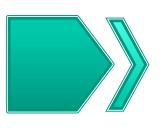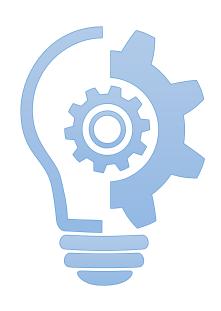# Problem Solving for the Future

Confratute 2023
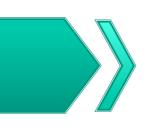
April Michele
FPSPI Executive Director

Problem Solving for the Future… WHY?

The 21st Century requires powerful and effective global leaders - and these leaders must possess effective problem solving skills.

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

- E. Paul Torrance
Creativity, (1991)

Session Content

Become familiar with the Future Problem Solving Program (FPS)

4 Cs

Intro to Creative Problem Solving (CPS)

Real world skills and leadership via Community Problem Solving (CmPS)

Opportunities for students

Training Objectives

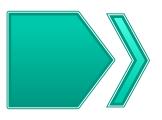**Become familiar with the Future Problem Solving Program (FPS)**

Comprehend the Creative Problem Solving (CPS) Process

Apply CPS through Global Issues Problem Solving (GIPS)
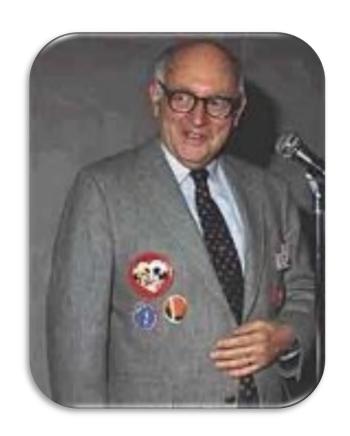
Explore upcoming opportunites!

Foundation of Future Problem Solving

Founded in 1974 by Dr. E. Paul Torrance, recognized worldwide for his work in creativity and education, FPS is based on the Creative Problem Solving (CPS) process developed by Alex Osborn & Sidney Parnes as applied to potential challenges of the future.

Future Problem Solving (FPS) provides competitive and non-competitive components for today's curriculum via a six-step model which teaches:
- **critical and creative thinking**
- **problem solving**
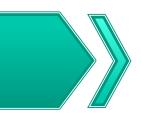- **decision making**

Goals of FPSPI Promote . . .

- Collaboration
- Communication skills
- Creative thinking
- Critical thought
- Environmental awareness
- Ethical leadership

- Flexibility and adaptability
- Futuristic thought
- Global competency
- Problem solving strategies
- Research techniques
- Real life experiences

FPSPI
FUTURE PROBLEM SOLVING PROGRAM
INTERNATIONAL

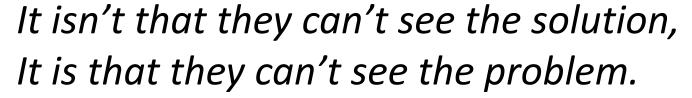FPSPI has problem solvers from around the globe

