5-2023

Project CPS: Curriculum Content + Creative Problem Solving = Successful Integration

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Project CPS: **C**ontent + Creative **P**roblem Solving = **S**uccessful Integration

by

Kathleen C. Frazier

An Abstract of a Project
In
Creative Studies

Submitted in Partial Fulfillment
of the Requirements
For the Degree of

Master of Science

May 2023

Buffalo State
State University of New York
Department of Creative Studies

ABSTRACT OF THE PROJECT

Project CPS: **C**ontent + Creative **P**roblem Solving = **S**uccessful Integration

The goal of my master's project is to empower teachers to unlock the Creative Problem Solving potential in their students and open the door to a world of possibilities by providing strategies, resources, and support to integrate CPS into their teaching practice.

To achieve this, I have designed a book that presents an original and engaging approach to teaching the Creative Problem Solving process. Integrating storytelling and imaginative characters to foster an immersive and interactive learning experience that will capture the imagination of both students and teachers.

Meet the Spirit of Creativity, represented as E. Paul Torrance, along with four Creative Problem Solving Characters who will guide teachers and students through the Lands of Clarification, Ideation, Development, and Implementation. As they progress through the Land of Clarification, the Land of Ideation, the Land of Development, and the Land of Implementation, students earn a Key of Understanding by completing a Problem Solving Challenge.

To supplement the book, an accompanying Teacher Guide, which will be completed as an independent study, will provide extended learning experiences for each step of the CPS process and specific examples of how to integrate Creative Problem Solving into classroom content and standards.

Kathleen Frazier

Your Signature

May 30, 2023

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A Concept Paper in
Creativity and Change Leadership

by

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Dates of Approval:

May 3 2023

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May 3, 2023

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Dedications and Acknowledgements

Designing a book that is an original and engaging approach to teaching the Creative Problem Solving process to elementary / middle school students is a challenging endeavor.

Successfully completing my Master's project would not have been possible without the expertise and inspiration of my professors in the Department of Creativity and Change Leadership at Buffalo State University. Thank you to Dr. Gerald Puccio, Dr. Roger Firestien, Dr. David Yates, and Dr. Jo Yudess for sharing their amazing knowledge of Creative Thinking Strategies, Assessment, Research, Creative Problem Solving, and Change Leadership, and especially to Dr. Susan Keller-Mathers for her unending support, enthusiasm, and encouragement.

I am also sincerely thankful for my colleagues who have collaborated with me, shared brainstorming sessions, and provided feedback on this creative journey: Deborah Walker, Jean Metzger, and especially Elaine Reynolds. A special thank you to my artist, Brittany Trivelli, who helped bring my imaginative characters to life through her artwork, and the Future Problem Solving Program for helping to share my project with the coaches and students who participate in their program.

A special thanks to my cohort classmates, The Tiger Dogs, and my sounding board partners, Selma Yalazi-Dawani, Lakshmi Sithambaram, Samantha Monaghan, and Katie Raviich.

Last but not least, my family, Kori Frazier Morgan, Mark Frazier, and my Beagles, Flannery and Breezy, for their emotional support throughout all of my classes and assignments.

TABLE OF CONTENTS

LIST OF TABLES

SECTION ONE: BACKGROUND TO THE PROJECT

Introduction

Every morning, students from kindergarten through high school enter their classrooms to be inspired, challenged, and educated. These 21st-century students depend on their teacher's expertise to prepare them for a successful future. As my Master's project unfolds, my goal is to find ways to encourage teachers to unlock the creative potential in their students and open the door to a world of possibilities.

Turning back time, I was excited to begin my career as an educator teaching first, second, and third grade in a small country school called Brady Lake. As time passed, I completed my National Board Certification and an Educational Specialist Degree from Kent State University in Gifted Education. Since then, I have had the opportunity to coordinate, teach, and develop K-12 gifted programs and an Instructional Processes course for the Gifted Cohort at Kent State University. My LLC, Touching the Future Today, provides professional development for teachers.

Rationale

I have always "taught creatively," but it was not until I was introduced to the Future Problem Solving Program, https://www.fpspi.org/e-paul-torrance/ created by E. Paul Torrance, that I began to "teach for creativity." It was then that I saw firsthand how learning creative thinking skills and the Creative Problem Solving process empowered my students, challenged their thinking, and prepared them for their future in their personal lives and 21st-century careers.

Since then, it has been my passion and quest to discover ways to encourage creative thinking and Creative Problem Solving in schools. But how? In his TED Talk, *How to Escape Education's Death Valley*, Sir Ken Robinson, (2013) states, "Teachers are the lifeblood of the schools. There is no system in the world or our country that is

better than its teachers." He adds that teachers can provide a climate of possibilities that plants the seeds of creativity and innovation.

Joe Petraca, a member of the Ohio Department of Education, stated in an interview, "Trying to change the system at this point in time is too political, and those creating the policies are unfortunately not in classrooms; my suggestion would be to start with the teachers" (J. Petraca, personal communication, October 18, 2022).

Through my Creativity and Change Leadership courses, I have learned the basic principles and research underlying creativity and strategies that support creative thinking skills and the Creative Problem Solving process. How might I share these findings with classroom teachers?

This led me to the "Big Question" for my Master's project: **What are the best ways to encourage creativity and Creative Problem Solving in schools**? The hypothesis I will explore states: **When teachers are knowledgeable about the basic principles and research underlying creativity and are provided strategies, resources, and support, then they will be empowered to integrate creativity into their teaching practice.**

My prior experiences will be beneficial in helping to support my Master's project.

1. Co-author of the following publications:
    - 1988: *Cre-EGG-tivity Plus*, N. L. (Nathan Levy) Publications
    - ·2012: *Power Up Your Creative Mind*, published by Pieces of Learning Press
    - 2016: *And Now You Know Too! The Story of How the Black Squirrel Came to Kent,* Published by Pieces of Learning Press. (It has sold over 2,500 copies.)
    - ·2020: *Into the Future, A Scenario Writing Guide for Students*, published by the International Future Problem Solving Program.

- 2000 - 2023: *Topic Activity Units* published each year by the International Future Problem Solving Program.

2. Professional Development for Teachers: (LLC, Touching the Future Today)
    - Workshops for school systems and Educational Service Centers
    - Presentations at State, National, and World Gifted Conferences and the World Futurist Conference

Project Direction

My mind was whirling about where to go from here. Where to start? Whoever thought too many ideas would be a challenge? “Select just one” was the advice I was given, but I was passionate about my top two project ideas; to create a children’s book that would focus on the Creative Problem Solving process and to develop a new book that would take my thinking beyond the scope of my previously published book, *Power Up Your Creative Mind,* (Frazier & Reynolds, 2012). This new book will allow me to integrate research findings and new thinking skill strategies acquired through my Buffalo State courses. My final decision is to combine the ideas into one project.

To narrow my idea, I will focus on writing the Creative Problem Solving chapter of a book that I will complete (beyond the scope of my Master’s Project). The chapter of the book will provide a framework for K-12 teachers to integrate the Creative Problem Solving process into their content areas in all disciplines. It will be published by the International Future Problem Solving Program, with whom I have had the opportunity to work extensively. To design this chapter to be more original, it will begin with a story told by the “Spirit of Creativity.” I will work with an artist to develop a prototype of this character. This strategy will also be a way to infuse an affective touch and research into the introduction of the CPS chapter I am writing. (This chapter will develop a format for the other chapters of the book as I extend the scope of the project)

I am the Spirit of Creativity
This challenge I impart
Awaken me in your students,
And learning will come from the heart.

This idea came to me after reviewing current instructional teaching resources. I wondered how I could make this chapter more original? What could I create that would go beyond instructional pages for teachers to duplicate? What could I add that would touch their Creative Spirit?

After reading the E. Paul Torrance article on *The Importance of Falling in Love with Something.* (Torrance,1980), I made my decision.

> "Sometimes a story—even a fantasy—can capture the essence of a problem such as this and distill the truth more powerfully than our most sophisticated researchers and our fastest and most complex and ingenious computers."
>
> ~ E. Paul Torrance

Personal Goals

1. To synthesize the knowledge, principles, creative thinking skills, and CPS strategies I have learned in my courses at Buffalo State to create an original and engaging resource for teachers and their students
2. To collaborate and network with creative colleagues for ideas and feedback related to my Master's project
3. To explore children's literature with an inspiring message for educators and students as inspiration for writing the introduction to my chapter.

