

game.” (3) The *advanced beginner* recognizes that design problems are highly individual and situated. At this level, design problems are considered to be less amenable to the use of standard solutions than they were at the novice level. The acquisition of a language for discussing and criticizing design distinguishes this state of expertise from the previous ones. (4) A *competent* designer is one who can handle and understand all the common situations which occur within their design domain. Where the designer in the earlier stages of design-expertise development was essentially reacting to the problem situation, a competent designer actively steers the development of the design problem. As a result, the designer has much more control, allowing a design practice to develop depth over the course of several projects. (5) The *expert* is known for an approach or set of values that is expressed through his or her design work. This level of design practice is characterized by an implicit recognition of situations and a fluent, intuitive response. (6) *Master designers* have taken their practice to a level of innovation that questions the established way that the experts work, and pushes the boundaries of the field. Such work is published (through pamphlets, reflective papers, interviews, etc.) for others to study. (7) The work of a *visionary* is explicitly aimed at redefining his or her design field. Visionaries express their radical ideas in design concepts, exhibitions, and publications rather than in finished designs.

Most importantly, these seven levels of expertise represent seven different ways of design thinking: choice-based (naïve designer), convention-based (novice designer), situation-based (advanced beginner), strategy-based (competent designer), experience-based (the expert), developing new schemata (the master), and for some visionary individuals, redefining the field. Each of these seven levels of design practice comes with its own methods, its own critical skill set, and its own mode of reflection.

The broad spectrum of design practices can be visualized as a matrix in which the five categories of design activity are crossed with the levels of expertise (after all, the activities can each be approached in at least seven different ways). And such a matrix could be made for every design discipline, from architecture to product design, visual communication design, fashion, animation, and so on. Design is a huge and rich field full of professions that hold many different practices. Out of this vast repertoire of design practices, we will mainly focus on the “formulating” activity, as it has surfaced in the earlier analysis of reasoning patterns as being characteristic to design. To learn from the best that design practice has to offer, we will focus on the more advanced levels of