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User Interface Design II
Final Project Proposal

For my final project, I will create a prototype of a informational website that will teach learners how to memorize the alphabet backwards. While most know the English alphabet, I plan on developing a game throughout my project to challenge learners to have a fun experience. In this proposal, I will use the laws and principles learned in User Interface Design 1 to apply an effective solution for people to memorize easier.

Tesler's Law states that every application has an inherent amount of complexity that cannot be removed or hidden. With Tesler's Law in mind, I plan on designing the interface with the course deliverables goals.

Miller's Law states that the number of objects an average person can hold in working memory is about seven, plus or minus two. I will consider this principle by breaking up the alphabet into seven sections in the second learning task, which allows the learners to process each section easier.

Chunking information into smaller groups is a way to deal with intrinsic cognitive load. **Intrinsic cognitive load** is the amount of mental effort demanded of **working memory**, which is the short-term memory that deals with essential content of limiting capacity. To manage intrinsic cognitive load, I will use chunking to group the alphabet letters. Each group of letters will help learners process the information into their long-term memory. **Long-term Memory** can hold unlimited capacity of information and exist for long periods of time.

The Coherence Principle states that learners process material best when extraneous distracting materials are not included. **Extraneous cognitive load** is the difficulty of processing information due to factors that cause distraction from intended instruction. To reduce extraneous cognitive load, I plan on giving clear instruction and keeping simplicity in place.

The Law of Proximity specifies that an item placed near another object is recognized as a group. I plan to take advantage of this by creating a hierarchy to improve visual perception of what is one section.

The Von Restorff Effect predicts that when multiple similar objects are present, the one that differs from the rest is most likely to be remembered. I plan on taking the Von Restorff Effect in consideration by drawing attention to the information in each task and

highlighting or bolding keywords. This helps users follow the instructions and complete the main goal by identifying the key points of the instructions that stand out to the users.

The Zeigarnik Effect takes place when a task has been interrupted or incompleted but may be better remembered than finished tasks due to tension. I plan to take advantage of the Zeigarnik Effect by using this effect as completed vs incomplete levels as a game, for learners to feel achievements.

The Serial Position Effect is a principle that states that learners tend to recall the first and last items better than in the middle. I will take the serial Position Effect into consideration by creating the first and last learning task to show the whole alphabet.

Fitts' Law represents the amount of time it takes a user to reach point A to point B of a target stating distance and size. Taking Fitts' Law into consideration, my prototype of the website will be effective for learners as all information will be above the fold. This being said, learners will not have to scroll or take more time on reaching point A to point B.

Hick's Law states that the time it takes to make a decision is increased with the complexity and number of choices and specifically addresses the time and effort required to make choices. I plan to take Hick's Law into consideration by having fewer choices on the interface to avoid complexity.

Jakob's Law states that users set expectations for sites to work or appear similar to other websites due to the familiarity. I will be applying Jakob's Law by following the same header and navigation on websites. Since my prototype will be responsive, I plan on using a hamburger menu like other websites.

The Multimedia Principle states that learners have a more efficient time processing information with texts and images rather than just text alone. To follow the Multimedia Principle, I will create visual graphics with textural information.

The Signaling Principle states that people learn better when cues highlight the organization of the essential material. I will adhere to this principle in my prototype through the use of bolded headings in each step.

The Spatial Contiguity Principle states learners absorb material more when visual graphics and words are united, rather than each being far apart. I will apply the Spatial Contiguity Principle by joining a pictorial representation with textual content to increase a higher **Germane Cognitive Load**, which is the mental effort put in to deal with non-essential but helpful content.