Austria, Australia, Canada, China, France, Hong Kong, Korea, New Zealand, Norway, Portugal, Singapore, Thailand, Turkey, and the United States of America.
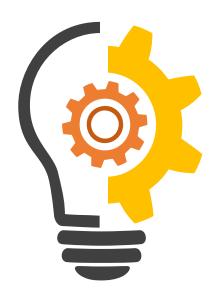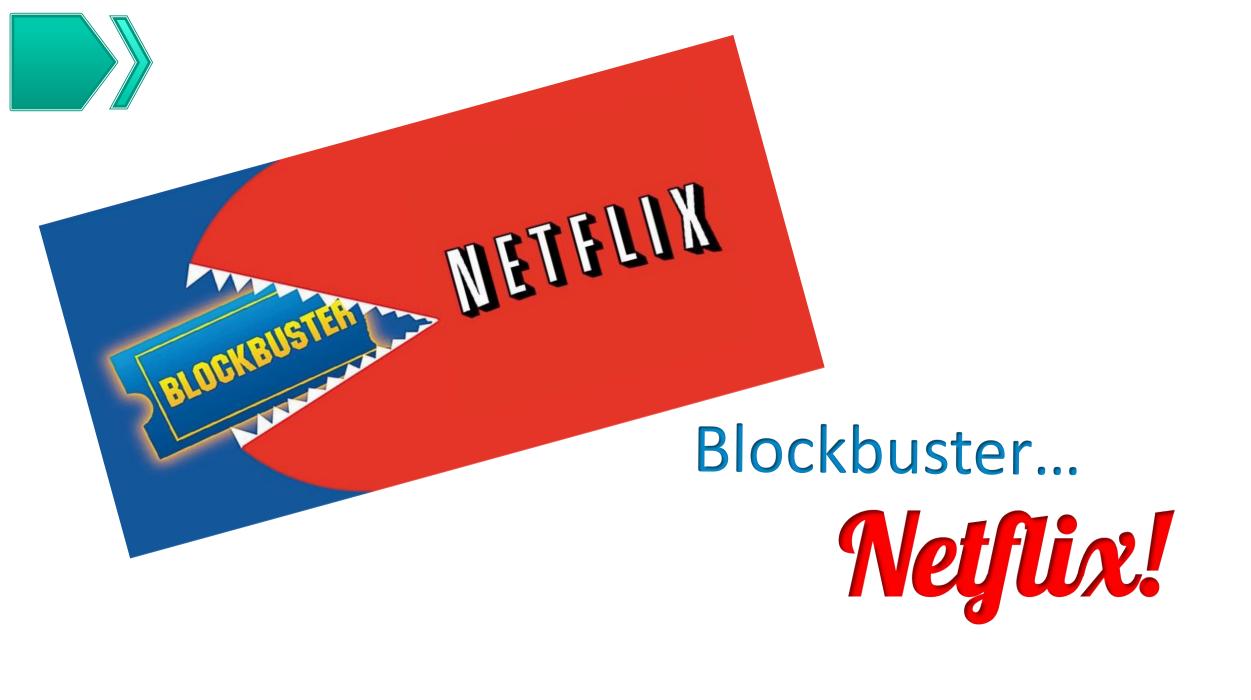
Futures Studies

Relevant for
- Students
- Society
- Creative endeavors

It isn't that they can't see the solution,
It is that they can't see the problem.

~G.K. Chesterton

Blockbuster…
Netflix!

Awareness of Global Issues

FPSPI helps students become more aware of a diverse range of contemporary global topics, including business and economics, science and technology, and social and political concerns affecting our world today.

Recent examples of topics covered include:

STEAM
- Agriculture
- Alternative Energy
- Artificial Intelligence
- Biosecurity
- Cyber Conflict
- Invasive Species
- Nanotechnology

Global Citizenship
- Climate Change
- Cultural Prejudice
- Environmental Law
- Food Loss & Waste
- Freedom of Speech
- Global Status of Women
- Orphaned Children

Social/Emotional
- Coping with Stress
- Healthy Living
- The Global Workplace
- The Impact of Social Media
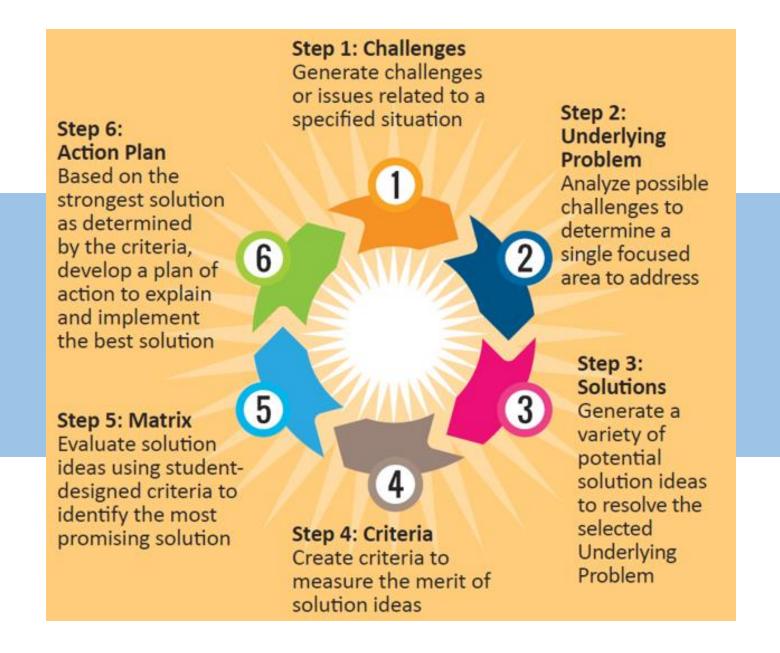- Rage and Bullying
- Sensory Overload
- Social Isolation

