



Magic happens

Art is a slippery concept. Many people know how to play a musical instrument, but not all of them are able to move us with the music they make. It's easy to pick up brushes to paint, but making a masterpiece is a real gift. Building a serviceable house can be done with basic tools and a little know-how, but some homes turn out to be architectural marvels.

What is the magic that transforms the mundane to the exceptional?

Magic happens in the confluence of design and execution. In this course, we are going to talk about the art of design. It's something of an elusive art – very difficult to describe. And, as with other arts, people bring varying degrees of raw talent and often build their skills with further training and education.

A study of any of the arts includes both developing an appreciation for the discipline's technical points and gaining skill through practice. This article focuses on the technical aspects of instructional design and attempts to describe the art of design.

The art of design as a set of decisions

One way to demystify art is to explain it as a set of decisions.

The musician makes decisions around the key of the instrument, the arrangement of notes, the pace, and the volume of play. The artist chooses medium, color, brush, and technique of application. The architect determines style, purpose and flow of rooms, materials to be used, and more.

Similarly, instructional design can be broken down into a set of decisions.

Intended Learners – Who are the learners whose needs you are trying to meet – the people who will most benefit from the course? There's a dramatic difference between a course meant for developmental learners and one meant primarily for high-achieving students. While we don't generally choose the learners who participate in a course, we need to keep in mind some typical



characteristics in order to design a successful course. If students in a course are dramatically atypical, we may need to consider redesigning some aspects on the fly as the course unfolds.

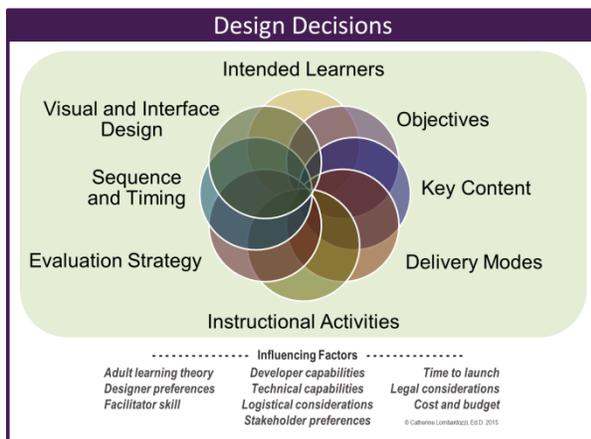
Objectives – What are your goals and objectives? What do you want people to learn, and what you want people to be able to do or achieve with what they learned? In academic contexts, these objectives are often crafted by curriculum designers and individual instructors need to ensure that their course design meets the given objectives.

Key Content – What is the specific content of the course – the knowledge base, skills, procedures, processes, and/or frameworks that are the substance of what needs to be learned? Decisions also need to be made about the depth of that content for a particular course – some courses overview topics, and some are intended as deep dives.

Delivery Modes – How will the learners attend the course or access the learning materials (e.g. classroom, e-learning, online learning, video, podcast, resource center, etc.)? In the digital age, most courses have some sort of blend of approaches, but usually have a primary mode.

Instructional Activities – How will the learners engage with the material, the instructor, and each other in order to learn? What are the specific activities we need to craft in order to ensure that objectives are met?

Evaluation Strategy – How will the instructor and the learners know that learners are achieving the goals and objectives of the course? What are the plans for formative and summative evaluation?



Sequence and Timing – What is the specific organization of the modules of the course? How will learning activities flow from one to another? How long will the course take? What is the planned schedule of events?

Visual and Interface Design – What are the key visual design elements of the course materials (graphics, templates, color)? What is the look and feel of the portal through which learners access the materials (the learning management system)? To be a skilled designer, you need to understand the options within each of these decisions and be able to imagine the consequences of implementing and combining various decisions.

It's important to appreciate that the decisions can't be made independently of one another. Looking at the list, you can imagine how a specific decision in one arena constrains or impacts the decisions that can be made in another. If you've already selected online learning as the delivery mode, your techniques and activities are limited to those that can be managed online. If your course is meant to run with a specific number of contact hours, you can only accomplish so much in terms of learning objectives, and you have to be very selective allocating and managing time needed for potential activities. Your specific content often greatly influences the techniques you put in play.

The art of design involves mentally experimenting with various decisions in each arena until you find a blend that works – much like an artist might mix paints of different colors until the right shade is achieved.

Design influences

Like all decisions of consequence, many factors are taken into consideration along the way. Balancing these eight decisions is one factor. But a fairly substantial list of other influences need to be deliberated in as well.

- What do you believe about how people learn?
- What are your preferences regarding delivery method and technique?
- Do you or other potential faculty have the capability to conduct the activities effectively?
- What tools and capabilities do you have related to the development of materials and delivery of the program? Do you have colleagues who support you in these efforts? If so, what is their capacity and skill set?
- Do you or the faculty teaching the course have the technology and the technological savvy to pull off activities you are considering? To what degree do the students have the appropriate technology and technological experience?
- How easy or hard will the program be from a logistical point of view? Do you have systems or colleagues that support logistics? What can they support (and what can't they support)?
- What will your learners prefer? What will your dean approve? How much influence and leeway do you have to do something atypical?
- How much time do you have to get up and running as compared to how much time it will take to ready specific aspects of your course?
- What materials and tools do you legally have permission to leverage?
- What are the relative costs (time and money), and how much do you actually have budgeted?

The questions come from many angles, and the answers often produce contradictory implications. Your careful judgment is required to work through the options and rank the sensitivities. Often, the grand answer lies in making small changes – like a painter: a little gold here, a little blue there – until the picture that emerges looks great. Your designs may not always be perfect, but continued work on them can produce a masterpiece.



