Each of Byran Lawson’s articles is an introduction chapter of his books. One is from “Design in Mind” and the other is from “How Designers Think”. Donald Schon’s article is also excerpted from his book, “The Design Studio”. Nigel Cross’ “Research in design thinking” is an introduction article for Proceedings of a Workshop Meeting held at the Faculty of Industrial Design Engineering in Delft University.

In Cross’ article, Cross first described various research approaches in design thinking. These approaches are interview with designers, observations and case studies, protocol studies, controlled tests, simulation trials, and reflection and theorizing.

In addition to summarize different design approaches, Cross referred many research findings to make clear both the formulation of design problem and the solution generating process. Cross’ point is that designers often consider problem-and-solution as a whole and explore it with the language of design, for example, drawing and modeling in architecture. Designers also change goals and constrains during design process. In the end, Cross raised two questions: Is it appropriate to apply professional practice in the teaching process? What is the purpose of design thinking research?

Both of Bryan Lawson’s articles have similar underline argument: design thinking is a skill rather than some intuitive thoughts and people are able to understand design thinking through scientific investigations. Lawson emphasized that traditional education emphasized largely on product rather than process, but design is somehow independent from specific domain knowledge and the end product. Although good understanding of skill does not promise a good design, different levels of design technology contribute to design solutions.

Schon describe the detail about the interaction between an instructor and a student in an architecture studio. The instructor use drawing as a media to overlap with oral interaction. It became a modal of design language and Schon named the process as “reflection-in-action”. Instructor and student work back and forth between problem and solution.

The accordant point in these four articles is that in the design thinking (architecture as example), the formulation of solution is not directly form the problem itself. Design thinking involves both solution and problem. Designers try to understand problems through their attempts to solve them. Cross described it as “Designers change goals and constraints during the process of design”. Lawson named the process “analysis through synthesis”.

Many of Schon’s descriptions remind me the design experience in Career Discovery, which is an intensive program for people who consider a career in design to experience education and work in design profession. I had four projects. When I was exploring the fourth project, I found that I have no idea how to star a design. The instructor suggested me to start with the surrounding context. Later, I expand the geometry from of the vicinity. I also changed the terrain of land to wave shape because of the adjacent waterfront.
The idea to fit the design to the surrounding is good, but my design was simple and garbled. I understood that I need to learn more about architecture design. I did not pursue architecture design career. I switched to human computer interaction field. I start to think architecture differently. One Basic question I have is that who architect works for? Client or his/herself? Most of the time, you will find that architect think he/she is the profession and he/she needs to educate client. I did not pursue architecture design career. I switched to human computer interaction field. I start to think architecture differently. One Basic question I have is that who architect works for? Client or his/herself? Most of the time, you will find that architect think he/she is the profession and he/she needs to educate client. It is no doubt that architect will consider the use and the users. However, the real people-to-building interaction is seldom considered. Architect will assume some possible usages, but there are few feedbacks to architects after they finish the building. An interesting example is in Schon’s normative design domains. You could find program/use, but not interaction. Give software design as an example, the purpose of the software is important, but the usability is also essential. Most people will agree this, but if you apply the same principle to architecture design, architect care about it less. Aren’t buildings for people to use? It is much easier to understand the cause-and-effect in software design than in architecture design.

This also related to Cross’ unanswered question. Is the model of professional practice good for students’ learning? I bet the official answer is no, but professional practice is embedded, which most students need and want it. The architecture education system is also on the side of having professional practice modal embedded. The master degree of architecture is an example for me to illustrate. Many architecture programs in United States have two tracks for graduate study. One is for people who already hold an architecture degree; the other is for people without any design background. Architecture is one kind of professional education and it is easy to understand that the later is to help a student become an architect. If people already have bachelor degrees, what they will experience differently in a master education. The difference between a bachelor and a master in architecture might be only some larger scale projects and a thesis. You might say that thesis means a student is qualified to produce academic research, but there is still option for a design thesis. The goal for master of architecture is to train a student to be an architect rather than to teach student how to do a research.

Architectural education is inherently a professional education. There are more real considerations to think of. It could be more real. For example, the licensing board in Washington State requires a bachelor architecture student working for six years under a licensed architect to be qualified for the architect license examination. However, a master architecture student need only three years. The purpose for an architecture student to go for a master degree might be just to reduce the time to qualify for the license exam.

One of the paragraphs in the article from “How Designer Think” also mentioned that good understanding is relevant to design, but this alone will not make a successful and productive designer. Here raised two questions? One is obvious vague, what is a good design; the other is the underline meaning of the word “productive”. I won’t address the question about good design here, but I want discuss about the “productive” designer. The author is from architecture discipline. To say that the word “productive” mean something in the architecture discipline might be a little pragmatic, but I believe it did mean something. It may be one of the criteria that architects evaluate other designers.
There is another paragraph in the article form “Design in Mind” which mentioned some thing about Modern Movement. It reminded me one question about good design. I remember that Christopher Alexander once wrote two books named “The Pattern Language” and “The Timeless Way of Building”. He defined some pattern of “good” design in both book. His idea is not anymore popular in architecture discipline, but I still consider that there are some things valuable for reference. The situation is the same for Modern Movement. Architecture today is not following some simple principles, but many ideas in Modern Movement are still valuable for reference. Is there any people use the term function? It seems that there is less flexibility in architecture theory.

If we go back to Cross’ conclusion, we will find that he state that the lack of a simplifying paradigm of design thinking inhibits the transformation from research to practice. However, I do not believe there will be a simple answer or a general theory for everything. The research in viewing design as problem-solving, information-processing, decision-making, or pattern-recognition contributed to the understanding of design thinking and each could be apply to some certain situation. Design thinking is complex no matter how we approach it. The more we study it, we will probably know more, but it won’t lead us to an ultimate answer.