Components

Global Issues Problem Solving

Community Problem Solving

Scenario Writing

Scenario Performance

Problem Solving Model for Thinking

Step 1: Challenges
Generate challenges or issues related to a specified situation

Step 2: Underlying Problem
Analyze possible challenges to determine a single focused area to address

Step 3: Solutions
Generate a variety of potential solution ideas to resolve the selected Underlying Problem

Step 4: Criteria
Create criteria to measure the merit of solution ideas

Step 5: Matrix
Evaluate solution ideas using student-designed criteria to identify the most promising solution

Step 6: Action Plan
Based on the strongest solution as determined by the criteria, develop a plan of action to explain and implement the best solution

EFFECTIVE PROBLEM SOLVING RELIES UPON

Creative Thinking (divergent)

Generating new & many ideas

Principle of Deferred Judgment

Adapted from: Treffinger, D. J., Isaksen, S. G., & Dorval, K. B. (2006). Creative problem solving: An introduction. (4th Ed.). Waco, TX: Prufrock Press.

Guidelines for Generating . . .
Use deferred judgment

1. No *Criticism* or *Praise*…

2. Quantity

3. Combinations and improvements
   (hitchhiking or piggybacking)

4. Freewheeling
   (wild and crazy ideas are allowed!)

These guidelines are adapted from Treffinger, Isaksen, and Dorval (1994).

EFFECTIVE PROBLEM SOLVING RELIES UPON

Critical Thinking (convergent)

Focusing on the best idea(s)
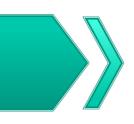
Principle of Affirmative Judgment

Guidelines for Focusing . . .
Use affirmative judgment

1. Be thorough, but positive.

2. Follow a plan using focusing tools.

3. Keep eyes on the goal.

4. Stay open to all ideas – looking for new and unusual possibilities.

These guidelines are adapted from Treffinger, Isaksen, and Dorval (1994).

The Gradual Release Instructional Model

I Do

We Do

You Do
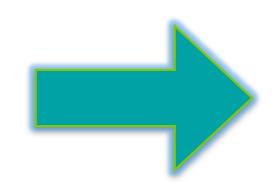
The Problem Solving Process

Research

and

Analyze

Situation

➢ **Identify Challenges**

➢ **Select an Underlying Problem**

➢ **Produce Solution Ideas**

➢ **Select Criteria**

➢ **Determine Best Solution(s)**

➢ **Develop an Action Plan**

Creative Problem Solving Example . . .

A simple sample using a common nursery rhyme to illustrate the problem solving process is best to use for the first time – no research necessary.

Current news articles, events in history, personal life issues, etc. can also be used.

Old Woman in a Shoe

There was an old woman
who lived in a shoe.
She had so many children,
she didn't know what to do.
She gave them some broth,
without any bread,
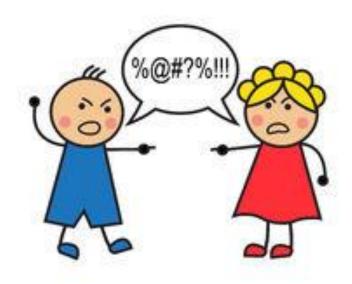whipped them all soundly,
and sent them to bed.

STEP 1 - Challenges

What challenges might an old woman living in a shoe experience?

