

The Design Thinking in Language Management using AI

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Abstract:

Learning is an art. Language learning is another art. Human beings possess the natural learning cognitive ability. Whereas, the same is not possible with making the machines (robots) learn languages. The management of how languages can be taught using Artificial Intelligence to the robots is a very complex science. This paper details in simple language how the robots learn the language.

Keywords: Design Thinking, Management, Language, AI, Prototype.

INTRODUCTION:

Learning may often happen in a very classroom filled with people (or an office filled with colleagues), but the reality is, it's personal—especially when it involves learning a brand new language. Unfortunately, it hasn't always been easy for HR and learning and development professionals to make unique, customizable experiences for workers. In the recent times, due to advancements in technology, design thinking has changed how we learn new skills at work—we now have the power to style human-centered applications and programs specifically for individual learners.

DEFINING DESIGN THINKING:

So what exactly is design thinking? It was psychologist Herbert A. Simon, who introduced the concept of “changing existing situations into preferred ones” (p. 111) in his book, *Sciences of the Artificial*. With this, he introduced a more human-centered approach to design—a qualitative, comprehensive concept which will be applied to a range of diverse fields, from medicine to education—but it's evolved even further since technology has started playing such a major role in our lives. In an era of digital transformation in learning and development, when it's only too easy to overlook the importance of human

factors amidst rapid technological change, design thinking offers some way of understanding, assessing and testing user experiences in a very truly empathetic way.

APPLYING DESIGN THINKING IN LEARNING:

Design thinking is divided into five key steps—empathize, define, ideate, prototype and test—each of which might (and should!) be employed by HR and learning and development teams to boost workplace education and language training.

1. EMPATHIZE:

To understand the language learners' goals, the first step in developing language curricula is to know the learners' goals. Does an employee want to brush informed verb conjugations before a conference call? Is an employee curious about speaking a brand new language fluently? Do employees have to learn industry-specific concepts during a certain language? Knowing each employee's needs and motivations will enable you to style a learning program that helps them efficiently achieve personal goals.

2. DEFINE: IDENTIFYING KNOWLEDGE GAPS AND PROBLEMS

If one has got a transparent understanding of the learners' needs and desires, it's time to spot the matter areas. What are the steps they have to require so as to realize their goals and what may well be preventing them from succeeding? A native Japanese speaker, as an example, may find it tougher to be told Spanish than a native Italian speaker because of a lower degree of lexical similarity. Problems should be described in human-centric terms so both learners and L&D professionals can understand and agree on particular pain points. During this stage, one must also determine what success sounds like for every individual. This may help as you start to style a replacement learning path, which leads us to the third step within the design-thinking process.

3. IDEATE: BRAINSTORMING SOLUTIONS AND NEXT STEPS

Now that one just knows what the end-result should be, it's time to work out how, exactly, learners can get there. What should the training content be and the way should or not it's delivered? This can be where resources like AI, machine learning and trainers in virtual classrooms may be indispensable, as they'll suggest custom techniques and tactics that fit the requirements of particular learners. almost like Netflix, which analyzes user activity to suggest films and television shows, AI may be employed in acquisition programs to check behaviour and recommend relevant content/methods that may enable learners accomplish the goals identified in phase one. Of course, this can be additionally to ideas from HR and L&D teams—the more solutions you'll be able to brainstorm, the better.

4. PROTOTYPE: DESIGNING A ACQUISITION ENVIRONMENT

During the prototyping stage, one has got the chance to place their solutions into practice. If one thinks that learners will favour video content over written communication, record a brief tutorial or lecture. Think they'll prefer learning in groups? The aim is to assess whether these new content delivery and teaching methods are achieving the required

results. Prototyping will provide the insights needed to iterate and improve a proposed learning solution prior more structured testing.

5. TEST:

The final step in designing a learning program is testing. like prototyping, this process may be repeated again and again to boost the user experience. Once HR and L&D professionals have a transparent understanding of a language learner's profile (their behaviours and preferences – data as an example coming from a digital language needs analysis system), they'll use this data to brainstorm new solutions and build new prototypes yet again—it's an eternal cycle intended to assist designers and developers create truly customized and effective solutions for learners.

A relevant question arises as to how a robot is taught to learn and comprehend a language?

