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## Chapter 11: Instructional Message Design in E-Learning

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**Instructional Message Design:  
Theory, Research, and Practice  
(Volume 2)**

**Chapter 11: Instructional Message Design in E-Learning**

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## 11. Instructional Message Design in E-Learning

Meghan Soldani

### Key Points:

- Instructional message design greatly impacts e-learning. Effective instructional design engages learners and motivates them to participate and be in control of their own learning.
- User experience (UX) is one of the most important factors in designing an e-learning tool.
- Visuals, text and audio play an important role in successful instructional message design.

### Abstract

Instructional message design is an essential aspect of an effective e-learning experience for learners. E-learning is the use of online and mobile technologies to develop learning material, content, and applications for online learners. As an instructional designer, it is important to analyze and know your audience, engage the user, use relevant information, and provide a good user experience. Other critical aspects of message design for e-learning include the reduction of extraneous cognitive load, the aesthetic look and feel of the design, designing for learner motivation, and a focused simplicity of design. User engagement can also be encouraged by relevant content and context, and the instructor's or facilitator's active participation in discussion, chat, projects, and group activities.

## **Introduction**

What is eLearning? “There are numerous definitions of the word “eLearning”. These range from Wikipedia’s “Electronic learning (or e-Learning) is a type of education where the medium of instruction is computer technology”, to “the use of computers in a systematic four step process: presented (Step A), practiced (Step B), assessed (Step C) and reviewed (Step D)” (Brown & Voltz, 2005). All have valid points. According to Clark and Mayer (2008), e-learning is any instruction that is delivered on a computer which has the following characteristics: it includes content relevant to the learning feature, uses instructional methods such as examples or practice exercises to help learning, uses a variety of media elements to deliver the content and methods, builds new knowledge and skills which are linked to improved organizational performance. Thus, the goal of e-learning is to build transferable skills and abilities” (Steen, 2008). Throughout this chapter we will discuss the importance of instructional message design when creating an e-learning tool. We will look at how to improve the user experience, different design best practices used in e-learning, how to design an effective e-learning tool and lastly, how important it is becoming to create an e-learning tool that is compatible across different devices.

## **Importance of User Experience**

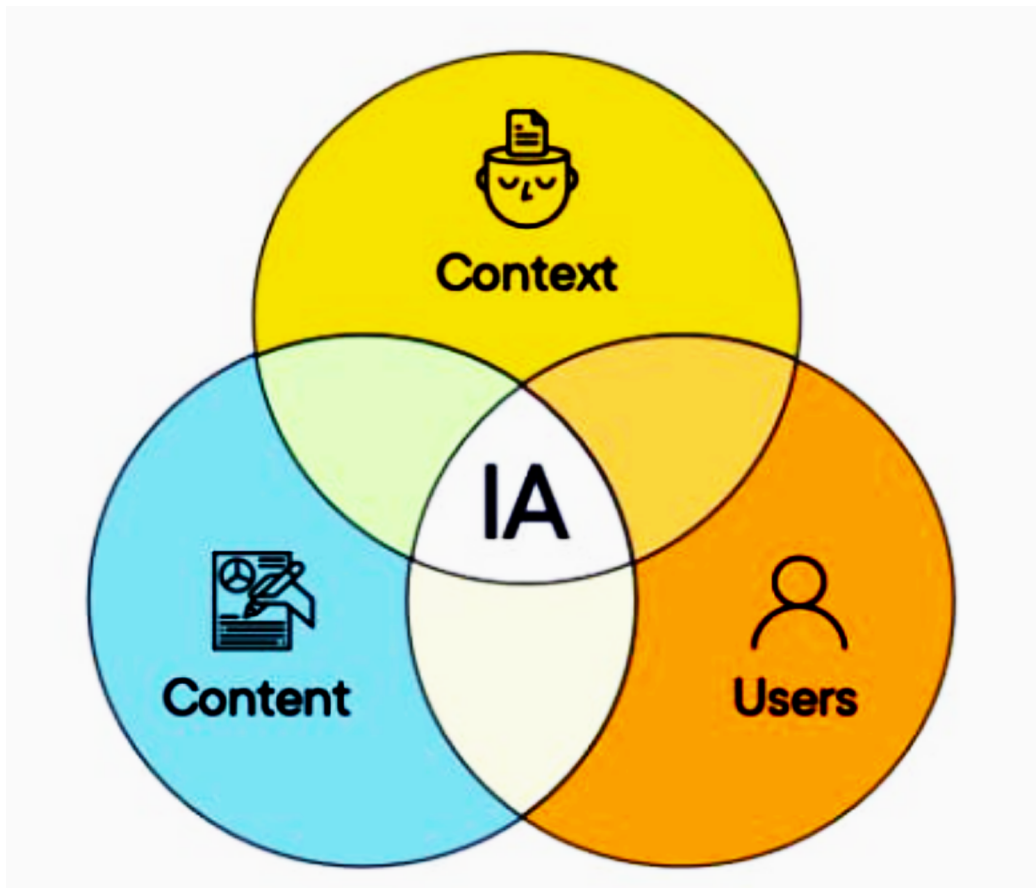
Instructional message design when creating an e-learning tool is very important for many reasons. When a learning tool is made, the purpose of that tool is to help the learner achieve the learning goals set out. Good instructional design helps the learners retain knowledge. If a company puts out an e-learning tool, the hopes are that those that are using that tool can then retain that information and use it in their real life situations. Good instructional design engages learners. To be as effective as possible in engaging your learner, it is essential that the designer understands who their audience is. Good user experience (UX) is also essential when developing an accessible and engaging tool. UX has a direct impact on the learners’ engagement and