Possible Challenges

1. Since the mother is old, she may not have the energy required to raise children.

2. Living in a shoe, especially if it is not large, may cause overcrowding as the children grow larger.

3. Living in a shoe may inspire other children to tease the shoe children, causing peer pressure.

4. The children may suffer malnutrition since they are only being fed broth.

STEP 2 – Underlying Problem (UP)

➢ Due to the fact that this family does not appear to have the resources to live in anything but a shoe,
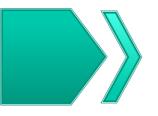
➢ How might we assist the old woman while raising her children

➢ so that they will grow up to be healthy?

STEP 3 – Solutions

1. The Early Childhood Family Education classes in the area will provide counseling for the old woman so she learns other options than spanking her children as discipline. *(Psychological Health)*

2. The mother will get a low interest rate loan to build onto the shoe. It may be an ankle high shoe but could be built up to be a high-top boot, providing extra living space for the family. *(Environment)*

3. The children will be taught how to pick up after themselves, how to help cook, clean, etc., in order to take some of the burden off of mom. *(Basic Needs)*

4. The mother will be given diet training, so she better understands the nutritional needs of her children. *(Physical Health)*

STEP 4 - Criteria

1. Which solution will provide the **most** financial support for the old woman and her family?

2. Which solution will **best** assist the long-term needs of the woman while raising her children?

3. Which solution will be accepted the **easiest** by the children?

4. Which solution will **best** nurture the psychological health of the family?

5. Which solution will be the **easiest** for the old woman to utilize?

STEP 5 - Apply Criteria

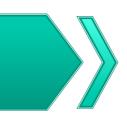| Solution Idea	Criteria #1	Criteria #2	Criteria #3	Criteria #4	Criteria #5	Totals
Classes	1	3	4	5	1	14
Loan	5	4	5	4	3	21
Empower Children	3	5	1	1	4	14
Diet Training	2	2	3	2	2	11
Community Center Nanny	4	1	2	3	5	15

STEP 6 - Action Plan

In order to assist the old woman in raising her children so they grow up healthy, the Small Business Association will …

This will allow her to …

It will also help to …

Another obstacle still to be overcome is …

The Gradual Release Instructional Model
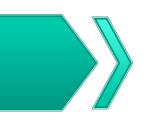
I Do

We Do

You Do

Currency Example . . .

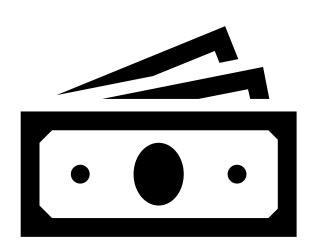Read the Future Scene example from the 2023 International Conference.

As you are reading, think about possible "challenges" that may arise from the events in this scenario.
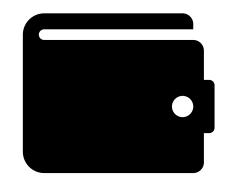
STEP 1: Challenges

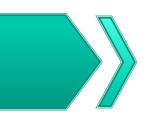What challenges might occur related to the currency situation in TT?

STEP 1: Challenges

Use the Silent Brainwriting Tool to help generate a variety of challenges.

Fluency and Flexibility are developed in this generating step!

Focus on the Underlying Problem

Within your team, mix and match the provided CP (black), KVP (red), and Purpose (blue) to develop a focused and adequate Underlying Problem.

STEP 2: Underlying Problem (UP)

➢ Since locals feel the use of Lagniappe decreases their economic freedom,

➢ How might we improve confidence in TT citizens for using the Lagniappe,

➢ so that TT residents can benefit from a stable economy in the years beyond 2052?

STEP 3: Solutions

➢ Every solution MUST address both the Key Verb Phrase (KVP) AND support the purpose

  ➢ Who will carry it out?

  ➢ How will it be done?

  ➢ Why will it solve the problem?