How Will This Project Add to My Quality of Life and Others?

My Master's project will enhance the quality of education by providing teachers with the knowledge and strategies to better prepare their students for 21st-century careers as creative thinkers and problem solvers. The Economic Forum Survey revealed that Analytical Thinking and Innovation, Active Learning, Complex Problem Solving, Critical Thinking, and Creativity are among the top five skills required for future careers (Economic Forum, 2020).

The Partnership for 21st-century Learning Framework also emphasizes the importance of infusing Learning and Innovation skills into today's curriculum. These skills include Creativity, Collaboration, Critical Thinking/ Problem Solving, and Communication. (Battelle for Kids, 2019).

Unfortunately, our educational system today continues to be based on a model developed during the Industrial Revolution. Our teachers feel pressure to focus on the Knowing and Understanding levels of Bloom's Taxonomy for their students to perform well on standardized tests. They are evaluated each year on the data reported from these tests. In 1945, the knowledge doubling rate was every 25 years. Today, the doubling rate of knowledge is every 11-12 hours (Ray, 2020). There is a need for educational reform, a shift from students as consumers of knowledge to creators of new knowledge and learning experiences that inspire curiosity, wonder, creativity, and problem solving. My proposed master's project will be a step in creating change, teacher by teacher.

SECTION TWO: PERTINENT LITERATURE & RESOURCES

To lay the foundation of research and resources for my Master's project, I will investigate seven key areas of inquiry related to encouraging teachers to integrate creative thinking skills and Creative Problem Solving into their practice.

1. Understanding the basic principles and research underlying creativity
2. The Four P's - Creating a Responsive Learning Environment
3. The Creativity Crisis: The absence of creativity in our educational system
4. Teaching Creatively or Teaching for Creativity
5. Creative Thinking Skills
6. Models of the Creative Problem Solving Process
7. Children's Literature

My First Area of Inquiry

Teachers will be more likely to integrate creativity into their practice if they understand the basic principles and research underlying creativity. My research investigates and dispels the myths related to creativity, including: The definition of creativity (it is more than a focus on the Arts), only special people are born creative, and the belief that creativity cannot be taught.

Treffinger, D., Schoonover, P., & Selby, E. (2021). *Creativity and innovation.* Routledge Publishing.

The book *Creativity and Innovation* is a comprehensive guide that includes research addressing the foundations of creativity, developing and assessing creativity, creative thinking tools, and connections to the classroom. The book presents common myths that lead to misunderstandings and a lack of acceptance

by educators and supports the importance of teachers understanding the basic principles of creativity.

Aljughaiman, A., & Mower-Reynolds, E. (2011). Teachers' conceptions of creativity and creative students. *Journal of Creative Behavior*, *39* (1), 17–34. https://eric.ed.gov/?id=EJ948821

This research study examines elementary school teachers' perceptions of their attitudes, beliefs, and classroom practices. The study's results found multiple misconceptions related to inaccurate concepts, strategies in the classroom, and practice regarding what defines creativity.

Firestien, R. (2020). *Create in a flash.* Green Tractor Publishing.

Dr. Firestein presents an overview of the misconceptions regarding creativity in a clearly stated and easy-to-read format. The book addresses the three myths that may prevent teachers from integrating creativity into their practice.

Kaufman, J. C., & Beghetto, R. A. (2009). Beyond big and little: The Four C Model of creativity. *Review of General Psychology*, *13*(1),1–12. **https://doi.org/10.1037/a001368**

Dr. James C. Kaufman and Dr. Ronald Beghetto developed the Four C's Model that builds on the definition of creativity by adding that creativity can occur on different levels. Many teachers believe creativity is related only to the accomplishments of historical figures such as Thomas Edison or the Wright Brothers, so why integrate it into their practice? The model supports creativity as an essential piece of the learning process.

- The mini-c level of creativity**:** Creativity is inherent in learning. Any time one attempts a new task, there is a level of creativity involved. At the mini-c

level of creativity, what one creates might not be revolutionary, but it is new and meaningful to them.

- The little-c level of creativity: The little-c level of creativity reflects an aspect of growth from the Mini-c level. With appropriate feedback, advancements are made, and what was created might be of value to others.
- **The Pro-c level of creativity:** At this level, one has the ability to be creative at a professional level and in a professional venue. At this point, one would have had many years of deliberate practice and training. Not everyone at the Pro-c level can make a living with their creative pursuit; however, it is generally the goal of those at this level to support themselves by doing something they love.
- **The Big-C level of creativity:** Those at the Big-C level will be remembered in the history books. The Big-C level includes an evaluation of one's entire career and the entire body of work evaluated against other great contributors.

Noller, R., & Parnes, S. (1972). Applied creativity: The creative studies project. *The Journal of Creative Behavior*, *6*(4), 225–301. https://doi.org/10.1002/j.2162-6057.1972.tb00939.x

The Creative Studies Project, a research study conducted by Sidney Parnes and Ruth Noller between 1969 and 1971, proved that creativity is an ability that can be taught and learned. The study was performed with freshmen taking creativity classes over four semesters. As a result, they performed significantly higher than the control group in convergent and divergent thinking.

Ritter, S. M., Gu, X., Crijns, M., & Biekens, P. (2020). Fostering students' creative thinking skills by means of a one-year creativity training program. *PLoS ONE, 15(3),* e0229773 https://doi.org/10.1371/journal.pone.0229773

This one-year study, a training program for higher education, concluded that the ability to think creatively could be taught and developed and that creativity is not a fixed, inborn trait. The creativity training increased ideation skills and cognitive flexibility. There was no increase in original thinking. This study discusses how the results might be applied to educational settings. Ideas for future research are presented.

Scott, G., Leritz, L. E., & Mumford, M. D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal,16(*4*),* 361–388. https://www.tandfonline.com/doi/abs/10.1080/10400410409534549

Scott, Lyle, Leritz, and Mumford identify several dependent variables of their study, including Divergent Thinking, Creative Problem Solving, and Attitudes and Behavior. These studies support providing professional development to teachers, including strategies to infuse creative teaching methods and the Creative Problem Solving process into their practice. The study concludes that It is important for teachers to understand that creativity can be nurtured and developed in students rather than assuming that it is a fixed trait that some students possess and others do not. Encouraging open-ended problem-solving, divergent thinking, and risk-taking can foster a more creative classroom environment.

My Second Area of Inquiry

My second area of inquiry focuses on the Four P's Model and its importance in developing a Responsive Learning Environment that supports creative thinking and teaching the Creative Problem Solving Process.

Fox, J., M., & Fox, R. L. (2019). *Exploring the nature of creativity.* Kendall Hunt Publishing Company.

The goal of this book is to provide an introduction to creativity. The authors have done an excellent job providing an overview and have designed this book with a focus on the Four P's Model. (Person, Process, Press, and Product) There is an emphasis on creativity as a broad transdisciplinary field. A complete dictionary of Common Creativity Terms is included at the end of the book.

Miller, B. Vehar, V., Firestien, R., Thurber, S., & Nielson, D. (2011). *Creativity unbound.* FourSight LLC.

This book focuses on the Four P's, developed in 1961 by Mel Rhodes, who wanted to create a more all-encompassing approach to defining creativity. The model includes four strands that work in unity: Person, Product, Process, and Press. The relationship of each area is explained and elaborated.

Person = how people are creative; how creative someone is, the characteristics associated with creative people.

Product = the artifacts of creativity; what is a creative product; what makes something creative; how can you tell if something is creative

Process = how people create or can use and apply their creativity

Press = the climate surrounding person, process, and product, in which creativity flourishes or is squelched

Rhodes, M. (1961). An analysis of creativity. *The Phi Delta Kappan,42*, 305–310. https://scirp.org/reference/referencespapers.aspx?referenceid=631633

In this study, Mel Rhodes conducted research at the university level focusing on the effectiveness of the Four P's Model as a basis for instructional design that teachers can use for curricular planning. The Four P's Model used in the study revealed that the Four P's Model enhanced student learning.

My Third Area of Inquiry

My third area of inquiry focuses on research related to the adverse effects that result from the absence of creativity in our educational system.

