing, computer)

Characteristics
- Domain-specific knowledge
  "Expertise"
- Level of creative and critical thinking ability
- Experiences and achievements
- Personality
- Style
- Intrinsic Motivation or Task Commitment
- Interests, Talents
- Personal blocks or barriers

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INDIVIDUALIZED PROGRAMMING PROFILE

Student ___________________________ Age ________ Grade ________ Date ____________

School ___________________________ Catalyst Teacher ___________ Classroom Teacher(s) ____________

<table>
<thead>
<tr>
<th>Data Sources</th>
<th>Important Student Characteristics</th>
<th>Task and Environment Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Data</td>
<td>Ability</td>
<td>Creativity</td>
</tr>
<tr>
<td>Ratings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self- or Peer-Reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations and Products</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How do these data influence your planning for specific tasks or instructional goals?
Student Creative Strengths Profile

Name __________________________ Date __________

The purpose of this profile is to assist you in taking stock of a student's creative strengths. It is NOT designed to label, stereotype, or make judgments about the student (e.g., you are not trying to determine whether the student is “high, average, or low” in creativity). Use it to help guide instructional planning, and to seek ways to bring out the best in your students!

Directions. For each section, record any relevant test scores, ratings, or other data that have given you information about some relevant aspects of the student’s creative talents, strengths and needs. Feel free to include any information that is drawn from your own experiences and accomplishments, or from your interactions with mentors or others who have worked with the student. Don’t worry about whether everything is in the “correct” place. Use the data to help gain a better understanding of the student!

I. CREATIVE THINKING ABILITIES. In this section, you should record information about verbal or figural creative thinking dimensions: fluency, flexibility, originality, and elaboration.

Data

Summarize briefly the student’s strengths in this area, and how you can build upon them:

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II. PERSONAL CHARACTERISTICS. In this section, record information about the student's personal characteristics and learning style preferences.

Data

Summarize briefly the student's strengths in this area, and how you can build upon them:

III. PROCESS STRENGTHS. In this section, record information about the student's strengths related to strategies or techniques for creative and critical thinking. What specific strategies does the student know and can the student apply?

Data

Summarize briefly the student's strengths in this area, and how you can build upon them:
IV. PRODUCT EXPERIENCES. In this section, record information about the student's accomplishments and creative products. Include information from inventories or checklists as well as specific reports or documentation of actual products you know the student has created.

Data

Summarize briefly the student's strengths in this area, and how you can build upon them:

V. SPECIFIC AREAS OF INTEREST. In this section, record information about the general areas or specific topics in which you know the student would like to pursue creative projects. Use data from interest assessments as well as any new or additional anecdotal or observational data you can provide.

Data

Summarize briefly the student's strengths in this area, and how you can build upon them:
VI. ENVIRONMENT AND CLIMATE CONSIDERATIONS. In this section, record information about the environment or working conditions in which this student works best (whether individually or as part of a group).

Data

Summarize briefly the student's strengths in this area, and how you can build upon them:

VII. OTHER FACTORS. This section allows you to enter any other information that you believe will help you to get a better, more complete, or more accurate understanding of the student's personal creative skills, strengths, talents, or needs.

Data

Summarize briefly the student's strengths in this area, and how you can build upon them:

NEXT STEPS: Use these data to develop a specific instructional plan. How will you build on this student's creative strengths in order to enhance, extend, and expand learning opportunities for her/him?
Section Four: Portfolios for Documenting Creative Accomplishments Authentically
What is a Portfolio?

A portfolio is a student’s unique, personal, and meaningful way of documenting his or her work and accomplishments:

- within a domain or task area
- for a particular purpose
- at a certain time
- for a particular audience.
Goals and Purposes of Portfolios...

- Show authentic achievements
- Help students see their own progress (achievements, productivity, growth) over time
- Enable teachers to assess complex outcomes and applications
- Show parents how their children are developing
- Confirm (or contradict) other evidence, such as achievement test scores
- Emphasize and support the need for, and value of, assessing growth and achievement over longer periods
- Helping students learn to “chart their own course” for future learning activities
- Verifying one’s own progress, efforts, and outcomes
- Communicating to others about one’s own creative productivity
- Providing an opportunity to share and celebrate one’s efforts and work
Portfolios Are...

- Important ways to document and assess authentic (real-world and higher-level) learning outcomes—for which traditional tests are usually inadequate.

- Not substitutes for other kinds of evidence or assessments.

- Complex and messy for the teacher, the student, and the reviewers—but they ought to be! No one should be tricked into believing that authentic tasks should be "quick and easy" to assess.

- Learning and empowering experiences for students, helping students to assess their own work, progress, and accomplishments and to set their own future goals.

- Targeted or focused, not "all purpose" characterizations of the student. They are unique and personal ways for students to communicate a specific message to a certain audience, at a certain time.
What Might Portfolios Include?

- Products or work samples (completed or in progress; dated!)
- Testimonials
- Evaluations, by oneself or others, of one's work or products
- Biographical resources, journal or diary entries or excerpts ("Me, in progress")
- Documentation of participation in activities or specific events
- Recognitions, Honors, Prizes, or Awards for one's work
- External reviews or evaluations of one's work, growth, or accomplishments
- Visual documentation of work completed or in progress (models, prototypes, photographs, videotapes)
- Audio cassettes
- Scrapbooks—media reports or clippings
- Other items, selected by the student, for a specific purpose or need
Assembling a Portfolio

1. Know why you're creating it. Identify your purpose(s) and audience(s).

2. Determine what will be best to include—
   — "Best" work?
   — "Typical" work?
   — Work showing change or growth?

3. Consider various ways to assemble the data, to display or present it, and to convey your intended purpose(s) to your audience(s).

4. Provide "help" for the viewer or reviewer as appropriate for the context
   — Table of contents
   — Labels or Legends
   — Self-Assessment
   — Self- or Assessor Forms or Ratings

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Portfolios... Some Key Questions

- Who makes decisions about the development and uses of portfolios?
- Are the intended purposes appropriate for portfolio assessment?
- What will be included?
- How much should be included?
- What constraints or requirements will be stipulated?
- How will the portfolios be used?
- If the portfolios are to be assessed—
  —What components will be assessed?
  —By whom?
  —Using what criteria?
  —How will reliability be assured?
- Who will hear about the results? Why?
  How will the results be communicated?
- What provisions are made for revision or reassessment?
- How will portfolio assessments be related to other assessment criteria or procedures?
Bibliography

I. Authentic Assessment


II. Creativity: Nature, Characteristics, and Nurture


III. Measuring Creativity