Morphological Matrix

	People/Agencies (WHO)	Action to be done (HOW)	Solution (WHY)
1	Market Analysists	Collaboration groups established with citizens, bank officials, government leaders, etc.	tourists will feel safe using the Lagniappe, resulting in increased confidence of the citizens (who rely so highly on tourism)
2	Artificial Intelligence (AI) developers	Provide a Funding Support System for those with low-wealth status	educate all stakeholders on other's views to increase awareness of pros/cons of Lagniappe
3	Government of TT	create Hack Prevention Software (HPS)	trust by citizens in increased resulting in increased usage and confidence
4	Scientists	Build a stronger blockchain with special algorithm to alert Gainda if security is breached	use of a special designated wallet could include incentives and boost use
5	Gainda, the TT central bank	Develop Tourist Wallet	gain support of people who are struggling financially, who will then support the Lagniappe
6	Concerned citizens	Hire social media influencers to post about experiences with Lagniappe	confidence in security raised while making transfers

STEP 4: Select Criteria

➢ **Correctly Written –**

➢ **"Which solution will . . .?"**

    ➢ **Single Dimension**

    ➢ **Desired Direction**

    ➢ **Superlative Degree (-st, best, least, etc.)**

    ➢ **Written as a question**

➢ **Applicability & Relevance**

STEP 4 : Select Criteria

CHEAT *– this is NOT teaching teams to cheat!*

- **C** = Cost (Which solution will cost the ==least== for the government of TT to implement?)

- **H** = Humaneness (WSW be the ==most== humane?)

- **E** = Efficiency (WSW be ==most== efficient for the citizens of TT?)

- **A** = Acceptance (WSW be accepted by the ==greatest== number of stakeholders?)

- **T** = Time (WSW be ==quickest== to accomplish?)

STEP 5: Applying the Criteria

➢ **Record solutions** (#/brief descriptor) = 8 rows

➢ **Use each criterion** (5 columns)

➢ **Rank each solution** from 5 (= best) to 1 (=least)

➢ **Total** across horizontal rows

➢ **Check addition!**

➢ **Highest mark** = Best Solution/Action Plan

STEP 5: Applying the Criteria

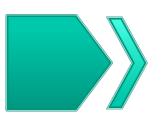| Solution Idea	Criteria #1	Criteria #2	Criteria #3	Criteria #4	Criteria #5	Total
Idea #1	5	4	5	1	1	16
Idea #3	1	3	4	5	3	16
Idea #5	3	5	3	3	5	**19**
Idea #7	4	1	2	2	2	11
Idea #8	2	2	1	4	4	13

Step 6: Action Plan is the development of Basic Solution Idea

- ➢ Details on how the plan will operate

- ➢ Timelines and tasks for implementing the plan

- ➢ How the plan will address the goal in the Underlying Problem and make a positive impact on the situation

- ➢ Overcoming potential roadblocks

Step 6

ALoU – Focusing Tool

Advantages	Limitations (including ways to Overcome)	Unique Features

Thinking Processes Infused in the Curriculum

Problem

Educators require an effective model to teach critical and creative thinking, problem solving, and decision-making, while also maintaining compatibility with state and national standards.
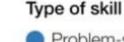
Future Problem Solving Program International (FPSPI) is a solution that meets these needs.

Solution

FPSPI is a research-based, academic program that teaches problem solving strategies, collaboration, critical and creative thinking, and effective communication. The interdisciplinary approach helps develop ethical leadership skills and provides a unique opportunity for students to learn and apply essential life skills in the 21st century.

Future of Jobs

Top 10 Skills of 2025

Type of skill
- Problem-solving
- Self-management
- Working with people
- Technology use and development

- Analytical thinking and innovation
- Active learning and learning strategies
- Complex problem-solving
- Critical thinking and analysis
- Creativity, originality and initiative

- Leadership and social influence
- Technology use, monitoring and control
- Technology design and programming
- Resilience, stress tolerance and flexibility
- Reasoning, problem-solving and ideation

Source: Future of Jobs Report 2020, World Economic Forum.

Get involved!

Future Problem Solving Program International, Inc.

**A non-profit 501(c)3 in the U.S.A.
with Affiliate & Mentored Areas around the world.
View the webpage for additional information and to locate
the FPS Affiliate Program in your area.**

www.fpspi.org