Land, G. (2011). The failure of success. [Video] TEDXTuson. YouTube. https://youtu.be/ZfKMq-rYtnc

This TEDX Talk explains the longitudinal research study conducted by George Land in 1968. He tested 1,600 students at ages three to five, ten years old, and again at 15. The study revealed that 98% of three- to five-year-olds possessed creative potential; at age 10, the percentage was 38%, and at age 15, it dropped to only 12%. Adults given the same assessment scored at only 2%. George Land concluded that non-creative behavior could be learned.

Kim, K. H. (2011). The creativity crisis: The decrease in creative thinking scores on the Torrance Tests of Creative Thinking, *Creativity Research Journal, 23:*4*,* 285–295. DOI: 10.1080/10400419.2011.627805

Each step of Dr. Kim's research study is explained. The sampling included K- 12

students through adults and revealed that since 1990, creative thinking scores have significantly decreased. The Torrance Test of Creative Thinking was the measurement tool used in the research study. It has been normed five times since 2008. Kim hypothesizes that this is a result of implementing standardized thinking. Kim suggests reclaiming American education to include opportunities for creative and novel thought, participation in active critical discussions, and support from parents and teachers for students to pursue creative endeavors.

My Fourth Area of Inquiry

My fourth area of inquiry focuses on “teaching creativity” or “teaching for creativity.”

Battelle for Kids (2019). Frameworks and resources: Framework for 21st century learning. https://www.battelleforkids.org/networks/p21/frameworks-resources

This website presents a graphic of the P21’s Framework for 21st-century learning graphic. The Framework was developed with input from teachers and experts in the fields of education and business. It illustrates the skills students will need for success in work and life.

Jeffrey, B., & Craft, A. (2004). Teaching creatively and teaching for creativity: Distinctions and relationships. *Educational Studies*. *30 (*1*),* 77–87. https://doi.org/10.1080/0305569032000159750

This research study examines the relationship between teaching creatively and teaching for creativity. It refers to The National Advisory Committee report on Creative and Cultural Education developed in 1999, which clearly distinguishes the two. "Teaching creatively" is defined as using imaginative approaches to make learning more exciting and effective. (ibid. p. 89). "Teaching for creativity" is a

form of teaching that intends to develop students' creative thinking and problem solving. The distinction has been valuable in highlighting the importance of "teaching for creativity." The study was conducted at the Early Years School, and data collection involved qualitative methods over seven weeks, including interviews, field notes, school policy, and national test results. Examples of both types of creative teaching observed are described.

Burnett, C., & Schnapp, L. (2021). *20 lessons to weave creative thinking into your curriculum.* Creativity and Education.

This book provides an introduction to the Torrance Incubation Model. The Torrance Model is organized with three steps to planning creative lessons; Heightening Anticipation, Deepening Expectations, and Extending Learning. Each lesson includes a creativity objective from Torrance's Creativity Skill Set as part of the model. Each chapter of the book provides examples of how this model can be integrated into all disciplines. Sample lessons from 15 teachers around the world are included.

Noller, R., & Parnes, S. (1972). Applied creativity: The creative studies project. *The Journal of Creative Behavior. 6*(4), 225–301. https://doi.org/10.1002/j.2162-6057.1972.tb00939.x

The Creative Studies Project, a research study conducted by Sidney Parnes and Ruth Noller between 1969 and 1971, proved that creativity is an ability that can be taught and learned. The study was performed with freshmen students who took creativity classes over the course of four semesters. As a result, they performed significantly higher than the control group in convergent and divergent thinking.

Torrance, E. P. (1980). Growing up creatively gifted: A 22-yr longitudinal study. *Creative Child & Adult Quarterly, 5*(3), 148–158, *170.* https://psycnet.apa.org/record/1982-01020-001

Torrance conveys the importance of allowing yourself to become passionate about something you love. To dream about the future and plan gives us the energy to accomplish our goals. Torrance discusses the power of storytelling.

My Fifth Area of Inquiry

My fifth area of inquiry focuses on teaching creative thinking skills.

Miller, B., Vehar, J., Firestien R, Thurber, S. & Nielsen D. (2011). *Creativity unbound.* FourSight LLC.

An explanation of divergent and convergent thinking and their role in each step of the Creative Problem Solving process. It is a go-to manual for idea-generation tools that teach creative thinking skills. The final chapters present strategies for keeping your creativity fresh and authentic examples from companies that have successfully implemented creative thinking tools. A list of books, videos, Websites, and blogs will guide the reader in extended research. Tools for diverging include: Brainstorming, Stick 'em Up Brainstorming, Brainwriting, Forced Connections, Word Dance, SCAMPER, The Idea Box, Visual Connections, Why? What's Stopping You? and Excursions. Converging tools presented include Highlighting, Restating Clusters, Praise First, POINt, Evaluation Matrix, and Card Sort.

Puccio, G. (2014). *The creative thinker's toolkit.* The Great Courses.

This book is also available as an audible with Dr. Puccio presenting his 24 lectures ranging from creative thinking tools to systematically generating ideas to steps of the Creative Problem Solving Process. He discusses the importance of a responsive learning environment, emotional intelligence, and transformational leadership. Each lecture provides resources on the topic and activities to reinforce what the reader has learned.

Starko, A. (2022). *Creativity in the classroom: Schools of curious delight* (7th ed.). Routledge.

Part One provides an overview of understanding creativity. Some topics covered include: The Creative Process, Theories and Models related to creativity and cognition, the Neuroscience of Creativity, and the importance of Play and Curiosity in supporting creative children. Part Two addresses Creativity and Classroom Life. It addresses Creativity in Content Areas and Creativity and Classroom Standards. The book emphasizes that they tell you what to teach, but they don't tell you how to teach! Curriculum Standards, using Creative Problem Solving in different disciplines, Divergent Thinking Skills, Visualization, and Assessment are presented.

Torrance, E.P. (1979). An instructional model for enhancing incubation. *Journal of Creative Behavior, 13*(1), 23–35. https://onlinelibrary.wiley.com/doi/10.1002/j.2162-6057.1979.tb00186.x

The Torrance Incubation Model was developed to provide teachers with a framework to integrate creativity into their classrooms. The framework of the model is threefold, beginning with Heightening Anticipation, Deepening

Expectations, and Extending Learning. Torrance's sixteen skill sets provide a creative objective for teachers to add to their lessons.

My Sixth Area of Inquiry

My sixth area of inquiry focuses on the Creative Problem Solving Process and Models to teach the process.

Firestien, R. (2020). *Create in a flash*. *A leader's recipe for breakthrough innovation.* Green Tractor Publishing.

This book explains each step of the Creative Problem Solving process and provides supporting details valuable in implementing CPS, such as when to diverge and converge in your thinking. The following are the steps of this model:

1. Clarify the Problem
2. Generate Ideas
3. Develop Solutions
4. Plan for Action

Firestien, R. L. (2019). *Create in a flash: A leader's recipe for breakthrough innovation.* Green Tractor Publishing.

Dr. Firestien presents the FourSight Model developed by Gerard Puccio and Blair Miller in 2011. He states that this model is the most recent advancement in CPS. The model has four basic steps.

1. Clarify
2. Ideate
3. Develop
4. Implement

Future Problem Solving Program International. (1974–2023). The Future Problem Solving Six Step Model. https://www.fpspi.org/e-paul-torrance/

E. Paul Torrance and his wife Pansy founded the Future Problem Solving Program in 1974. The program is now a global competition with thousands of students participating. The FPS model included the following steps:

1. **Identify** challenges related to the topic or Future Scene
2. **Select** an Underlying Problem
3. **Produce** solution ideas to the Underlying Problem
4. **Generate** and select criteria to evaluate solution ideas
5. **Evaluate** solution ideas
6. **Develop** an Action Plan

Isaksen, S. G., Dorval, K. B., & Treffinger D. J. (2000). *Creative approaches to problem solving: A framework for change.* Kendall/Hunt Publishing Company.

This text provides a wealth of strategies and humorous diagrams that clearly explain creative thinking tools and the steps of the Creative Problem Solving Process. The book's organization makes it easy to read. Each chapter begins with the purpose and list of objectives. Research by seminal scholars such as Ruth Nollar is included. After presenting the CPS process, the book provides examples of CPS applications and tips on how to be successful when facilitating the process. The three-step process CPS process format is listed below. The book breaks down each step and elaborates in detail on what can be taught.