Neural Networks have made great progress, as robots can now recognize images and voice resembling humans; and that they can understand language accurately.

CAN AI LEARN LANGUAGES?

Since the system is observing its environment, it can learn how people actually speak, not just formal language. How does AI understand language? Natural language understanding (NLU) may be a branch of computer science (AI) that uses computer software to grasp input made within the sort of sentences in text or speech format. NLU directly enables human-computer interaction (HCI). ... NLU uses algorithms to scale back human speech into a structured ontology.

LANGUAGE AND LEARNING FOR ROBOTS:

Robot technology will find wide-scale use only if a robotic device will be given commands and taught new tasks in a very language. Verbal interaction with a robot requires a language semantics, the language scientists propose a natural-model semantics which they then apply to the interpretation of robot commands. Two experimental projects are described which offer natural-language

interfaces to robotic aids for the physically disabled.

When a toddler is learning to talk, nobody bothers explaining the difference between subjects and verbs, or where they fall during a sentence. That is, however, how humans teach computers to grasp language: We annotate sentences to explain the structure and meaning of words, so we use those sentences to coach syntactic and semantic parsers. These parsers help voice-recognition systems like Amazon's Alexa understand language. It is a time-consuming process and one that's especially difficult for fewer common languages.

Mimicking the way a baby learns, the system observes captioned videos and associates the words with recorded actions and objects. It could make it easier to coach parsers, and it could potentially improve human interactions with robots. For instance, a robot equipped with this parser could observe its environment to bolster its understanding of a verbal command -- whether or not the command wasn't clear.

By associating the words with the actions and objects in an exceedingly video, the parser learns how sentences are structured. Therewith training, it can accurately predict the meaning of a sentence without a video. Since captioned videos are easier to supply than annotated sentences, this approach should make it easier to coach parsers. Meanwhile, this approach could even help us better understand the way young children learn to talk.

DESIGN THINKING RESULTS IN BETTER WORK:

With design thinking in learning, companies can provide employees with adaptable and personalized language-learning solutions within the workplace. And within the current market, where language skills can give a considerable competitive advantage (take Japanese e-commerce giant, Rakuten, for example- they required their global workforce be proficient in English within two years or face demotion), HR and L&D professionals can leverage this system to drive both individual and company success. a corporation

can only succeed if its employees succeed, and learning and development programs have a large role to play during this. Applying design thinking to all or any training is essential in ensuring that every team player is supplied with the knowledge that they (and the company) must move forward.

THINKING EDUCATION:

Design thinking describes a person's centered methodology; it begins from deep empathy and understanding of needs and motivation of learners. These are the various phases that help to navigate the event from identifying a design challenge to search out and build an answer. it's deeply a person's approach that relies on learner's ability to be natural, to interpret what learners observe and to develop ideas that are emotionally meaningful.

DESIGN THINKING PARADIGM:

Design thinking may be a method which is customized from the discipline of management studies to education.→ Tests→ Prototype→ Ideate→ Define→it's an approach that nurtures the mindset of learners by creating world experiences and problem solving situations. Design thinking may be a structured framework for identifying challenges from the learners, gathering information and generating potential solutions, refining ideas and testing the solutions. A sort of optimism is needed in education. The look process is what puts design thinking into action. It's a structured approach to get and develop the ideas. There has been a rise within the learning and teaching of design thinking in education divisions. Using one's imagination is that the essential task in design thinking and also a technique of creative action. Design thinking is additionally called as investigative learning, which addresses learners not as receivers of knowledge, but as shapers of data. Design thinking is about believing that learners can make a difference and might give faith in creative abilities within them. There are five stages in design thinking. It directs the teachers to work out the simplest and suitable learning design and modules for learners that match the classroom environment. Both student and teacher can work collaboratively and might approach for a

design for teaching and learning. Design thinking may be a creative art which makes teachers as designers, and it creates a true effective teaching and learning.

CONCLUSION :

The study suggests Design Thinking pedagogy as a technique to be implemented for better machine language learning proficiency of learners using AI. Though design thinking encourages students to frequently evaluate how the activity helps them to realize the understanding, by this they themselves become creative thinkers and engage learners. Thus design thinking encourages developing their creative confidence; it gives the effective ways to interact with humans and robots.

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