achievement. Another reason that instructional message design is so important in e-learning is that it will help communicate messages to the learner which helps them achieve those learning goals and outcomes. The last important factor of instructional message design in e-learning that we will discuss is how it inspires and motivates learners to acquire more knowledge.

User experience is defined as how a user interacts with the experiences of a product, system, or service. It includes a person's perceptions of utility, ease of use, and efficiency ("User Experience", 2021, p. 1). UX is essential to consider when designing an e-learning tool. Making an e-learning tool that is accessible and engaging to learners will allow them to learn more efficiently, motivate them to learn, and keep them on task. What results in a good user experience?

There are five key components that we will touch on that are vital when creating a good UX. A well-organized information architecture is important to ensure that users find the tool easy to use and allows them to effectively complete the task. "Information architecture helps build a structure that connects content with functionality of the web platform" (Khindri, 2020). Figure 1 illustrates the relationship between the elements that help create the best user experience design. As you can see IA, or "information architecture", is at the center of the circles. When context, users and content are all taken into consideration, this design strategy fosters the best user experience.

**Figure 1**  
*Information Architecture*



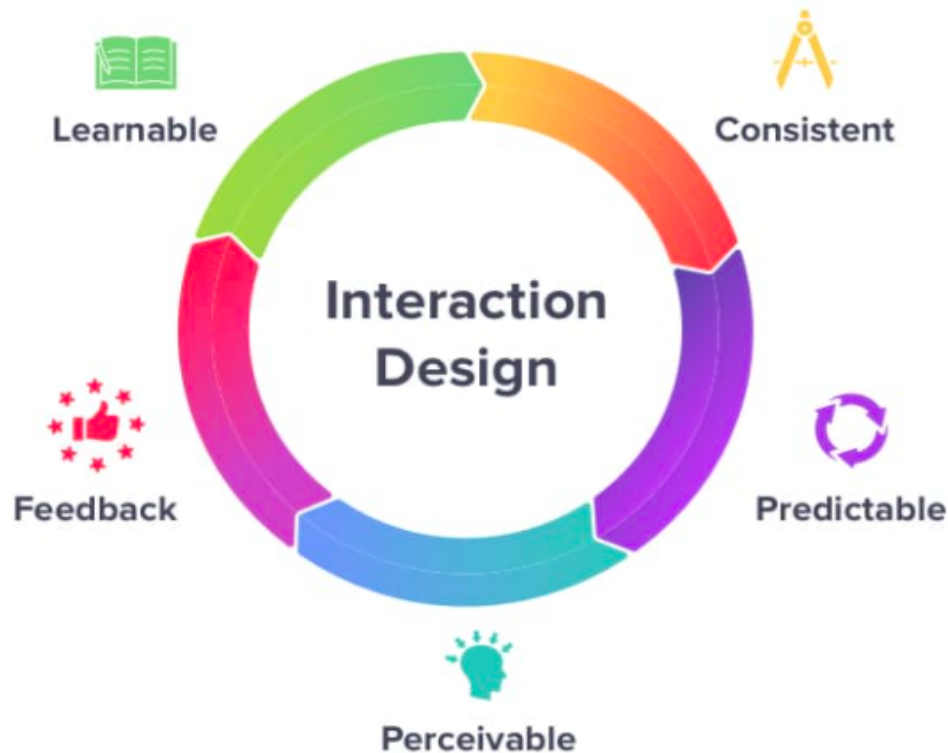
*Note.* Information architecture is the center of creating an effective context+users+content user experience (modified from Khindri, 2020).

