Introduction

his book is intended as a resource for art teachers seeking new and definitive ways to identify and solve thought-provoking visual problems. The two- and three-dimensional media projects developed here offer varying degrees of difficulty, from introductory level to those involving higherorder thinking skills such as synthesis, analysis, and reflection. I hope that this book, like its predecessor, From Ordinary to Extraordinary: Art and Design Problem Solving (Davis), will provide a jumping-off point for artist-teachers who want to foster creative expression and develop their own creative studio projects.

Engaging the adolescent mind can be both stimulating and challenging. My enthusiasm for teaching at the intersection of creative expression and higher-order thinking has given me many challenges and enormous personal satisfaction throughout my career as an artist and teacher. For students, art can and should be exciting as well as thought provoking. Each new school year I tell my students that they are truly taking the best course in the

entire high school. They might look at me quizzically at first, but I go on to explain my conviction that the academic art program offers unlimited choices for creative thinking, problem solving, the development of technical skills, and personal expression. In short, the visual arts can offer tremendous opportunities for artistic and personal growth.

The Importance of Critique

As we know, the maturation process of adolescence is a life-changing experience. In the course of defining themselves, young people can become defensive, resistant, even confrontational. I have found that the most effective teachers are those who provide nonjudgmental critique on a daily basis. The benefit of daily critique lies in ensuring that students have no negative surprises when it comes to the final assessment of their achievement.

The process involves thoughtful communication as the teacher speaks directly and objectively about student work. This means focusing on the use of media, composition, and overall design. It means talking about how the viewer's eye moves through the student's work. Where does the eye stop? What areas flow or show movement? What aspects contribute to visual unity? I try to avoid personal judgments in order to motivate students to produce their best-quality work. Such daily critical feedback may be the single most important way to promote a high standard of achievement.

In addition to providing thoughtful, nonjudgmental critique, teachers need to provide a physically and emotionally safe environment for students to think and work. Students should be encouraged to take time to slow down and reflect on what they've learned. Their artmaking environment should be inviting, supportive, and designed to meet their needs.

The Developing Brain and Cognitive Connections

Recent technological developments have increased our knowledge of how the human brain develops. Research now reveals that significant growth takes place in the human brain during adolescence which was only recently thought to happen in the first three years of life.* In understanding this growth we can develop a greater awareness of the thinking skills and significant challenges faced by the students we teach. Further published research has proved "what every parent of a teenager knows: not only is the brain of the adolescent far from mature, but both gray and white matter undergo extensive structural changes well past puberty. . . . The best estimate for when the brain is truly mature is twenty-five."

Elliot Eisner, a leading theorist on art education and aesthetics, has argued that we, as artist-teachers, need to develop cognitive flexibility to promote artistic growth in ourselves and our students. Cognitive flexibility utilizes all the brain functions without putting unnecessary limitations on the thinking and creative processes.‡

I believe the key for promoting achievement in studio art is in structuring visual problems that make cognitive connections between media, artistic skills, and personal expression. To do this, we must engage and exercise our own thought processes to allow for greater insight, productivity, reflective learning, and personal ways of thinking.

Over the years, I have been on a quest to increase my effectiveness as a teacher who can structure clear visual problems that are engaging to the adolescent learner. We all see the world in very different ways, and we allow the exterior world to influence and activate our internal thinking. We are motivated to artistic expression as we reflect on the world around us.

Creative thinking and teaching is all about being receptive to new ideas-the seeds from which original studio experiences can grow. A new idea will flourish as it is mulled over in the mind and eventually brought to fruition. At times, two or more ideas blend to produce an even more expressive, hybrid possibility.

Artist-teachers need thinking time, and for some, summer break can provide the time to regenerate. We can visit art museums and galleries, read art magazines, and visit other artists' studios. School vacations may also provide time for teachers to focus on their own creative work. During this regenerative time we can observe new uses of media, and how they influence style as well as make new connections in expressing visual ideas.

Developing the Visual Problem

As new ideas are developed to the point where we see their application for our students, thoughtful preparation and planning may begin. There are a few important factors that come together when

creating a visual problem. In developing visual problems we need to:

- Create guidelines that point the student in a clear direction, and share the visionary possibilities with enthusiasm. This approach naturally leads to diverse and individual results.
- Pay attention to the details of each visual problem so that students are challenged, yet not frustrated by what is being asked of them. I find it best to work with an idea or technique that is just at or beyond the students' reach—one that is challenging yet not overwhelming.
- Share clearly developed and well-defined objectives for the visual problem.
- Show enthusiastic commitment to the process, and be a part of the process, via either frequent critique or actual participation. Take the time to share in the challenges students face.
- Offer thinking/reflection time as part of the creative process. This, of course, need not be limited to the actual time in the art room.
- Develop not only clear objectives, but also a clear reflective evaluation and/or rubric.

Throughout the creative process, stress the "conversation" the artist has with his or her materials. Introduce the concept of the artist in dialogue with both ideas and media. Share with students your understanding of the intuitive nature of art.

[&]quot;Mind Expansion: Inside the Teenage Mind," Newsweek, May 8, 2000.

[&]quot;What Makes Teens Tick?" Time, May 10,

Elliot Eisner, Cognition and Curriculum Reconsidered (New York: Teachers College Press. 1994).

Your presentation of the visual problem is critical to the success of the process. Choose words that positively open doors to possibilities, rather than imposing limitations. Students need to feel they are being invited into a new area of thinking and expression.

Recently, in discussing the concept of visual problem solving with a curriculum administrator, I was asked, "What would make an elegant visual problem?" Over time, the notion has continued to intrigue me. I now realize that the most engaging visual problems involve a clearly defined set of criteria whose application can lead to a fully successful studio experience. At the most basic level, the process involves four things:

- 1. A creative idea that stimulates both teacher and student
- 2. A defined set of objectives that is well planned and organized yet allows for multiple outcomes
- 3. A technical challenge that requires an effort of physical skill and allows for individual personal expression
- 4. An opportunity for students to reflect on what they have learned through the process

An elegant visual problem may be charted as a complete circle, starting from the original idea, to defining the project's objectives, to the processes of creative thinking and personal expression, and finally the process of reflective thinking (see the chart below). The act of verbal reflection during class critique or in student reflective writing may lead to further refinement of the original idea. In any event, defining the structure and scope of the experience is critical, as are the need for both teachers and students to be flexible, to take risks while avoiding limitations, to aim for surprise, and to work hard to achieve excellence.

The elegant visual problem is presented with clarity, enthusiasm, visual references, and organized materials that are brought together to make the studio process go smoothly. It should be noted that visual problems may vary in depth and breadth, depending on students' experience. For beginning art students, the problem might be weighted more toward increasing skill levels so that, ultimately, their knowledge of tools, techniques, and materials can be applied to greater personal expression. In the end, whether designed for beginning, intermediate, or advanced learners, visual problems need to be wellstructured concepts that support and challenge our students' needs, interests, and varied abilities.