How adults learn

A critical aspect of the success of a design is the degree to which it adheres to principles of adult learning – key characteristics that impact the degree to which learning will occur. Research and theory give us many principles, but I (humbly) think these are the most essential ones.

Motivation. Learners need to be motivated to learn; they need to understand why they are learning or in some way be curious about the topic in order to engage their minds in learning. Designers and instructors help to make them curious by demonstrating up front what the learning is to be used for, or talking about the longer term benefits of learning specific material. Contextualization can be key here.

Access to quality learning activities and resources. Each technique or type of resource you might create should be of good quality, which requires understanding what makes the techniques you use effective (e.g. presentations, demonstrations, role plays, labs, etc.). The better quality the teaching materials and activities, the more likely students are to learn. And, in general, people learn better when activities are active, intellectually engaging (as well as physically, and/or emotionally engaging), linked to what learners already know, well organized, contextualized, and purposeful, among other characteristics.

Reflection and discussion. This is the activity wherein students process what they are learning, solidify it, put it in their own words, incorporate it into their broader understanding of the subject matter, and consider where and how it will be applied in the future. We help ensure learning by embedding activities that promote reflection in the course, and that reflection can be deepened when done in conversation with others.

Application and feedback. Learning is solidified when it is applied. People need to understand what their learning allows them to DO, and application activities actively engage students in transitioning knowledge to action. If it isn't possible to give learners relevant practice in the context of the course, then designers should try to give them some support for afterwards, perhaps by supplying self-critique checklists or coaching guides.

Relationship of process and art

To explain how design is done, some people will give you a run-down of their design process – the steps they take to bring ideas to fruition. That description can explain what you see – how information is gathered, how resources are pulled together, the flow of activities from start to finish. But it doesn't show what is occurring in the mind of the designer; it doesn't show how elegance and excellence is attained. If you could explicate designer's processes, you would likely find that they are quite idiosyncratic and based on a variety of models.

Regardless of your framework for crafting courses, the processes of design (making the decisions described above), development (readying materials and activities for learners) and implementation (conducting classes) are iterative and fluid. Most instructional designers move freely among these processes as they solidify plans and respond to the needs of learners in the moment. That's part of the art.

“Every design process cycles through foggy periods of seemingly unstructured experimentation and bursts of intense clarity, periods of grappling with the Big Idea and long stretches during which all attention focuses on the details. Each of these phases is different, and it's important.”

~ Tim Brown, *Change by Design*

Design thinking

Looking at the art of design provides a great window into the general processes of creation and innovation. In the study of innovation, a number of organizations have tried to capture tools and techniques that might prove a useful way of organizing our creative work –they call the process *design thinking*. Ideation, options, research, prototype, learning, choice... these are some of the terms in the language of design thinking.

According to Tim Brown, president and CEO of IDEO, a design consulting firm, “*design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for success.*”



Our best and most workable ideas lie at the intersection between what is effective, what is desirable, and what is feasible. Design thinking requires intuition, leaps of imagination, and some tolerance for risk.

The process looks something like this:

1. Define the problem.

In instructional design, the problem can be as big as the course performance objective you are trying to meet or as narrow as how to get a specific exercise to work with certain constraints. Defining the problem focuses our energies.

2. Generate options.

Scientist Linus Pauling, winner of two Nobel Prizes, said, *“to have a good idea, you must first have lots of ideas.”*

One challenge of instructional design is getting caught in something of a rut – coming back to the same favorite types of activities, or organizing all your courses or modules in a familiar pattern. Instructional designers need to generate options, and there are many ways to do that.

It can be helpful to skim design idea books and to surf the internet for examples. You probably won't (or can't legally) directly copy these ideas, but they will excite your creative juices a bit. Enriching your stimulating inputs (what we read, watch, and do) gives us fodder for the creative design process.

You also might want to form a creative posse – colleagues you can rely on to be good sounding boards and brainstorming partners. It's also often helpful to get people who have no stake in the outcome to help to generate ideas since they'll have a fresh take on the situation.

3. Prototype and refine options.

Sometimes the only way to see if something will work is to prototype it and test it out in some way. A course designer can often prototype and test specific approaches and activities without fully developing an entire program.

Testing can be as simple as sharing your plans with a colleague for feedback or as complex as recruiting some students to participate in the activity so you can see how it works (or doesn't work). The mantra “fail early, fail often” might be called to mind – better to know what isn't going to work as early in the process as possible.

Prototypes don't have to be full-blown working models – anything that helps you to see what you are working on in a more tangible way will help the design process. Tim Brown calls that “building to think” and it's a very useful approach for both generating additional ideas and converging down to the best choice.

4. Decide and execute.

Designs are defined by the decisions you make, and they are made at two levels.

On one level, you have options and decisions to make in each of the eight areas described above. As we have seen, deciding is rarely a simple process, since your choices must take into consideration the other design decisions and the influencing factors.

On another level, you'll often find that you can devise several ways of balancing the decisions that will work, and you'll need to decide among them. The influencing factors will once again come into play, and your prototyping will also give you feedback to consider.

Since course design and development is an iterative process, it's likely you will revisit and tweak design decisions even after you have moved forward to execution of the plan.

The Design Palate

The art of instructional design, like any art, is difficult to describe, even as you become more expert at it. Instructional design, at its heart, is the act of making an array of interconnected decisions

that constitute the outline of an instructional event that effectively achieves the given objectives. This article highlights ingredients important to that art – the decisions you make, the influencing factors (especially your beliefs about how adults learn), learning principles, and your ability to think creatively. Your understanding and capability related to instructional design will improve with practice and feedback, so you are encouraged to get plenty of both to continuously hone your skills.