It is important to look at the target audience, to ensure that the information is relevant to them. The information that the audience is looking for should be loud and clear and easy to find and understand. Knowing the audience is also the driving force to include appropriate text, icons, images, etc. that will engage that audience. (Khindri, 2020)

**Interaction Oriented Design** is essential to engage your users. Personalizing the experience through touch, sound, feel and aesthetics will draw your audience in and engage them. To achieve this

experience it is important to focus on words, visual presentation, and designing to touchpoints (buttons of the screen that initiates a system reaction) and response. The designers should be careful not to overload the learner with extraneous features and focus the design on relevant, intrinsic functionality and content (see also the cognitive load and multimedia learning chapters in this volume). Words on your call-to-action buttons embedded into the design should be legible, easy to understand and when clicked, respond with the correct action. The visuals that are included in the design should reflect the words and content in the tool. These visuals should only be included if they are relevant and impact the learning of the user in a positive way. When it comes to designing to touchpoints, the tool should be the same no matter what platform it is being accessed on. Whether it be an ipad, phone or desktop; all of the elements of the tool should be the same. This creates a unified experience for the user. Response relates to how quickly the tool responds to the user's action. Call-to-action buttons should lead the user to the intended result, quickly, see Figure 2, (Khindri, 2020).

**Figure 2**  
*Interaction Design Model*



*Note.* Interaction Design in this model comprises the five aspects of learnability, consistency, predictability, perception, and feedback (modified from Khindri, 2020).

**Usability** is an important aspect to consider when creating an e-learning tool. This allows the user to use the tool easily and without confusion. It is helpful if the site or tool is as simple as possible, without losing any of the content and functionality. Extra features should be available only when the user needs them. Users will be more successful and satisfied if they can easily navigate through the tool (Khindri, 2020).

**Planned User Research** ensures that the content is relevant to the user. “When designing to enhance the user experience, it becomes imperative to understand user behavior, preferences, mindset, and

