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## Journal Pre-proof

Presentations beyond the matrix: the Fred MacLeod JPS lecture, CAPS 2019

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- Title. Presentations Beyond The Matrix: The Fred MacLeod JPS Lecture, CAPS 2019

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**Abstract**

Current research calculates the time between development of new evidence-based knowledge into

established clinical practice as seventeen years. This is the knowledge translation gap. The factors

influencing this delay are multiple, but it is clear across the history of medicine that knowledge from new, well constructed studies does not lead directly to change. A significant factor within the knowledge translation gap is the nature of the presentations as they are currently delivered. In the 1999 film *The Matrix*, there is a discussion between two characters regarding the concept that the world we perceive is, in fact, a virtual reality. As we inhabit this construct, we have a fleeting awareness that the world may not be as we perceive it, but the truth of what that entails is overwhelming. The implicit beliefs underpinning a presentation are that reading a presentation is teaching, and the corollary that listening to that presentation is learning. The evidence in the psychological and educational literature is clear that this is false. The implications of this finding are significant. This is *The Matrix* of knowledge translation.

**Keywords:** Presentation skills; *The Matrix*; Bloom's taxonomy; PowerPoint; Knowledge translation

## Introduction

I firmly believe that medical education as we understand it is a virtual reality. This is The Matrix. Our belief is that the practices that we have in Paediatric Surgery are evidence-based, widely shared, and perceived to be effective. The evidence base for treating pyloric stenosis with atropine exists and research supporting this practice continues to be published. In addition, there are surgeons using the Rehbein procedure for correcting anorectal malformations and publishing results that are widely shared, evidence-based, and perceived to be effective. Are your PowerPoint presentations, in whatever form they are, evidence-based, widely shared, and perceived to be effective? This is The Matrix.

The Matrix is a film which explores the concept that we are living in a virtual reality, that our perception of the world is false. Two facts that support the concepts of this virtual reality relating to PowerPoint are: 1) reading our PowerPoint presentation is not teaching, and 2) listening is not learning. When you put these two facts together, it indicates that the world of traditional PowerPoint presentations resulting in learning and potentially new knowledge creation is a virtual reality. We are wasting time.

## The Problem with Traditional PowerPoint Presentations

Typically, we expect to see presentations with dense text, excess data, and endless bullet points. Why? *Tradition*. We seem to believe it's the right thing to do. We think we look good with our bullet points, with a ton of data, with all of our icons down to the bottom. Another reason? *Fear*. Fear of change in the status quo. We don't want to stand out and be different.

The evidence clearly outlines how ineffective traditional PowerPoint presentations are. It has been published that two hundred facts are delivered in the average 10 minute presentation, of which 7 will be retained with deliberate concentration; without concentration, typically only 3 facts are retained. This is approximately one and a half percent of the information delivered. Kosslyn found we process written text in one part of our brain and auditory information in another part of our brain [1]. To effectively learn information, only one stream of data can be processed at a time. This concept is referred to as cognitive load. In addition, there is the dual processing theory of multimedia theory which proposes that when people feel patronized, a message loses its value. Using pictures or diagrams and words which are perceived as redundant has the effect of decreasing the value which the audience places on a given message. Research also finds that the delivery of the presentation and perception of the presenter affects our reception of it.

Bloom's Taxonomy [2] describes stages of learning starting with knowledge. From that foundation, we progress to comprehension, application, analysis, synthesis, and ultimately evaluation. PowerPoint presentations which present knowledge without attention to these stages fail to enable the audience to progress through the stages of meaningful learning.

### **The value of p Cubed Presentations**

Presentation skills are a skill. Education is a skill. How do we achieve competency in these skills? In the model outlined below, an effective presentation is made up of three parts: a presentation, a presentation, and a presentation, the p cubed value of a presentation.

**The first presentation, p1, is your message.**

Whatever it is you have to share with the audience, it is essential that you start with the message. To determine the message of a presentation, stop thinking about the “what” and start thinking about the “so what.” The ...so what does this mean, the ...so what are the implications, so ...what should we do now? The perspective to consider in thinking about the “so ...what” is that of the audience. Who are the audience? Why are they in that lecture theater with you? And what are their needs? What is the audience going to do with the information that you're going to give them? Then the presenter needs to move the audience through knowledge to comprehension and ultimately to evaluation, even perhaps knowledge creation. That is how we should advance learning. We need a single identifiable message. The presenter should have three steps within a talk that we can move through, and link them together so that we all get to the punch line, together.

### **The second presentation, p2, the supportive media.**

The next thing is to consider our supportive media, p2. What is the supportive media and what is its value? For many of us, it's our annotation. It's the thing that we read out to people, that we print off to give to people as a handout; we expect them to read whilst we just stand here and carry on. That's a virtual reality and what we should do is change our supportive media, the p2, from annotation to illustration. Stop writing the message, and support it. Recognize that p2 has a value in your presentation, but it is not your presentation. Images change the way the audience thinks, affects the way they remember things, and it affects the way that they behave.

I suggest that you only need 11 slides in a presentation: a start and a finish, three steps, and three steps within each step. That's all. You need the slides to be simple and for the steps to be clear, identifiable, and memorable.

Make it look good. Stop using templates. Use type effectively, keeping the audience perspective in mind to communicate your meaning, but realize that type style, position and size affect how the audience views a message.

**The third presentation, p3, is the delivery.**

The value of a presentation is the product of the value of the message, the value of the media, and the value of the delivery. A presentation is a performance. It's a performance because what you have to say matters. Successful delivery depends on preparation. Take the hour before the delivery to ensure the supportive media will work as planned. Preparation and ensuring all the connections is just as essential as preparation before a major surgical case. Think of what might go wrong. There's more to a delivery than preparation, though. It's important to recognize that stage fright and performance anxiety is real. This type of presentation is challenging - to move from behind that lectern to be in front of audience to share your ideas.

**Conclusions**

Traditional PowerPoint presentations are a problem. Reading out presentations is not teaching. Sitting there listening is not learning. It never was, and never will be. The fact that you have your degree is a tribute to your learning, not to what happened in presentations. We need to accept the virtual reality of that, and change. It's about taking complex information, constructing a single, memorable message, and making that portable. The old ways have to die...they don't work. Please, make that choice and go forward. Embrace a new way of sharing your clear, supported message by connecting with the audience.



## References

1. Kosslyn SM, Kievit RA, Russell AG, et al. PowerPoint(®) Presentation Flaws and Failures: A Psychological Analysis. *Front Psychol.* 2012;3:230. Published 2012 Jul 17. doi:10.3389/fpsyg.2012.00230
2. Bloom, B. S.; Engelhart, M. D.; Furst, E. J et al (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain. New York: David McKay Company.

## Highlights

- Reading out a presentation is not teaching.
- Listening to a presentation being read out is not learning.
- The science of psychology and education confirms these facts
- Your experience confirms the same.
- We need to make a choice and change the nature and delivery of medical presentations

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