1. Understanding the Challenge

2. Generating Ideas
3. Preparing for Action
4. Planning Your Approach

Miller, B., Vehar, J., Firestien, R., Thurber, S., & Nielsen, D. (2011). *Facilitation: A door to creative leadership.* 4th Edition. FourSight LLC.

This book was designed as a training manual to provide guidelines to facilitators as they lead resource groups through the steps of the Creative Problem Solving Process. How to prepare and understand the dynamics of the session from beginning to end is covered. A CPS toolbox of Divergent Thinking and Convergent Thinking skills is included, along with worksheets to plan and support working with a client.

Puccio, G. J., Mance, M., Switalski, L. B., & Reali, P. D. (2013). *Creativity rising: Creative thinking and creative problem solving in the 21st century.* ICSC Press and International Center for Studies in Creativity.

The Thinking Skill Model provides a step-by-step guide to Creative Problem Solving. It is comprised of three conceptual stages:

Stage One: Clarification Stage: Exploring the Vision and Formulating Challenges

Stage Two: Transformation Stage: Exploring Ideas and Formulating Solutions

Stage Three: Implementation Stage: Exploring Acceptance and Formulating a Plan.

Each stage is designed to move from broader concepts to concrete outcomes.

Treffinger, D., & Isaksen, S. (2013). Teaching and applying creative problem solving: Implications for at-risk students. *International Journal for Talent Development and Creativity*, *1*(1) 57–68. https://doi.org/10.21061/ijtdc.v1i1.a.5

Treffinger's Creative Learning Model supports "teaching for creativity." The model can be integrated into any discipline, engaging students and preparing them for their future. Treffinger believes it is important to teach this model to high-risk students. It is composed of three levels:

1. Learning Basic Thinking Tools
2. Learning and Practicing Problem Solving Models
3. Dealing with Real Problems and Challenges.

My Seventh Area of Inquiry

My seventh area of inquiry focuses on Children's Literature. I will be exploring children's books that focus on teaching creatively and teaching for creativity. Stories with an affective message that will inspire teachers to think about the importance of teaching for creativity. These books, songs, and videos will provide my inspiration. I will review the following:

- Chapin, H. (197) *Flowers are Red. Elektra Records singles.* Flowers Are Red
- Levy, N. (1982) *There Are Those.* N. L Publications
- Reynolds, P. (2003). *The Dot.* Fable Vision.
- Reynolds, P. (2004). *Ish*. Fable Vision.
- Reynolds, P. (2004). *He Was Me.* Fable Vision. He Was Me
- Reynolds, P. (2004). *Above and Beyond.* Fable Vision. Above and Beyond
- Tomada, K. (2014) *What Do You Do with an Idea?* Compendium Publishing
- Tomada, K. (2016)) *What /do You do with a Problem?* Compendium Publishing
- Tomada, K. (2018) *What Do You Do with a Chance?* Compendium Publishing
- Tomada, K. (2023) *Nothing.* Compendium Publishing

SECTION THREE: PROCESS PLAN

The goal of my Master's project is to write the Creative Problem Solving chapter for an instructional guidebook on integrating creativity into the classroom curriculum. I have developed the plans for this chapter using the Torrance Incubation Model (Torrance, E.P., (1979).

Step One: Heightening Anticipation

Design a creative story to introduce the chapter. This will require some incubation time! I have established the following criteria to guide my creative encounter:

- The story must be engaging and incorporate an affective message.
- The story must include an element of research related to the theme of the chapter.
- The chapter's main character is the "Spirit of Creativity." The design of this character's personality must embody traits of creative people, such as high energy, curiosity, risk-taking, playfulness, imagination, and openness to new experiences.
- The story must begin with a lesson a teacher or student needs to learn about integrating the Creative Problem Solving process into her practice, and the conclusion to the story must be inspirational. It will send a message about the value of teaching CPS to prepare students for their future. (spoiler) The ghosts of Dr. E. Paul Torrance may appear in the story.
- The story may involve students in discrepant events.

Step Two: Deepening Expectations

This section of the chapter will focus on an introduction to teaching the steps of the Creative Problem Solving process. To create an engaging and playful learning

experience, the four steps of the CPS process will be personified and represented by caricatures that students will meet and get to know as they progress through learning the framework of the Creative Problem Solving process.

Each CPS character will explain their step of the process. (Visualizing it Richly and Colorfully) The CPS model I will use is FourSight. I will combine components of the Future Problem Solving format into the description since they will publish the book.

- Character One will represent the Clarify
- Character Two will represent Ideate
- Character Three will represent Develop
- Character Four will represent Implement

*(Making It Ring, Making It Swing): To emphasize that CPS is a step-by-step process, Whitney Huston's song *Step by Step* may be played and the lyrics discussed. This will help creative students not to feel overwhelmed since they often see the whole picture rather than breaking challenges down into smaller steps.

I will integrate Convergent and Divergent Thinking and the higher levels of Bloom's Taxonomy into the lessons.

Step Three: Keeping it Going / Extended Learning

This section of the chapter may be completed as an independent study if time does not permit the completion during the master's project timeline. This section of the chapter presents extended learning experiences that will help teachers create an Action Plan to integrate the CPS process into their content areas.

- Two suggested strategies for teaching the CPS process: Direct Instruction and Practice Lessons or teaching the CPS process by integrating the steps/ skills into lessons and content

- Curriculum Connections: Examples of CPS integrated into classroom content: Language Arts, Math, History, Science
- Story Templates to teach each step of the process
- Classroom Communication - The Parent Connection: A Parent Newsletter
- Metacognitive Moments: Reflection Sheets
- Resources to further explore the Creative Problem Solving Process

Collaboration

I plan to collaborate with my co-author of *Power Up Your Creative Mind* and the *Future Problem Solving Topic Activity Units*, Elaine Reynolds. Deborah Walker, my LLC partner in *Touching the Future Today,* and Selma Yalazi-Dawani, will be my "Sounding Board." Artist, Brittany Trivelli, will bring my concept of the "Spirit of Learning" and the Problem Solving Characters to life.

Goals and Outcomes

I will know that my Master's project has been successfully completed when I reach the following benchmarks:

1. I have created the Spirit of Creativity.
2. I have developed four Problem Solving Characters.
3. I have written an imaginative and engaging story to begin the chapter.
4. I have taught the CPS process through the Problem Solving Characters.
5. If time permits, I will develop extended learning activities.

Evaluation Plan

To evaluate the outcome of my Master's project and verify that my learning goals were met and the intended outcome was achieved, I will initiate the following:

The completed CPS chapter will be evaluated by the Future Problem Solving editor of resources, Sharon Dwyer, and April Dennis, executive director of the program.

The Future Problem Solving Program reaches 250,000 students in 35 states and 15 countries.

As the gifted education specialist at Orange City Schools in Ohio, I have the opportunity to provide professional development to K-12 teachers. I will identify teachers who would like to learn about the CPS process and invite them to review the chapter and integrate the process into their classrooms. The feedback they provide will be valuable from a teacher's perspective.

As a member of the Ohio Association for Gifted Students and the National Association of Gifted Children, I will complete a proposal to present at the yearly conference. Acceptance to present will provide the opportunity to share my CPS chapter with a more far-reaching audience, including classroom teachers, gifted intervention specialists, gifted coordinators, and administrators.

Feedback from the above sources will be beneficial for editing and revision purposes and will be an opportunity for personal growth as a writer and teacher.

1. Do sections of the chapter need more clarification or depth?
2. Does the feedback validate the content of the chapter related to integrating creative thinking skills and CPS into classroom lessons and the curriculum?
3. Are there suggestions/ ideas provided to improve the content of the chapter?

Originality

My Master's project is original because it is formatted using the Torrance Incubation Model. The chapter combines storytelling, instruction, and specific examples for integrating the CPS process into the classroom curriculum. The "Spirit of Learning " character adds an affective component and research to the chapter's introduction that will inspire teachers to integrate the CPS process into their practice. Teaching the Creative Problem Solving process through personified caricatures is an original

approach that will engage students in learning this challenging process. The visuals can be used as instructional references displayed in the classroom. Teachers may add a touch of drama to the introduction of each caricature by role-playing.