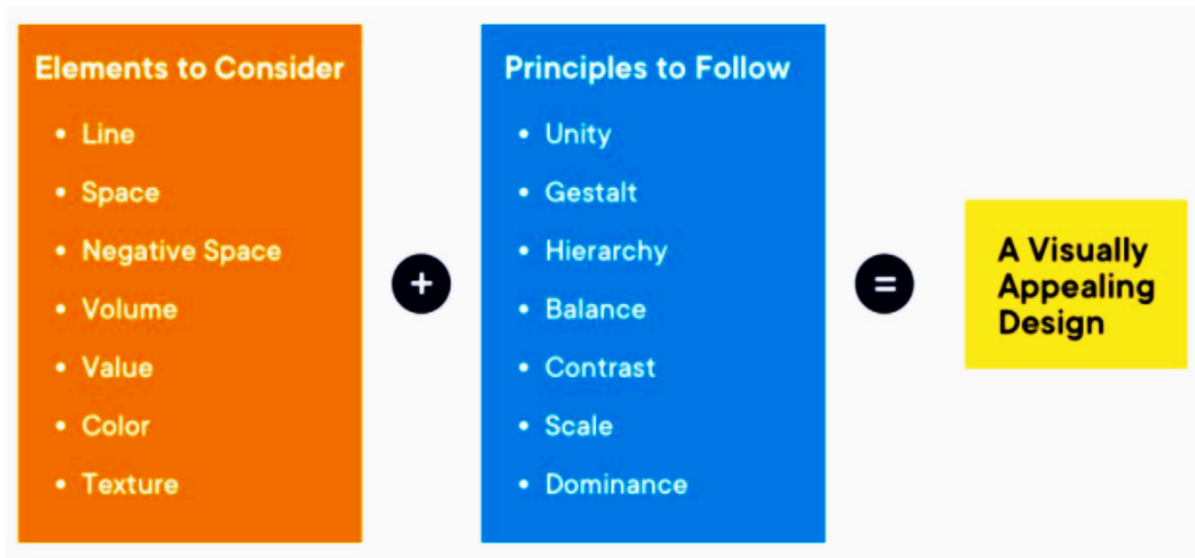


objectives so that the final design copy perfectly resonates with their needs” (Khindri, 2020). This goes back to how knowing your audience is imperative when creating an e-learning tool.

**Visual aesthetics** of the design is the last element we will discuss. This impacts a user's first impression and plays an important role in UX. The look, feel, and functionality (or potential lack thereof) can impact the learners sense of content, instructor, and institutional credibility (David & Glow, 2010). When a learner first visits an e-learning app, site, product, or other message design, the aesthetics are the first thing they see, making a great impression is a critical aspect of emotional connection and motivation (West et al. 2020). The visual aesthetics refers to the layout, spacing, colors, graphics, font, and images of the tool. The visuals and layout of the e-learning tool should engage the user through interaction as well.

The aesthetics of the tool you design affects how receptive the user is to the tool, it also shows who you are as a company, tool, and brand. Aesthetics also help you against your competitors. If you have created an effective and aesthetically pleasing site/tool and your competitor’s site/tool has a lot of helpful information but it lacks aesthetics, users are more likely to be drawn to use the site that is more pleasing to them (Khindri, 2020). Figure 3 illustrates the design elements and design principles to consider and apply.

**Figure 3**  
*Visually Appealing Design*



*Note.* This graphic gives you a summary of elements to consider and the corresponding principals to create a visually powerful design (modified from Khindri, 2020).

