Future Problem Solving Program Minnesota

Inspire Creative Thinking
Apply Critical Thinking

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This award winning, educational program was founded in 1974 by Dr. E. Paul Torrance.

Internationally renowned for his work in creativity and gifted education, he was also concerned about the future.
Where to start:

Did the plan work? What does the data show?

What is the problem? What does the data show?

Implement the plan
Who will do what, where, when, and how often?
How will fidelity of implementation be determined?

Why is this happening?
Curriculum Issue?
Instructional Issue?
Student Issue?

What is our plan? What are we going to do?
How will we measure success?

Did the plan work?
In what ways might we meet the needs of learners within this framework?

Student Achievement Pyramid

- Standards Based Classroom Instruction
- Needs Based Instruction
- Eligibility Driven Instruction
- Specifically Designed Instruction
Habits of mind

1. Attitudes and perceptions

2. Acquire and integrate knowledge

3. Extend and refine knowledge
   (Creative Thinking)

4. Use knowledge meaningfully
   (Critical Thinking)
Understanding the Problem

Acquire / Integrate Knowledge
Research
Analyze the Future Scene
Identify Challenges
Select an Underlying Problem

Generating Ideas
Extend / Refine Knowledge
Creative Thinking
Produce Solution Ideas

Planning for Action
Use knowledge meaningfully
Critical Thinking
Select Criteria
Apply Criteria
Develop an Action Plan

Preparing a New Generation of Problem Solvers
Students are NOT challenged...

- Preferential seating
- Shortened assignments
- Suspension
- Doing MORE of the same
- Assigning students to be peer helpers
Students are inspired...

- When they’re engaged

Causing:

- Improved participation
- Improved behaviors
Brainstorming activities – Make them the experts! (things that are...)

Projects of interest – solving an area of concern within their community

Using newly acquired skills – Carry out a plan of action, academic competition (not trivia based)

Teach critical thinking - to solve real problems
Brainstorming activities – Make them the experts!
(things that are...)

Projects of interest – solving an area of concern within their community

Using newly acquired skills – Carry out a plan of action, academic competition (not trivia based)

Teach critical thinking - to solve real problems
Engaged Students – More likely to participate

Improved Participation – Less likely to have undesirable behaviors

busy about?

-Henry David Thoreau-
Strategies for teaching these skills:

**BRAINSTORMING** – Standards Based Instruction

1. Teach the rules:
   - No criticism
   - Crazy ideas
   - Piggy backing
   - All ideas are good

2. Teams of 4-6 for these activities.

3. Allow each team to share their ideas

4. Start each day with calisthenics of the brain to get them warmed up!
Eensy Weensy Spider went up the water spout.

Down came the rain and washed the spider out.

Out came the sun and dried up all the rain.

So the Eensy Weensy Spider went up the spout again.
Strategies for teaching these skills:

Projects of Interest – Needs Based Instruction

1. Hands On Activities
   - Legos, Lincoln Logs
   - Q-Tips, rubber bands, aluminum foil, an old newspaper, Duct Tape, yarn
     how many different things can you make with these items? How many are usable?

2. Writing in place of the regular assignment
   - Scenarios based on real world issues based 50 years in the future (1,000 - 1,500 words)
   - Fairy Tales, the alter ego
Strategies for teaching these skills:

**Using Newly Acquired Skills – Real world problems**

1. Academic Competitions
2. Avoid trivia based memory is the lowest level thinking skill
3. Open ended challenges that require creative thinking using newly acquired knowledge and skills
4. Timed challenges
5. Spontaneous challenges
Anya listened to her 4th grade history teacher talk about Asia. Anya’s parents had been born in Asia in a country called Cambodia. After getting married, her parents left their families and moved to America. Anya first met her grandmother when she came to the United States to live with them 5 months ago. She didn’t speak or write English, just Khmer, the language of Cambodia. Anya wished she knew what her grandmother was saying, but her parents had not taught her Khmer. Anya thought the Khmer writing looked beautiful, and she wished she could read it. It wasn’t like the English alphabet. Khmer letters were curly and had more vowels and consonants than English.

Anya’s father worked for the United Nations – an international organization made up of almost two hundred nations. He said the United Nations needed workers who could speak foreign languages, especially rare ones. Anya’s school only taught French and Spanish, which were common foreign languages. Her dad wished he had taught Anya how to speak Khmer when she was younger, but Anya’s mom didn’t want Anya to stand out as a first-generation immigrant. She wanted her daughter to fit into American culture and speak perfect English. Now Anya’s father seemed to be rethinking the decision.

Anya’s history teacher assigned the class a project about their ancestry. That night, her parents interpreted some of her grandmother’s stories from Khmer to English. Her grandmother excitedly talked about the city of Angkor, slowing down often for translation. Anya learned that in 1100 A.D. the city of Angkor had been the largest city in the entire world. Her grandmother said a hundred temples were still standing and millions of tourists now came every year to see them. The temples had thousands of carvings in the various dialects of Khmer. Anya also learned her name meant “bountiful” in Khmer. Anya wondered why she didn’t know all of this!

Her parents said very few people in Cambodia spoke English. The government was very strict and did not want their citizens reading English newspapers or learning about the outside world, but the younger generation was finding ways to learn English. Anya worried that no one who knew how to speak Khmer would be left in a few generations. That night she convinced her mom to start teaching her Khmer. Maybe one day she would go translate all the carvings in Khmer for the tourists so that they would understand and learn about the great city of Angkor.

Discuss the problems associated with disappearing languages. How can communities, schools, and organizations address the problems of disappearing languages? How can they preserve the stories, history, and cultures of these languages?
Strategies for teaching these skills:

**Teach Critical Thinking – making the best decisions**

1. These students are interested in:
   - real world issues, research
   - the future, future scenes

2. Brainstorming

3. Critical thinking - the highest level thinking skill
   - Teach how to develop focused criteria
   - Teach how to use the criteria to help determine a plan of action

4. Beyond the classroom
Preparing for the future

“The genius of the future will be the creative mind adapting itself to the shape of things to come.”

Dr. E. Paul Torrance, *Creativity*, (1991)
Agents of Change

Action Based Problem Solving

Global Issues Problem Solving

Problem Solving:
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