

A Comprehensive Guide for Research-Based Practice

# **Educating for Creativity & Innovation**

Donald J. Treffinger, Ph.D.,  
Patricia F. Schoonover, Ph.D.,  
& Edwin C. Selby, Ph.D.

A Joint Publication With



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## Chapter 1

# Introduction

**T**his book is for many different audiences. It's for you, for example, if you're an educational administrator, educational specialist (in any area), classroom teacher (present or future), or community leader who works with other people in any setting. The book primarily focuses on teachers and students, but it's really for any readers who want to extend their understanding of their personal creativity and to be able to nurture creativity in others. Even if you already consider yourself quite creative, this book will help you discover some useful tools and resources. On the other hand, even if you don't consider yourself very creative at all, you will discover that you can be creative in satisfying and rewarding ways!

For those of you who work with students—from the primary grades through adult learners—this book will help you find ways to incorporate creativity into your teaching, as you discover ways to recognize your students' creative characteristics and strengths, to nurture their creativity, and to evaluate their creative work. Let's meet three students. Think about ways they may be similar and different in their characteristics and needs and about how adults responded to them. From time to time throughout the chapters that follow, we will revisit these students and several others to

explore their stories and to illustrate our understanding of creativity and creativity instruction in our schools.

### Eric

Eric was a fifth-grade student in a small K–5 school in the Midwestern United States. He seemed to have trouble sitting still for long periods of time, and he could be very trying for the teacher. He seemed compelled to talk to other students even during quiet reading time, and he was prone to getting into mischief. If there was a commotion in class, Eric was often the center of it. When Eric's classroom teacher responded to a survey that inquired about the creative potential of the students in her class, she was not able to identify any interest on Eric's part that she could use to motivate him to be more productive in class. She had resigned herself to trying to get as much out of Eric as she could by placing him in productive cooperative learning groups and working with him to cut down on his talking and inconsistent work and behavior patterns. She shared this about Eric:

His schoolwork is sporadic. At times he seems distracted, although when he does take part in class discussion, his answers are appropriate and show some thought. When assigned to a group, he will work with the others as long as they are working. He seems unwilling to take the lead in projects, but will carry out his assignment and do his share. Eric is popular with other boys and respectful toward adults. Even when he is being reprimanded, he is quick to acknowledge that he was in the wrong and will sincerely pledge to try to improve his behavior. On open-ended assignments, when he does hand them in, Eric's work shows evidence of originality and flexibility at times, but often lacks breadth or depth, and he will elaborate on his answers only after prompting by the teacher. In group assignments requiring creative thinking, he may offer some tentative ideas, but again will not take the lead. Although he will work with others to meet a challenge, he is not motivated to seek out challenges or ambiguous situations. His attempts at trying out new and original ideas are tentative at best, and he seeks teacher validation to make sure his efforts are "okay" or "right."

Eric's situation might have continued in much the same way throughout the year, except for the intervention of one of his friends and the willing-

ness on the part of his teacher to broaden her view. The teacher announced her plan to begin a unit on the Civil War and was preparing to give the class an assignment when one of Eric's friends raised his hand and exclaimed, "Mrs. Lynch, if you want to know about the Civil War, you should ask Eric. He knows all about it!" Mrs. Lynch responded, "That's very interesting. Thank you, Jimmy. Eric do you know about the Civil War already?"

Eric responded that he did, and he proceeded to summarize the causes of the war as well as some of the battles and leading generals on both sides. Upon further questioning, Mrs. Lynch found that Eric's uncle was a Civil War reenactor and had involved Eric in his hobby for more than 2 years. Eric had a passion for all things Civil War and avidly read books about it that he borrowed from his uncle or the town library. He had recently been accepted as a drummer boy in his uncle's regiment. Mrs. Lynch was a bit stunned and mystified as a new view of Eric began to form. She had found a hook that she could use to more fully engage him in his schoolwork and channel his energy in positive ways. She also had found a tool to help him work toward expressing his creative potential.

Mrs. Lynch's first step was to invite Eric to put together a set of lessons about the Civil War and Civil War reenactors. She spoke to his parents and uncle to enlist their help. At Eric's request, his friend Jimmy also became involved. The project they planned involved research that would lead to a PowerPoint presentation accompanied by activities for their classmates to complete. The teacher taught the entire class to use some tools for thinking and problem solving. For instance, she asked the class to use the Brainstorming with Post-it® Notes tool to list the challenges that faced the nation in 1860. The students then created another list of challenges facing the United States today. The lists were compared to see if any of the issues of concern in 1860 were still of concern today. Students then worked in groups to choose one of those issues and develop possible solutions.

Eric and Jimmy began to generate ideas for their presentation. When they encountered some difficulty, Mrs. Lynch suggested they try to list the attributes of the Civil War that they wanted to emphasize, choose a workable set of goals for the lesson, and then develop a plan. She offered to check with them at each step in the process. The boys became engrossed in the project and worked on it during any free time that they could find at school, in the evenings, and on weekends. Their presentation was a great success. Both boys came in costume, one as a soldier for the North and the other as soldier for the South. Their PowerPoint presentation included slides from history books and old maps, as well as slides the boys created themselves.