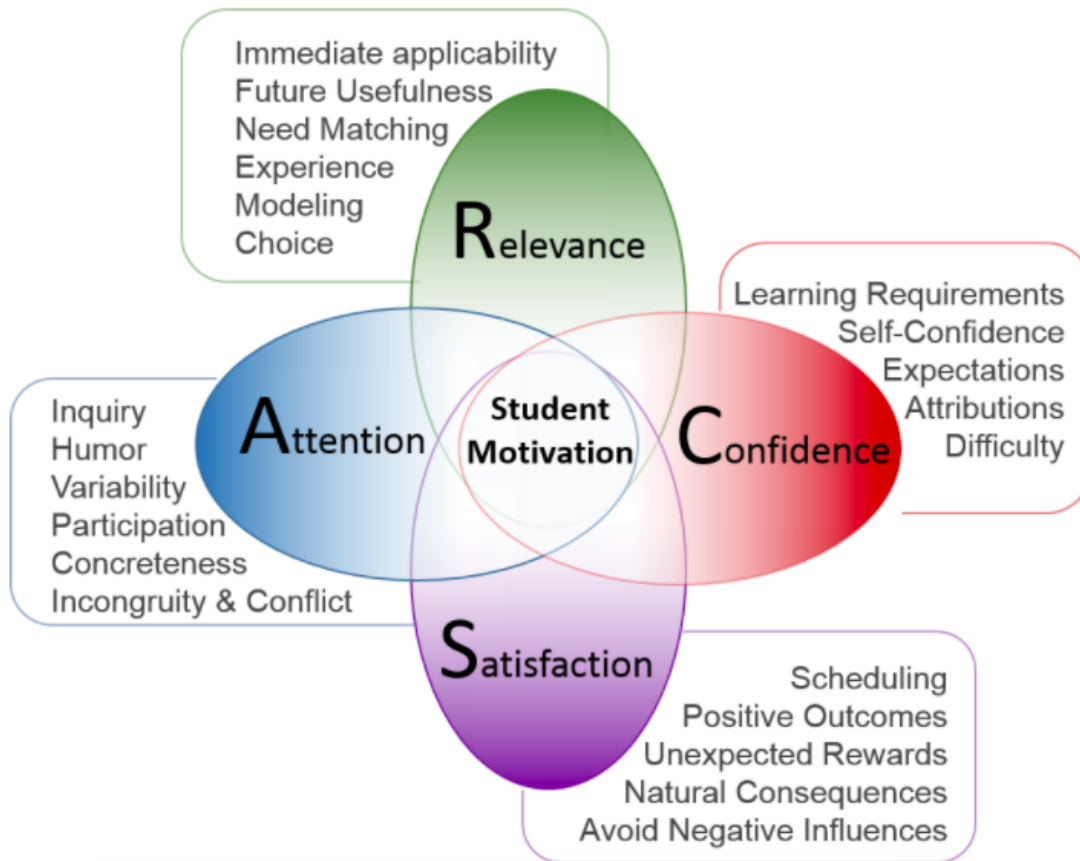
### **Design Models for e-Learning**

There are many different design models that have been successful and widely used throughout the history of message design for e-learning. Stimulating a students' motivation to learn is very important in e-learning. Motivation and emotional support can greatly improve an e-learning tool (Wang et al., 2012). Keller's ARCS model is important because it is based on learner motivation (Keller, 1987; 2009). ARCS is an acronym for the four elements of learner motivation: attention, relevance, confidence and satisfaction. When creating an e-learning tool, these four elements can engage the learner and allow them to be more successful. Grabbing the attention of the learner is important to engage them. This can be done in a variety of ways: through humor, real world examples, or conflict. Relevance can be achieved by linking content to the previous experiences of your audience, when the information is necessary knowledge for the user to deal with a current problem (they are motivated to learn information

that will equip them with skills to fix a problem that they are facing). Confidence is a huge part of the learning process. If a user/learner thinks they can be successful, they are more motivated to engage in that process. To instill confidence in users, creating a tool that gives them immediate feedback and praise will motivate them to continue learning. Also, giving them some control in their learning will help them believe that they are responsible for their own success. Lastly, satisfaction is a key element to this design model. Users receiving praise when they are successful is important for their motivation. Also, when users feel that the information that they are learning will be useful in the future, it will give them the satisfaction that their learning was worth their time and commitment (Papas, 2015).

Keller's ARCS model is all based on a learners/users motivation. Motivation affects how an individual pays attention to information and processes that information. Being motivated allows learners to put all of their effort, energy and time into something to complete the task. If you know your audience and what motivates them, the e-learning tool you create will help those learners be more successful and engaged.

**Figure 4**  
*Keller's ARCS Motivation Model*



*Note.* Keller's ARCS (Attention, Relevance, Confidence, Satisfaction) model summary with components that all relate back to student motivation (modified from Souders, 2021).

There are many different ways to inspire motivation in learners. Challenging learners, without overwhelming or frustrating them is motivational. If an activity is too hard users may become discouraged and if it is too easy they may become bored. Again, going back to knowing your audience and giving them a balanced task is critical. Going back to relevance, if the activity is related to an experience the user has had, then they are more likely to be motivated and engaged in

that task. Also, making a tool that is interactive will engage and motivate the learner (Souders, 2021). Other engagement strategies include group chat and discussion boards with active instructor participation, student presentations, and monitored (to help ensure workload fairness) group projects (Abou-Khalil et al., 2021)

The user-centered design (UCD) is another design model that has become popular in e-learning design (Wang et al., 2012). This model is defined as “an approach to creating experiences for people with their needs in mind where usability is the primary focus” (Wang et al., 2012). The interface should be easy to use and understand, the status and learner’s location in the e-learning tool should be evident and navigable, and results of choices should be evident (Abrams, et al., 2004). This strategy also relates to Keller’s ARCS model and the aspect of relevance. Including the needs of the learner and looking at what that group of people need instructionally, will positively affect how the e-learning tool can be made into an effective solution. Making the information in the e-learning tool relevant to the specific user, will also make the experience more purposeful and motivate the learner.