I will reflect on the development of my Master's project; a journey of discovering new research, overcoming challenges, collaborating with colleagues, the value of incubation time and aha moments, support from my advisor and Tiger Dogs, and the exhilaration of completing a chapter that addresses my Big Question, When teachers are knowledgeable about the basic principles and research underlying creativity and are provided strategies, resources, and support, then they will be able to integrate creativity into their teaching practice.

Creativity is now as important in education as literacy, and we should treat it with the same status. ~ Sir Ken Robinson

TIMELINE CHART:

Month	Date	Plans and Accomplishment	Total Hours
		Clarifying My Project - Divergent and Convergent Thinking	
December	**27**	Consulting with Dr. Susan Keller-Mathers	**1 ½**
January	**1 - 21**	Incubation Time - Masters Project Ideas	**10**
January	**20 -21**	Development of a Brainstorming idea and research chart using Jam board,	**2**
January	**22**	Brainstorming: (Soundboard) Selma Yalazi-Dawani	**2**
January	**24**	Consulting with Cyndi Burnett	**1**
January	**25 - 27**	Writing: Finalized Master's Project and Concept Paper, Part 1	**6**
January/ February	**27 - 4**	Concept Paper - Part 1 - Identify Resources Annotated Bibliography (Ongoing)	**10**
February	**4 -12**	Developing Concept Paper: Part 3	**5**
February	**12 - 13**	Finalizing Concept Paper	**10**
Month	**Date**	**Plans and Accomplishment**	**Total Hours**
February	**13**	**Concept Paper Due: Editing/Revisions**	**2**
February / March	**Ongoing**	Continued Research / Literature Review Ongoing/ Incubation	**15**
		Ideation Period - Divergent Thinking	
February	**14 -28**	Incubation: Character Development - Spirit of Creativity	**Four Weeks**
February	**12**	Collaboration with Elaine Reynolds- Brainstorming chapter ideas.	**5**
February	**19**	Meet up with artist: Brittany Trivelli	**3**
February	**19**	Collaboration - Elaine Reynolds: Brainstorming ideas for the Problem Solving Characters.	**2**

February March	**19 - 3**	Incubation: Character Development - Personification of CPS Steps for the instructional section of the chapter.	**Ongoing**
March	**4 -10-**	Incubation time: Chapter Introduction story	**One Week**
		Development: Convergent Thinking Immersed in Project Development	
March	**10- 14**	Masters Project Immersion (Melbourne, Florida)	**4 Days**
March	**10 -14**	Finalize the Creative Spirit Character	**5**
		Finalize the Problem Solving Characters and write a bio	**5**
		Develop the story for the Introduction chapter told by the Spirit of Creativity (Heightening Anticipation)	**12**
		Outline the chapter: Teaching the CPS process (Deepening Expectations)	**15**
		Meetings with the artist to finalize characters.	**6**
March	**13**	Informal Evaluation: Meet with April Dennis, executive of the **Future Problem Solving Program** to review the chapter.	**2**
March	**14 -31**	Complete chapter development. Identify resources and create extended learning experiences to teach the CPS process.	**8**
		Implement: Finalize the Master's Project: Convergent and Divergent Thinking Editing, New Ideas, Resources	
April	**1-10**	Work on Implementing the Project	**40**
April	**12**	**Bring an electronic draft of section 4-6 to class**	
April	**13 - 23**	**Continue to work on Section 4-6 and Implementation**	**25**
April	**23**	**Submit Section 4-6**	
April	**24 - 30**	**Complete Masters project**	**15**
April	**26**	**Bring an electronic copy of the entire document to class**	
May	**1**	**Submit Completed Master's Project (review)**	**5**

May	**2-8**	**Write an abstract of the Master's Project**	**3**
May	**8**	**Upload approved document to Digital Commons**	**1**
May	**17**	**Formal Presentation**	**7**

EXTENDING THE SCOPE OF MY MASTER'S PROJECT

My plan is to revise and expand the concepts presented in my previous publication, *Power Up Your Creative Mind* (Frazier & Reynold, (2012), by including updated research, adding to the Creative Thinking Skills presented, and including the Creative Problem Solving Process. The following is an overview of my vision for the book that identifies revisions and additions for each chapter as a starting point for an eventual new book directions.

Starting Point: Revisions and Additions	Pages
Change is on the Horizon ● Addition: Economic Forum ● Partnership for America's Future (the 4 C's) ● Revised Bloom's Taxonomy ● Creativity Crisis (Kim) ● Reinventing Education	Pages 8, 9, 10, 11
Chapter One: Creating a Responsive Learning Environment ● Addition: Dispelling the Myths ● Addition: The Four C's (Dr. James C. Kaufman and Dr. Ronald Beghetto) ● Creating a Responsive Learning Environment - Teacher Checklist	Pages 13 -16
Chapter Two: Brain Power This chapter needs major revisions due to the neuroscience research dispelling the Right Brain Left Brain Theory	Pages 17 -41
Chapter Three: Relaxation ● This chapter will be revised to focus on Mindfulness and the relationship to Creative Thinking and Creative Problem Solving. ● This may be a good place to insert the Wallas Model	Pages 43 -80
Chapter Four: Visualization This chapter focuses on visualization as a tool to activate the imagination and as a goal-setting tool. ● I will do additional research in this area and add the Vision Board/ Meditation from our course. ● Additional classroom lesson examples may be added	Pages 81- 116
Something to Consider: It could be an interesting idea before	

the chapter on Creative Thinking Tools, including “Teaching Creatively” and “Teaching for Creativity.” Would the TIM Model fit here?	
Chapter Five: Creative Thinking Tools The following Creative Thinking Tools and sample lessons are taught along with sample lessons. Brainstorming, The FPS Category List, SCAMPER. The following revisions will be added: ● Brainstorming: The following brainstorming strategies will be added. Brainwriting, Stick’em Up Brainstorming, Carousel Brainstorming. ● The book will be expanded to include the following Creating Thinking Tools.	Pages 118-206
Chapter Six: The Creative Problem Solving Process. I will focus on creating this chapter for my Master’s Project	

Based on my original thinking from my book *Power Up Your Creative Mind,* and the research and new thinking skill strategies I have learned in my courses at Buffalo State, I will create a new book.

Goals Beyond the Scope of My Master’s Project

1. So that my goal of encouraging teachers to “teach creatively” and to “teach for creativity” might be more far-reaching, I will learn to promote ideas through social media. (Beyond the scope of my Master’s Project)
2. Investigating opportunities to collaborate with Cyndi Burnett, who I highly respect, on projects related to Creativity and Education.

SECTION FOUR: OUTCOMES

“One must still have chaos in oneself to be able to give birth to a dancing star.”

— Friedrich Nietzsche

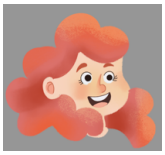
Using the Torrance Incubation Model (Burnett & Schnapp, (2021) as a framework, I accomplished my objective of writing a CPS Story that highlights an original and engaging approach to teaching the Creative Problem Solving process. Integrating storytelling and imaginative characters fosters an immersive and interactive learning experience that will capture the imagination of both students and teachers.

Stage One: Heightening Anticipation

Heightening Anticipation sparks the motivation to learn. The introduction to this chapter was created to capture the attention of new teachers and experienced teachers who feel that they have hit a roadblock in helping students learn how to solve problems. The story begins with a message from a teacher, much like themselves. See Table 1 Below.

Table 1

Introduction to the Chapter: Message from a Teacher



Teaching can be challenging, but it's those moments of inspiration and Break throughs that keep us going. These moments are so powerful that your approach to teaching can be changed forever. I have experienced one of those transformative moments and would like to share it with you. It all began when …

I was observing my students struggling to solve problems that came their way. They seemed to be caught in an endless maze of confusion and frustration, unable to escape - no matter which way they turned.

Some students tried and gave up when a solution didn’t readily appear. Others ran hopelessly through the maze in an endless loop that left them exhausted and discouraged. Still others never tried at all, believing no answer could be found.

I wanted desperately to help them, but how?
Then a student came along who helped me find the Key to teaching the Creative Problem Solving Process.

This introduction incorporates Torrance's Creativity Skills (Torrance & Safter,1999) of *Curiosity*, *Breaking Through and Extending Boundaries.*

Stage Two: Deepening Expectations

Stage Two of the Torrance Incubation Model is called Deepening Expectations. This stage is designed to enhance the depth of learning and understanding and to promote questioning and viewing ideas from different perspectives.