Mrs. Lynch was so impressed that she told the other fifth-grade teachers about the presentation, and the boys went from class to class sharing their knowledge. When they had completed their rounds of the other classes, Mrs. Lynch took some time with the boys to review what they had done. They discussed how they had used the problem-solving process, which tools they had used, and what they might have done differently. She asked them to each write a short paper on the experience to place in their online portfolios.

Eric had become involved in class, taking a leading role in many classroom activities. Mrs. Lynch suggested that Eric try writing an article for the school paper, and he decided to write about Civil War reenactors. Mrs. Lynch told Eric that if he wrote a strong enough article, he could submit it to a local newspaper that ran a weekly history feature. With Mrs. Lynch's approval, Eric again enlisted Jimmy's help. The boys gathered all of the information about reenactors and decided to interview Eric's uncle and others in the regiment. When they were done, they had more information than they could handle. Mrs. Lynch suggested that they think about using some of the focusing tools to narrow their options, which they did. After several drafts and revisions, the full-length article was ready for the community paper and a shorter version was submitted to the school paper.

Throughout this experience, Eric's classwork and behavior became more positive and consistent. He began to volunteer answers and take the lead in cooperative groups. He also expanded his interest to other historical periods and maintained his interest in writing. In sixth grade, with the guidance of his social studies/language arts teacher, he created a similar presentation on ancient Greece, focusing on the Persian Wars. An article from that presentation was also published in the local paper.

### William

William has studied piano privately for 6 years and the clarinet in school for 5 years. Now, as a high school freshman, he is excited about being selected for the concert ensemble. To improve his understanding of music, he has elected to take a music theory class. During his piano lessons, he has found learning about chord progressions and jazz improvisation a lot of fun, and he has tackled each assignment with a degree of confidence in his own ideas and ability, both in terms of his skills and attempts at originality.

His background has enabled him to approach assignments in his theory class from several directions. He is able to see patterns in different

musical ideas and can pull from several genres. He has produced some interesting arrangements for small ensembles. These are usually played and then critiqued by William's classmates under the guidance of Mr. Trimble, the band director. Mr. Trimble has offered to work with William on an arrangement that might be played in the upcoming spring concert.

Mr. Trimble has also invited William to try out for the jazz ensemble. During lessons, William is not only developing his improvisational skills, but also gaining a wider understanding of the standard band literature.

William also does well in his other classes. A solid A/B student in most classes, he enjoys science and math most. In middle school, his science fair project won top honors. He is also thinking of trying out for the school musical. Watching the drama club's fall production, he remarked to his friend that he thought that he would enjoy being in a musical. The two boys agreed to try out together after the winter holidays.

## Sue

Since she was in kindergarten, Sue has peppered people with questions. Today, as a high school junior in a northeastern suburban high school, she has become more and more enthusiastic after realizing that in science there are so many more questions than answers. Over the years, her parents have been supportive of her growing passion for science. While she was still in elementary school, her father built her a mini-research lab in the garage. In middle school, she consistently won science competitions, first locally and then on the regional and state levels. Today she corresponds regularly with other students around the world and with faculty members at several leading technical schools, exchanging ideas and receiving feedback on the progress of her experiments. One faculty member has become her online mentor.

Sue is an outstanding student in all of her classes and is captain of the school tennis team. Socially, she is accepted by her peers and respected for her achievements. She has a tight-knit group of like-minded friends but spends most of her out-of-school hours on her studies or exploring some new facet of science that she uncovered in her reading. She is very comfortable with adults and is able to hold her own in any conversation, especially on issues related to science and technology.

This year she is taking an Advanced Placement (AP) biology course. She has approached each assignment with passion and has been able to really motivate her two lab partners, Ida and Mary. Together they have become very interested in a particular disease from which Ida's grandmother passed away. During the course of the year, the three girls have developed a new process that may enable the early diagnosis of important

indicators of the disease. After winning a state-level competition with the report on this process, they have now entered a national event. They have also published a paper on their process in a peer-reviewed journal, with Sue as first author.

Sue has been fortunate throughout her schooling. Her parents recognized her potential early on and encouraged her questions, actively supporting and nurturing her curiosity and her desire to explore both physical and biological science. Her school and teachers also recognized her abilities and placed her in accelerated classes whenever possible. Her AP teacher ensured that she and her classmates were well grounded in the problem-solving process and tools and supported opportunities for them to tackle open-ended challenges. Her fellow students usually supported Sue as the leader in taking on advanced projects. In her senior year, Sue will attend her high school classes in English, social studies, and Chinese and also enroll in college courses in math and science at a nearby university. Unfortunately, it is probable that this change in her schedule will make it necessary for her to give up her spot on the tennis team. She accepts this possibility, however, and is quick to explain that her first priority is her passion and enthusiasm for learning and creative inquiry in science.

## Plan for the Book

In a nutshell, this book will be your resource guide for making creativity a viable aspect of your personal life and your professional efforts. The book includes 20 chapters, divided into five main sections.

### Section I: Understanding Creativity and Innovation

The first section of the book, which consists of Chapters 1–4, sets the foundation for the book's approach to creativity and innovation in education. Our goal is to provide a common set of concepts, principles, and terminology that will guide you throughout the book. Chapter 2 describes and responds to several myths and misunderstandings that are widely held about creativity. Chapter 3 presents a number of definitions that have been used to explain creativity and innovation and synthesizes that body of work by offering working definitions that we will employ throughout the book. Chapter 4 explores several reasons for the importance of cre-