Employee Training & Awareness Programs

What is Most Effective... Narrated Video/Animations or Static Printed Postings?

A CrewSafe White Paper
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CrewSafe®
a Spellbound company

Training & Awareness Programs

Compelling training content can play one of the most important roles in driving success throughout an organization, but defining what works can be difficult and at times seem impossible. You've probably experimented with various training and awareness programs and methods to determine and understand the precise forms of content that engage your employees and will actually connect with them, but you're still asking yourself... "What really works?"

Since 1992, Spellbound Development Group has been blessed to work with some of the world's largest and most amazing brands, to help them connect and engage with their employees on the topics of safety and loss prevention, by applying our expertise in creating solutions for brand protection challenges.

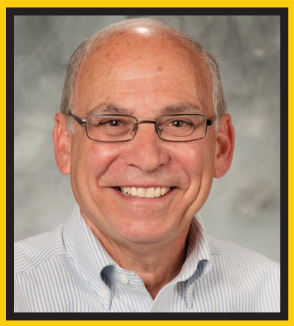
What Really Works?

Throughout our history and real-world experience we've learned a lot. We have come to recognize how and why employees learn and absorb information and how we can increase the likelihood of success in our customers. We've applied this knowledge and are proud to have produced award winning Employee Awareness Posters Programs. Although the hundreds of programs we have developed and produced have been in practice for the past couple of decades, it wasn't until recently that we were able to confirm and identify the elements that have made them so successful. To confirm our findings we hired one of the world's top researchers in the field of Educational Psychology and Learning Theory and asked him to uncover the holy grail of learning. The present review examines research related to two aspects of training and comprehension: 1) posters - static versus dynamic multimedia lessons, and 2) spaced versus massed practice.

Here's what we found.

THE EXPERT

- Professor of Psychology at the University of California, Santa Barbara (Since 1975)
- Ranked #1 as the most productive education psychologist in the world from 1991-2001 (Contemporary Educational Psychology, Vol. 28, pp. 422-430)
- WINNER: 2000 E.L. Thorndike Award & 2008 Distinguished Contribution of Applications of Psychology to Education and Training Award
- President of Division 15 (Educational Psychology) of the American Psychological Association
- Vice President of Division C (Learning & Instruction) for the American Education Research Association
- Author of more than 500 publications



Dr. Richard E. Mayer

Employee Training... What's Most Effective?

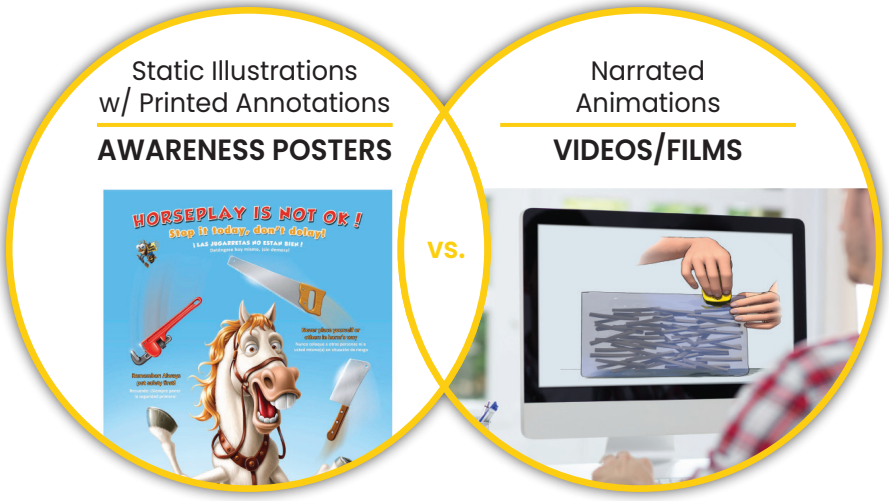
STATIC VERSUS DYNAMIC MULTIMEDIA LESSONS

Example of a Spellbound® Safety Training Poster

... students **learned better from a series of annotated illustrations** than from narrated animations **based on the same illustrations and words...**

Research Question

First, given the static nature of instructional posters, a relevant research question concerns whether people learn better from static illustrations with printed annotations or from narrated animations covering the same material. Static illustrations with printed annotations consist of one or more graphics with short explanative text printed next to the corresponding portions of the graphic. A narrated animation consists of an animation in which objects move accompanied by spoken text.



Empirical Evidence

In a series of four experiments, Mayer, Hegarty, Mayer, and Campbell (2005) found that students learned better from a series of annotated illustrations than from narrated animations based on the same illustrations and words, including multimedia lessons on how a car's breaking system works, how a toilet tank works, how a pump works, and how lightning storms develop. Similarly, Lowe, Schnotz, and Rasch (2011) found that students learned better about how a kangaroo hops by viewing a series of static diagrams than from an animation that was based on animating the static diagrams. Reviews of research on static versus animated instruction conclude that animations may be more effective for manual performance tasks (such as tying a knot) but not for other learning tasks. (Clark & Mayer, 2016; Hoffler & Leutner, 2007; Lowe & Schnotz, 2014).

