

## EVALUATING AND ASSESSING

# Instructional Elements for Design Programs

Here are some of the dimensions of instruction for which design thinking requires us to plan. Design programs should generally be evaluated for these instructional elements.

### 1. Context

Is the connection to the design challenge clear and concise? Does the context draw upon realistic levels of prior knowledge?

### 2. Process

Not all states of the design thinking process are used during every project, but the flow of the design experience should naturally follow whatever design process the school or classroom endorses.

### 3. Grouping

Just as implementation of aspects of the design process varies from project to project, so too does student grouping. Project goals are achieved through grouping arrangements. Is the task individual, competitive, collaborative, or a hybrid of arrangements at different points in the process? In any arrangement, expectations for individual student accountability must be clear and measurable.

### 4. Reflection

Frequent moments of reflection throughout the project can inform both teaching and learning if reflection is encouraged.

### 5. Feedback

Nothing provides a better guide to learning than consistent and sustained feedback that encourages students to achieve sophisticated explanations, masterful ideas, and insightful solutions.

### 6. Alignment

Design challenges should meet specific benchmarks for developmentally appropriate concepts and skills. Design projects should consider the scope and sequence of learning at any particular grade level.

### 7. Critique

A blend of peer, teacher, and self-critique is applied to the process and products. How and when in the process will students share their ideas and comments?

### 8. Mastery

The project rubric, goals, and design challenge should outline the specific characteristics of mastery.

### 9. Inquiry

Look for evidence of higher order questioning between the teacher and student. Questions and inquiry provide the basis for testing, developing content, reflection, and process modifications to the project.

### 10. Authenticity

Whenever possible, the design project should emerge from a real and authentic problem and purpose, and consider students' interests, backgrounds, cultures, and experiences.

### **11. Creativity**

Freedom to take risks with ideas forms the basis for creative thinking. Intentional exercises to develop personal creativity (See Chapter 2) combined with the flexibility to apply new ideas will ensure that the products reflect high levels of ingenuity.

### **12. Equity and Diversity**

Innovation is not unique to any single group, culture, or background. The history of invention and human ingenuity must reflect that reality as should the theme and purpose of design challenges.

### **13. Materials Management**

How students access tools and materials needs to be well planned and organized. Student safety depends on the proper use of tools, machines, and materials. The room arrangement must support student independence, self-reliance, and self-efficacy.

### **14. Points of View**

There are few other areas of learning where examining and appreciating the perception of others is so important. The design process by nature validates and values the work, viewpoint, and ingenuity of others.

### **15. Pacing**

Design thinking requires a flexible and well-monitored pace. Students may move through stages of the process at different paces. Planning for the individualized nature of design projects is important. Providing expansion and extension portions to the project is a way to personalize and adjust the pacing as needed.