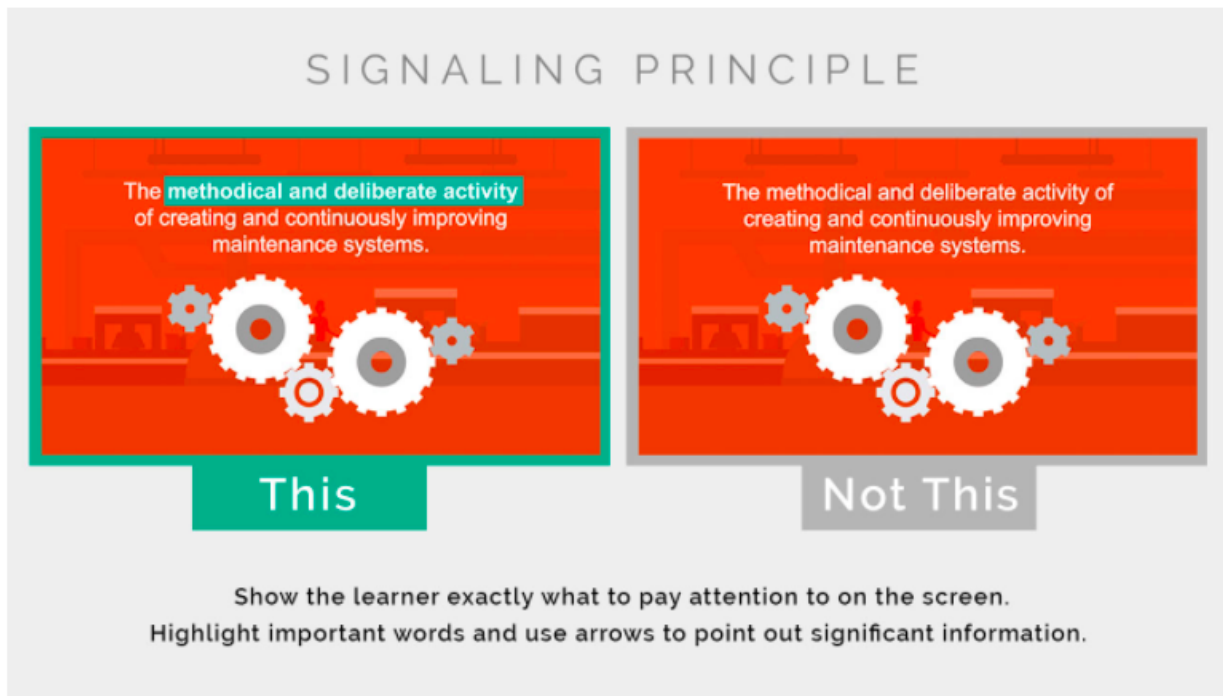
### **How to Design an Effective e-Learning Tool**

One aspect of using instructional message design when creating an e-learning tool is multimedia learning. “Multimedia learning can be defined as a form of computer-aided instruction that uses at least two communication modalities concurrently. This means learning through the combined use of visuals (through pictures, animations, text, and videos) and audio (through narrated voiceover)” (DeBell, 2020). When designing an e-learning tool with multimedia, it is important to keep it simple. Humans learn best when distracting materials are not interfering with their learning. When including visuals, make sure that the images are easy to comprehend. If not, are they benefiting the user or just distracting them? Reduce and simplify the e-learning tool as much as you can while it is still providing the information needed to be effective.

Signaling is also helpful for the user of your e-learning tool. Many times there can be an overwhelming amount of information, highlighting the most important content will help the learner focus on

what they need to be taking away most from that information. The tool then becomes less overwhelming and more direct.