Learners have **limited capacity** for processing incoming information so they can be **overloaded by a fast-paced animation**

Theoretical Explanation

The theoretical explanation for learners' difficulty with animations is that learners have limited capacity for processing incoming information so they can be overloaded by a fast-paced animation (Mayer, 2009). The transient nature of information presented in an animation means that when learners are overloaded they may miss some of the incoming information and have no way of revisiting it. However, with static diagrams, the rate of presentation is under learner control because the learner can spend as much time as needed looking at each part of an illustration and may go back to look at parts that were viewed previously. In this way, annotated illustrations are in sync with the limited capacity of the human information processing system whereas animations are not as sensitive to our limits on how much we can process at any time.

Conclusion

Overall, there is research evidence supporting the instructional effectiveness of well-designed annotated illustrations, including evidence that static illustrations can be more effective than animations under some circumstances.

SPACED VERSUS MASSED PRACTICE

Massed Practice: Spending the total amount of study time all in one exposure...

Spaced Practice: Spending the same amount of total time broken into shorter segments spread over a longer period of time (such as several days).

Research Question

Given that static posters can be placed in locations where trainees will be exposed to them multiple times over the course of days, weeks or months, a relevant research question concerns whether people learn better from one long exposure to material on a single day such as a lesson based on animation (massed practice) or from many short exposures such as seeing a poster for a short time on many days (distributed or spaced practice). Massed practice refers to spending the total amount of study time all in one exposure to the to-be-learned material whereas spaced (ordistributed) practice refers to spending the same amount of total time broken into shorter segments spread over a longer period of time (such as several days).

... static posters can be placed in locations where **trainees will be exposed to them multiple times** over the course of days, weeks or months...

... spaced practice is better than massed practice...

Empirical Evidence

In a review of research on massed versus spaced practice, Hattie (2009) concluded that spaced practice was more effective, yielding an effect size of d=.71 which means that on average student performance on a learning test was .7 standard deviations better with spaced rather than massed practice. Hattie suggests that longer rest periods are required for more complex material. Similarly, in another recent review, Dunlosky et. al. (2013) rated "distributed practice as having high utility" (p. 39) because it works for many different kinds of materials and many different kinds of learners. For example, in a classic study on learning to translate Spanish words into English, students who studied four different times across a month performed better on a final test than students who studied four times within one day (Bahrick, 1979). In another representative study, Rawson and Kintsch (2005) found that reading a text passage twice in a row (massed practice) resulted in poorer test performance than reading it twice with the readings separated by a week. Clark and Mayer (2016) concluded that spaced practice is better than massed practice in situations involving adult training.

Average student performance on a learning test was ***.7 standard deviations better with spaced*** rather than massed practice.

Advantages of Spaced Practice (Awareness Posters)

1 EFFORT

When learners study the same material repeatedly, they may not work as hard on the repeated studying sessions because the feel they already know the material.

2 RETRIEVAL PRACTICE

When someone studies material for a second or third time, they may engage in retrieval practice - trying to remember the original material - which will be more demanding (and therefore more impactful for long-term retention) for spaced rather than massed practice.

3 CONSOLIDATION

If it takes time to consolidate learning, massed practice may result in a single encoding of the material in long-term memory whereas spaced practice may result in multiple encodings, which should aid long-term retention.

Theoretical Explanation

There are several mutually compatible theories to explain the advantages of spaced practice (Clark & Mayer, 2016; Dunlosky et. al., 2013; Fiorella & Mayer, 2015) - effort, retrieval practice, and consolidation. First, when learners study the same material repeatedly, they may not work as hard on the repeated studying sessions because they feel they already know the material. Second, when someone studies material a second or third time, they may engage in retrieval practice - trying to remember the original material - which will be more demanding (and therefore more impactful for long-term retention) for spaced rather than massed practice. Finally, if it takes time to consolidate learning, massed practice may result in a single encoding of the material in long-term memory whereas spaced practice may result in multiple encodings, which should aid long-term retention. Dunlosky et. al. (2013) conclude that it is likely that a combination of these mechanisms accounts for the benefits of spaced practice.

Conclusion

Overall, there is consistent evidence that people learn better from many short exposures to study material (spaced practice) than from one long exposure (massed practice).

A MESSAGE FROM SPELLBOUND

The studies and research conducted herein clearly shows the most effective training is through daily and repetitive advertising and messaging. It results in positive change in employee and customer safety, as well as customer service and goodwill. It takes a program that grabs the attention of your employees and keeps them engaged to show that you care about them and their customers. We are proud and happy to say that our award winning Off The Wall® Employee Safety Training Programs have achieved this for over two decades.

For more insight into protecting your employees, customers and brand, please visit www.spellboundinc.com and see what a little innovative thinking can do to enhance your organization today!

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