As I began to write the story, I was inspired by the strategy entitled "Locked Doors - Solving the Unsolvable, Opening Up New Vistas, Going Beyond the Same" developed by Drayton, Skora & Keller-Mathers, (2007). The main character of the story is introduced in Table 2 Below.

Table 2

Meet Will – the Main Character of the Story

Meet Will, who finds himself caught in The Maze of Problems. He tries to navigate through endless twists and turns of challenges, but despite his best efforts, he is trapped. Locked doors loom before him. He needs to find a way out but doesn't know where to begin or which way to turn. Panic sets in. His mind races with questions, and his heart begins to pound.

"I don't know what to do!
So many problems and so few solutions. How do I decide the best way to proceed through this twisted maze of problems?

Original drawing by artist Brittany Trivelli.

The story continues to unfold as the Spirit of Creativity materializes before Will and reveals himself to be Dr. E. Paul Torrance, the Father of Creativity. See Table 3 Below.

Table 3

The Appearance of the Spirit of Creativity: Dr. E.P. Torrance

"I am the Spirit of Creativity, and I heard your urgent plea. ***I can provide direction.*** ***You can count on me.*** Original drawing by artist Brittany Trivelli. 

The Spirit then takes Will on a journey to four Creative Problem Solving Lands, The Land of Clarification, The Land of Ideation, The Land of Development, and The Land of Implementation. In each land, Will meets a special guide who helps him master the essential skills required for that step of the CPS process. Throughout his journey, he faces divergent and convergent thinking challenges to demonstrate his mastery of these skills. After successfully completing the Student Activity Challenges, Will is awarded the Key to Understanding that unlocks a door in the Maze of Problems so he can move on to the next step of the CPS process. Tables 4 – 7 Below presents an overview of his journey.

Table 4

A Journey Through the Land of Clarification

The Land of Clarification
Will meets a Detective Guide, and he learns that to be a good problem solver, you must first clarify the problem and target the most important issue - one that if solved will have the greatest impact.

Table 5

A Journey Through the Land of Ideation

The Land of Ideation

Will is greeted by a guide, an Idea Engineer. He learns an important formulation related to idea generation success.

$$IGS = (R+3)^3 * CTT$$

- **IGS represents Idea Generation Success.**
- **(R+3)^3 represents the number of research methods used (Articles, Interviews, Surveys).** By cubing this sum, the equation emphasizes the significant impact that multiple research methods can have on the success of idea generation. **The more methods used increase the IGS exponentially.**
- **CTT represents proficiency in the use of Creative Thinking Tools.** These are techniques or methods used to stimulate creativity and generate innovative ideas. The higher the proficiency in using these tools, the greater the impact on the success of idea generation.

At Ideation University, Will earns a degree in three Creative Thinking Skills:

Brainstorming (Alex Osborn), The Category List (E. Paul Torrance), and SCAMPER

(Bob Eberly). He is excited to own a magic Creative Thinking Skills Tool Belt.

Table 6

A Journey Through the Land of Development

The Land of Development
Will's guide, A Quality Control Inspector, teaches Will to examine the ideas generated during Ideation. Will learns strategies to ensure that each solution addresses the most important issue selected in Step One, Clarification - the one that if solved would have the greatest impact. Will completes the Evaluation Grid and Card Sort Challenges.

Table 7

A Journey Through the Land of Implementation

The Land of Implementation
The Trailblazer Guide who meets Will looks like an Action Figure. At this last step of the CPS process, Will discovers that to be a good CPS Trailblazer; you must be well prepared and equipped to transform the best solution into a clear and workable Action Plan - one that can handle the powerful challenges of blazing a new trail to solve problems."

This section of the story integrates the following Torrance Creative Skills (Torrance & Safter,1999), Visualize It Richly and Colorfully, Be Original, Highlight the Essence, and Enjoy and Use Fantasy.

Extending the Learning

This instructional story is designed to create what I call a "**T**imeless **I**nspirational **M**oment in **E**ducation." - a unit that leaves a lasting impact on students long after the lessons are over. Such moments are powerful because they foster incubation: Students continue to reflect on, question, and engage with the material long after it has been presented. By creating such moments, we can instill a love of learning that extends far

beyond the classroom and inspire our students to become Creative Problem Solvers in their personal lives and future careers.

As Cyndi Burnett, (2021) notes, “Extending the Learning allows students to "marinate on it, question it, relive it, and play with it."

In the beginning of the story, the teacher expresses her struggle with teaching her students how to solve problems. The story comes full circle when Will returns. See Table 8 Below.

Table 8

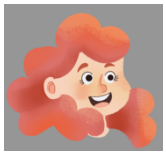
Will Presents the Creative Problem Solving Keys to His Teacher

Will returned to his classroom, excited to share his Creative Problem Solving Adventure and all that he had learned from the Spirit of Creativity. He hands the Keys to his teacher and says, “Here you go. I am passing the Creative Problem Solving Keys along to you, so you can help other students escape The Maze of Problems by teaching the Creative Problem Solving Process.”

The teacher’s response at the conclusion of the story is meant to inspire other teachers to take their students on an exciting journey to the Lands of Creative Problem Solving, where they can complete the challenges and capture the Keys to Problem Solving Process, just as Will did. See Table 9.

Table 9

A Challenge to Classroom Teachers Everywhere

 From the Teacher: But the story has not yet ended… “I thought for a moment and knew just what I had to do. The Keys to the Problem Solving Process belong to all teachers, so I am passing them along to you. Use the lessons in this book to take your students on an adventure through the Lands of the Creative Problem Solving Process and open the doors of opportunity for them, too.”

The Torrance Creative Skills (Torrance & Safter,1999) presented in this section include Get a Glimpse of the Future and Breakthrough - Expand the Boundaries.

My master's project offers more than a story of a student's journey toward mastering the Creative Problem Solving Process. It presents an engaging and interactive format that teacher can integrate into their classroom to teach the CPS process. A Teacher's Guide will extend the learning by providing additional creative lessons and instruction, props, and classroom instructional posters on integrating Creative Thinking Skills into curricula and standards to further enrich the student's learning experiences and to "Teach FOR Creativity."

SECTION FIVE: KEY LEARNINGS

***The mind is not a vessel to be filled but a fire to be kindled.* ~ Plutarch**

Through my master's project, I have had the opportunity to experience and apply the knowledge and concepts I have learned throughout my Creativity and Change Leadership courses.

Key Learning: Process

Experiencing Creative Tension

In the initial stage of identifying my master's project, I found myself experiencing Robert Fritz's (2013) concept of Creative Tension, as described in his book "The Power of Structural Creative Tension." He defines Creative Tension as the relationship between a vision and current reality. The discrepancy is a dynamic force that seeks to restore equilibrium. In my case, I felt a tension between the limited time I had to complete the master's project and the direction of my vision toward creating either a children's book that taught the CPS process through storytelling or a teacher's guide book that presented lessons to teach the CPS process in the classroom. MY DESIRED RESULT- Select a master's project topic that is creative, playful, and engaging. A project that will inspire classroom teachers to integrate the CPS process into their practice
MY CURRENT REALITY - I am having difficulty selecting a master's project topic that fits the required time frame, a project I would be passionate about pursuing.

Experiencing SCAMPER

I turned to the creative thinking tool SCAMPER, first created by Alex Osborn and later further developed into an acronym by Bob Eberle, to help me find a way to achieve equilibrium. (Eberle, 2008).

The SCAMPER acronym uses directed questions to brainstorm ideas and come up with workable solutions. Specifically, I used the SCAMPER command, "Combine." The following questions helped to guide me:

- What would happen if I combined my goals into one new idea?
- How could I adapt my research on the Creative Problem Solving Process to create an engaging chapter for my master's project?

Through the application of SCAMPER, I achieved my desired result - a master's project that combines a creative story with a practical guide that presents lessons on teaching the Creative Problem Solving Process. The creative story begins the introduction to the chapter.

Experiencing the Wallas Model

I experienced many twists and turns in the creative process as I completed my master's project. The Wallas Model helped me to metacognitively understand my pathway as I progressed through each stage of the Creative Thinking Process. This model was developed by Graham Wallas, a social psychologist, in 1926. It was the first formal step-by-step description of the creative thinking process. The model's four stages include Preparation, Incubation, Illumination, and Verification.