**Figure 5**  
*The Signaling Principle*



*Note.* Drawing attention shows the learner the most important information and what they should be focusing on (modified from DeBell, 2020

<https://waterbearlearning.com/mayers-principles-multimedia-learning/> ).

The redundancy principle states that “humans learn best with narration and graphics, as opposed to narration, graphics, and text.” (DeBell, 2020). If your tool includes an audio narration of the information being provided, it is best to avoid including complex text as well. Having graphics and blocks of text on a single page or slide can overwhelm the learner. Every user learns differently so it might also be effective to give users the option of turning on or off, to show

or hide, any available captions as the narration is going. If you do use presentation text and visuals on the same screen, then it is important to pay close attention to the negative space in between your text and visuals. Users learn better when relevant text and visuals are placed close together on the screen or slide. This will make it easier for users to associate the text and visual together when learning, rather than having to decide which text goes along with the visual that they are looking at.

Audio is important to include, as mentioned before, all users are going to have a different learning style or preference. This audio should be easy to understand and should occur at the same time as the visual or text on the screen/page. The corresponding words and visuals should be presented together. It is also essential to make sure that the voice that is included in the audio is more informal than formal. Users learn best from a conversational voice rather than a formal academic voice (DeBell, 2020).

Another aspect to consider when designing an e-learning tool is segmenting. Users learn more successfully when they have control over their learning. Including a 'next' button, or questions about previous given information will break up the material rather than having one continuous stream of information. Also, it helps learners if the designer includes helpful and useful information rather than always a video of a presenter talking.

Text plays a major role in designing an effective e-learning tool as well. Clarity and legibility of text can enhance learner experience and learning. Also, the organization of the text on the page can have an affect on the user. As previously stated, making sure that text is relevant and located near important visuals will help with the organization of the text. Once a textual layout or template is established, the structure of the material should remain consistent. This structure also includes the length of the text. The user should be able to read the bulk of the information on one page and relevant text should only occupy from 25 to 40% of the total space on the page (Istrate, 2009).

## **e-Learning Design Across Different Devices**

“Responsive e-learning design (often referred to as ‘mobile-friendly content’) is the practice of designing online courses that look and work great on any device.” (Karaolis, 2020). This allows a course to adapt its sizing, layout and interactions to the screen size it is being accessed on. There are a few ways to make sure that your learning tool incorporates responsive design. Using a single scrolling page allows for a modern and effective experience for the user. Earlier in this chapter we looked at how students learn more effectively if the learning is broken up into smaller chunks, rather than one continuous learning stream. This chunking of content will also help when creating a responsive e-learning design. Using that principle will help learners navigate through the tool and absorb more of the provided content. With that being said, make sure those smaller chunks are also not too content-heavy. Like we said before, keep it simple!

Why is responsive design important? “70% of learners feel more motivated accessing training on a mobile device, as opposed to a PC” (Pandey, 2018). This idea of mobile learning allows a seamless learning experience across devices. Being able to reach learners on different devices allows the designer to encourage self-directed learning and target personalized learning. Designers should test their content and e-learning systems on a variety of devices and screen sizes to ensure quality and consistency.

## **Conclusion**

Instructional message design is essential in creating an effective e-learning experience. As an instructional designer, it is important to engage the user, use relevant information, know your audience and provide a good UX. The UX is going to effectively motivate the user of your e-learning tool, especially if it is easily accessible, well organized, interactive and aesthetically pleasing. A poorly designed UX will negatively impact motivation, student satisfaction, and learning effectiveness.

Motivation has a huge impact on a learner. Designing an e-learning tool that is not overwhelming but still challenges the user is important. Users should feel that their learning is related to real-world



experiences and will be useful in the future. When a learner is motivated to learn, they will use more energy, effort and put in more time to understand the content.

When creating an e-learning tool it is important to pay close attention to how the visuals, text, and audio you include impacts the learning. People learn better when they have clear and concise material, the tool is easy to navigate, and the page/screen flows together.

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