Unlocking the key to less complicated healthcare systems

A person botches up when trying to use a thing or work within a system. Do we blame him for not "getting it", or simplify the tool or task? According to design guru Mr Don Norman, we should neither blame him, nor simplify the tool or task. Instead, we should make the task or machine understandable for its user. Keen to find out how Norman's axioms for design can be applied to health professions education, Mr Issac Lim, Head of HOMER, skyped him out.

Norman, the Director of <u>The Design Lab</u> at University of California, San Diego, thinks that healthcare systems can be developed in a way that is not complicated, no matter how complex they may be.

"In my writings, I have come to realize that the world is complex and that complexity itself is not a bad thing. People who complain they don't like complex things, and like simple things instead, I say no, that's wrong," Norman said.

He believes that giving a structure to a complex situation is the key to making it less complicated or confusing.

"It is better to make a distinction between complex and confusing, because if it's confusing, then it's bad ... We want understandable, even if these may be complex," he said. Thus, even if "it is a very complex situation, (once) we give a structure, it becomes understandable."

Using an operating room as an analogy, he explained how it is possible for a complicated situation to be well-organized, with different compartments located in various parts of the room and different people who are familiar with their respective duties.

"How the anesthesiologist arranges his equipment and how the surgeon arranges hers, with common displays that often come with the equipment – they are all nicely segmented so that each of these activities are in their own place," explained Norman.

Designing for a whole, but dividing when you must

"As a whole, the hospital is set for efficiency. At the same time, it is also set for different specializations," Norman said. "You have to think of this as a system. And yet, there are many parts in this system."

The mobility of workers, he observes, makes it even more challenging to build a system that can retain dispersed knowledge and know-how within the organization. Yet, it is also more imperative than ever to find coherence in the complexity.

"Imagine communicating in operating teams which vary each time. That's why you have to think of whether it's a system ... and (if so, whether) it's too big and complex – (and to then) divide it up into smaller problems," he said.

Designing for more viewpoints, but doing it realistically

While information technology can be designed to facilitate interaction in complex healthcare settings, Norman thinks that these systems should be developed to accommodate multiple viewpoints in a realistic manner.

"The design developed by the programmers, the engineers and sometimes, the analyst – they all could have a logical understanding on how it ought to be done. But the logical understanding doesn't match the real practices," Norman said.

"In one study I was involved in, we found that in Internal Medicine, they see a continuous range of patients. They saw the patient for about 15 minutes but took 20 minutes to enter all of the information into the computer system. This has to change."

He thinks that systems should present information in a way that is appropriate for everyone involved in the case, including not just the patients and health professionals but also the parties who are indirectly involved, such as the administrative and accounting departments.

"That said, it's easy for me to say this is how we should do it. But it's not easy to do it."

Don Norman is Director of the Design Lab at the University of California, San Diego, cofounder of the Nielsen Norman Group, a member of the National Academy of Engineering, IDEO fellow, and former Vice President of Apple. He serves on numerous company and educational

advisory boards and boards of directors. He has published 20 books translated into 20 languages including Emotional Design and Design of Everyday Things. He can be found at www.jnd.org