Wallas (1926) discussed in his book, *The Art of Thought,* how a single achievement can be dissected to identify the thought process. He stated, "We can take a single achievement of thought – the making of a new generalization or invention, or poetical expression of a new idea – and ask how it was brought about. We can then roughly dissect out a continuous process, with a beginning and a middle and an end of its own."

Stage One: Preparation

According to Wallas (1926), the first stage of the creative problem solving process, Preparation, involves a deliberate and systematic analysis of the problem.

I began my preparation by organizing my research and gathering information, knowing that a foundation of knowledge would be a springboard to successfully reach the highest level of Bloom's Taxonomy. Reviewing all that I have learned in my courses at Buffalo State was most valuable in this stage of the process.

Another important aspect of preparing to develop my master's project was seeking feedback from creative colleagues. My sounding board partners and Dr. Susan Keller-Mathers were valuable resources and provided new perspectives and constructive feedback.

Stage Two: Incubation

The Incubation Stage of the creative process involves setting aside your quest for a solution and letting your unconscious mind wander and engage in what Einstein called "combinatory play:" taking diverse ideas and influences from the Preparation Stage and finding new ways to bring them together (Gregoire, 2019).

I found this stage to be extremely challenging. It was difficult to set the ideas aside and let my subconscious mind take over. I experienced sleepless nights with dreams of being lost in a maze of ideas and not knowing which way to turn. I continued to use the affirmation, "Be patient and persistent; a breakthrough of original ideas will come and provide direction."

The incubation process was evident throughout the development of my project.

- How to create a main character that embodies the Spirit of Creativity?
- How to write a compelling story that would inspire classroom teachers to integrate the Creative Problem Solving Process into their content and standards?
- How to present the FourSight Model in a way that is creative and engaging to students?

Stage Three: Illumination

The illumination stage, often referred to as an “aha” or lightbulb moment, can occur unexpectedly at any time. However, waiting for it to happen was challenging. It was only when I stopped stressing about the limited timeframe to complete the project that my most creative ideas started flowing. These moments of inspiration most often occurred in the evening when walking my Beagles, riding my bike, or taking a relaxing bubble bath.

Stage Four: Verification

The Verification stage marks the point where ideas converge from the earlier stages of the model, setting the stage for the process of creation. I started by developing a storyboard, which helped me visualize my project's direction and my story began to take shape and unfold. Each time I revised; the story gained clarity.

To create my storyboard, I utilized Google Slides, with each slide representing a page in the book. However, upon completing the story, I realized that my original intention of writing a creative CPS Story to introduce the teacher’s guidebook had unintentionally transformed into an elaborate and creative CPS Story teaching each step of the FourSight Model.

This called for a revision of my plan.

After another period of brainstorming multiple ideas, Eureka, my idea came to me. My solution was to develop engaging Student Activity Challenges that aligned with each step of the FourSight Model. I decided to weave these Student Activity Challenges into the plot of the story, providing an opportunity for students to practice what they learned as they travel through each chapter with the main character, Will. A QR code and link provide access to the challenges for the teacher and student. Click

on the link in Table 10 to view the Student Activity Challenge for the Land of Clarification.

Table 10

Student Activity Challenge: The Land of Clarification

Clarification Challenge ⟸ Link "Here is a Clarification Challenge, Will." said the Detective Guide. "Complete this Quest to determine if you fully understand what must be done in Step One of the CPS Process." Links to challenges are provided in the story.

Experiencing Collaboration and Flow

I was grateful to collaborate with my co-author of the *Future Problem Solving Topic Activities Book,* Elaine Reynolds. Her creativity and unique perspectives were invaluable in shaping the plot, bringing the characters to life, and developing teacher resources. Our writing sessions began early in the morning, and we experienced a sense of Flow as time slipped away unnoticed. Morning turned into afternoon, and late afternoon into the evening as we continued writing, creating the plot, developing characters, and, most important, an inspirational ending. We were completely absorbed in our writing. Mihaly Csikszentmihalyi (1990, p. 3), describes Flow as "the best moments in our lives are not the passive, receptive, relaxing times… The best moments usually occur if a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile." We did!

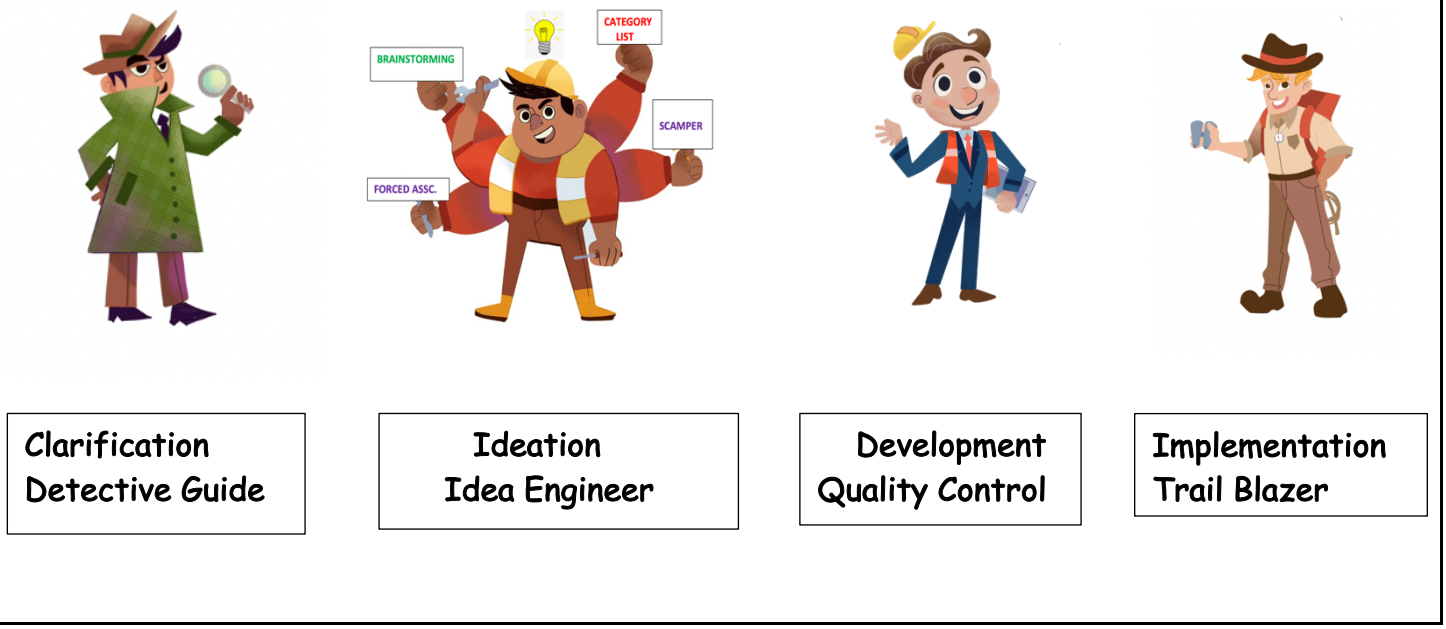
Key Learning: Content

My master's project is the culmination of the knowledge and skills I have learned through my Creativity and Change Leadership Program and the new research I discovered during my independent assignments. The creation of the CPS Story and the development of the Student Activity Challenges for each chapter is supported by three main focus areas: FourSight, The Future Problem Program, and The Torrance Incubation Model.

Illustrations created by artist Brittany Trivelli enhance the content. Table 11 illustrates the Spirit of Learning, Dr. E. Paul Torrance, Will, the main character, and the Trail Blazer and Quality Control Guide.

Table 11

Characters Guides in the Problem Solving Lands by Brittany Trivelli



Evaluation

To evaluate the outcome of my master's project and verify that my learning goals were met and the intended outcome was achieved, I have created the following checklist:

1. Review the benchmarks to assess my progress to date.

- I have created the Spirit of Creativity. (Dr. E. Paul Torrance)
- I have developed four Problem Solving Characters representing the steps of the Creative Problem Solving process. The Detective represents Clarification, The Idea Engineer represents Ideate, The Quality Control Supervisor represents Development, and The Trailblazer represents Implement.
- I have written an imaginative and engaging CPS Story.
- I have taught the CPS process through Creative Problem Solving Characters.
- I have developed the Student Activity Challenges for each chapter.

2. Reflection/ Evaluation

My original plan was to design a Creative Problem Solving chapter divided into two sections. The first section would be an introduction to the chapter, a creative CPS Story involving a teacher and a class who would benefit from learning the Creative Problem Solving Process. The second section would be a Teacher's Guidebook with lessons and Student Activity Challenges to teach the CPS process. In designing the CPS Story, the two concepts merged, resulting in a book instead of a chapter. This approach is more original and engaging for the teacher and students. I can visualize it being taught as a simulation/ gamification. It might look like this:

- The classroom teacher reads the introduction message from the teacher who begins the story.

- The class discusses the story and the similarities may also make the experience more authentic.
- The teacher continues the story, and the class meets Will.
- To heighten anticipation, students are told they will soon meet an extraordinary guest and will be going on a quest to learn the Creative Problem Solving process.
- To add excitement, the teacher might create a Spirit of Creativity costume and play the role of Dr. Torrance. (Read the section of the story where Will meets the Spirit of Creativity. Add some music.
- Provide a map for the classroom to log their journey through the Lands of Creative Problem Solving.
- Post the map in the classroom. Each student will create an Avatar to place on the map and move as they journey to each CPS Land.
- Introduce each new Land following the CPS Story chapter. Complete the Student Activity Challenges with Will.
- Closure: Award the students the Key to each land so that they are able to unlock the door in the Maze of Problems and move on to the next destination.

3. Feedback from colleagues will be beneficial for editing and revising the story and Teacher's Guide. This will be an opportunity for personal growth as a writer and teacher. The following criteria will be used to evaluate the creative CPS Story.

- Does the story flow and have continuity from chapter to chapter?
- Do any sections of the chapters need more clarification or depth of knowledge? (Are there any sections that you consider confusing and need revision?)

- Is the CPS Story and Student Activity Challenges clearly written and understandable in relation to teaching the steps of the CPS process?

Review One: Sharon Dwyer from the International Future Problem Solving Program

Review Two: Deborah Walker, Elementary and middle school teacher and professor from the University of Akron.

Review Three: Jean Metzger: Gifted Education Specialist Grade Four.

Review Four: Kori Frazier: Creative Writer (Inkling Creative Strategies

4. Implementing the prototype in elementary and middle school classroom.

SECTION SIX: CONCLUSIONS

“We’ve gone too far in our story to actually say the end.” ~ Steven Spielberg (The Fabelmans)

The development of my master’s project has been a journey of discovering new research, collaborating and becoming lifelong friends with cohort colleagues, learning new ideas from accomplished professors, and having moments of exhilarating creativity!

What I Know Now Since Beginning My Project

It was April 2, 2021, I received an intriguing email that read, “Discover Your Inner Superhero! Join us to learn about the Creativity and Change Leadership Program at Buffalo State University.” As someone who has always been passionate about Creativity and integrating CPS into classroom content, I immediately responded.

When I enrolled in the program and received admission, I was both nervous and excited. As my first class began, the professor, Dr. Firestien, said, “I am giving you each thirty mistake cards for this course, and if you need more, just let me know.” Then I met the members of the cohort, we called ourselves the Tiger Dogs, and I knew, without a doubt, I had made the right decision.

Each of my courses has built upon the next, culminating in the design of this master’s project. I now have a deeper understanding of my strengths, as a transformational leader and have built the confidence necessary to implement my project.

The following are the primary skills that I have learned during my Creativity and Change Leadership Program, and I have integrated them into creating my master’s project:

- Innovative Creative Thinking Tools
- The FourSight / CPS process - (Teaching for Creativity)

- My strengths as a Creative Problem Solver
- Facilitating the CPS process
- The Torrance Incubation Model (TIM)
- The Wallas Model
- Research, Resources, and Assessments

To develop my master's project, I worked at the highest level of Bloom's Taxonomy, Creating. According to Fastiggi, (2019), creating is the ultimate aim of the learning journey because it involves the most challenging cognitive processes.

Thinking at this level, I synthesized all I have learned about "teaching creatively" and "teaching for creativity" to design an original CPS Story and Student Activity Challenges. One of the biggest lessons I learned was the value of incubation time, being patient, and letting my subconscious work on developing innovative ideas.

Next Steps: "What I See Myself Doing Next …

Although the main goal of my master's project has transformed from a chapter to a book, my original plan for Step Three of the Torrance Incubation Model, Keeping it Going / Extended Learning, is still relevant. I will complete a Teacher's Guide to accompany the CPS Story and Student Activity Challenges. This will be completed as an Independent Study. The Teacher's Guide book will closely follow each CPS Story and Student Activity Challenges. The guide will present extended learning experiences that will help teachers create an Action Plan to integrate the CPS process into their content areas. This will include:

- Additional lessons to reinforce learning the CPS process
- Additional Creative Thinking Tools for idea generation
- Curriculum Connections: Examples of CPS integrated into classroom content: Language Arts, Math, History, Science

- CPS Templates to teach each step of the process
- Classroom Communication - The Parent Connection: A Parent Newsletter
- Metacognitive Moments “Thinking About Your Thinking”
- Reflection Strategies
- Resources to further explore the Creative Problem Solving Process

After completing this book. I plan to follow the suggested revisions to *Power Up Your Creative Mind* listed in Part 3, Extending the Scope of My Masters Project. It will then become a new book.

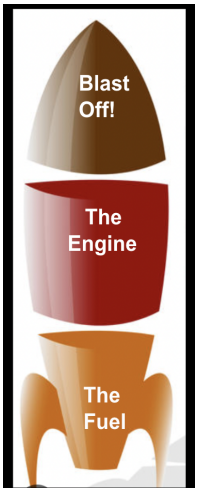
Future Plans to Build on the Project?

Completing my master’s project has inspired me to continue my mission to explore the best ways to encourage creativity in our schools with a focus on empowering teachers, seeking out uncharted research, and boldly developing new ideas.

My question now is, in what ways might I create an awareness of the *CPS Story, Student Activity Challenges, and CPS Teacher’s Guide* so I can provide resources and strategies for teachers to learn the Creative Problem Solving Process and integrate it into their practice? (Teaching FOR Creativity) The following are some of my ideas:

1. Social Media can provide many ways to create an awareness of educational materials. I will learn and implement social media strategies to promote the book and the importance of teaching our students 21st century learning skills to prepare them for their future.
2. Investigating opportunities to collaborate with Cyndi Burnett and promote my master’s project through her website Creativity and Education.
3. Present at conferences such as the Ohio Gifted Conference and National Association for Gifted Children. Develop workshops for teachers.

4. Publish my master's project through the International Future Problem Solving Program. This will add a playful and engaging approach to teaching the Creative Problem Solving process to their resources.
5. Continue to develop leadership skills to become a catalyst for educational change.
6. Additional research areas I would like to explore: Neuroscience and The Brain related to Creative Thinking, Helping Teachers to Discover Their Creative Spirit, and developing my model, "Teaching for Creativity is a Blast."



STAGE THREE: BLAST OFF! Teachers who are knowledgeable and trained in creative thinking and the Creative Problem Solving process, will integrate creativity into their teaching practice and inspire and prepare students for their future.

STAGE TWO: THE ENGINE: Teachers will be provided Professional Development, Models, Strategies, Resources, and Support related to implementing teaching for creativity in their practice. (*The CPS Story, Student Activity Challenges, and Teacher's Guide*) The propulsion!

STAGE ONE: THE FUEL: Teachers will gain a knowledge of the basic principles and research underlying Teaching Creatively and Teaching for Creativity.

In Closing: A quote by Dr. James Kaufman synthesizes the importance of my master's project, providing teachers with the knowledge and skills to integrate creative thinking and Creative Problem Solving into their lessons and the benefits of "teaching for creativity" in preparing students for their future.

"Now, more than ever, creativity is essential. We need to have these innovative ideas. We need to enable cooperation and communication and the sharing of these creative ideas. Once we start limiting creativity, we start limiting everything" ~Kaufman (2009)

"The past is written, but we are left to write the future." ~Jean-Luc Picard

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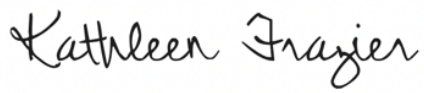

May 2023
Date