

LEVEL 7 ASSESSMENT SPECIFICATION

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Academic honesty / referencing:	Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.		

What is knowledge

Introduction

It is difficult to define a word in our daily life, we may understand the meaning of a word indistinctly, but feel at a loss with deep thinking. As Augustine said: You don't ask me what time is, I feel like I know, but when you ask me, what time is, I'm completely ignorant (Augustine et al, 1997).

I don't want to define what is knowledge in the first place, because I rather not consider the serious problem with prejudice. This can't be the reason I give up avoidance though the ubiquity of prejudice seems unavoidable. As human beings have always refused to let go of themselves and pursue the truth and knowledge obsessively. It is necessary for us to understand more about "things that looks like knowledge".

1.1 What is Knowledge

In Modern Chinese dictionary, Knowledge is the result of the human understanding of the objective world in the process of practice which means the sum of the understanding and experience gained in the practice of transforming the world (Anon, 2002).

There is a classic definition from Plato: Knowledge is justified, true beliefs. Which means a statement which can be called knowledge must meet three conditions, it must be verified, correct, and believed (Brian K Koo, 2015).

The knowledge pursued by the ancients in China, is mainly goodness, no matter it is the benevolence of Confucius, or the righteousness of Mencius. Even the benevolence, righteousness, courtesy, wisdom, and faith all belong to the category of goodness. The ancients pay more attention to how to get along better with people, and how to make all people live in harmony. While the knowledge that the Western world pursues is mainly true, that is, what is the nature of the world. Aristotle said: Plato is dear to me, but dearer still is truth. That means for him, truth is above goodness, he rather pursued truth than goodness. However, in China, goodness may above truth in many ways.

1.2 Undefinable Knowledge

With the development of society, mankind began to start the industrial revolution again and again, the way of communication of information and knowledge in the human world

has also undergone tremendous changes, from ancient manpower, horses, pigeons to later newspapers, telegraphs, radio, and now the smart phone, mobile Internet. Information has gradually shown different forms and characteristics of content with the change of the means of disseminating information. Nowadays, Man has developed a new understanding of the sum of all the human knowledge the word “knowledge” can no longer provide people with the application of “things that looks like knowledge” so more words are coming in succession.

It must be admitted that there is no precise definition of knowledge in academia, and I believe that there will be no definition for a long time. Because the question of "what is knowledge" is closely dependent on context and the recipient of knowledge in that context. The data, information that we usually refer to are also closely related to context like knowledge. these words are often mixed in practice. This also gives us another way to describe the meaning of knowledge, that is, through comparative analysis of data, information, knowledge, to describe rather than accurately define knowledge. Fortunately, in practice, we don't have to struggle with the precise definition of knowledge at the academic level.

2.1 DIKW Pyramid

Where is the Life we have lost in living? Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information (Eliot,1972)? The way people's thinking on this poem gradually formed the DIKW system and triggered a series of people's thinking to explore the relationship between data, information, knowledge, wisdom. By analyzing of DIKW model, we can see that there are links as well as differences between data, Information, knowledge and Wisdom, but first, we need to look at these concepts:

Data is a series of fact of external environments, that include unorganized numbers, words, sounds, images, etc. That means data refers to an abstract representation of the number, attributes, locations, and interrelationships of objective things, which are appropriate for preservation, transmission, and processing in a manual or natural manner (Applehans, Globe&Laugero,1999).

Information = data + time + processing. For example number 9, London, Fahrenheit are all data, after processing, it can be combined into a news that is London's temperature is 9 Fahrenheit, but this information is meaningless to us, unless it is added time, such as today's temperature in London is 9 degrees Fahrenheit.

I have already discussed a lot about knowledge. The definition of knowledge in the Knowledge Economy (OECD, 1996), is compiled by the International Economic Cooperation Organization uses the Western term that has been popular since the 1960s. Which means if you have knowledge, you will know what, know way, know-how and know who, such a definition can be summed up as "knowledge is four W".

When human try to define wisdom, British scientist Turing contributed that if a machine could pass an experiment called the Turing Experiment, that means it has wisdom. The essence of the Turing experiment is that when one cannot tell whether a machine is a machine or a human being without looking at the outside world, the machine is intelligent (TURING, A.M. ,1950). Wisdom is the highest level of knowledge. It is also an important feature of human beings that distinguishes them from other creatures. We often see a person with a lot of knowledge but is called a nerd. You'll also see people who may read very few books but are superior in ability to solve difficult problems. We would think the latter has more wisdom.

In general, the DIKW system is the most basic concept in the field of personal knowledge management. Each layer gives certain qualities to the lower layer. The data layer is the most basic one, which is the ingredients processed by computer. The information layers add content and make the data meaningful by processing it and adding time to it. Knowledge layer adds "how to use". (Yuval Noah Harari, 2016) Knowledge is useless if it cannot change behavior, but once knowledge changes behavior, knowledge itself loses its meaning. Although it sounds negative, but it may be the meaning of knowledge. The wisdom layer adds more judgmental things, such as "when to use" and "which part is useful"

2.2 My View of the DIKW Pyramid

In my opinion, the time when the data, Information, Knowledge, Wisdom appeared are the opposite of the hierarchical relationship of the DIKW system, for human beings,

wisdom is the first to come into being, it is a kind of advanced creative thinking ability based on psychological organs of life, which includes all abilities of perception, memory, understanding, analysis, judgment, reflection and so on. And it is the emergence of wisdom that completely distinguishes man from animals, after that, human beings begin to have civilization. What follows wisdom is knowledge, the difference between wisdom and knowledge is that knowledge is the understanding of a certain part of the world and wisdom is the understanding of the whole world. Knowledge is more likely to change or influence the human's behavior, for example how to solve the problems or how to use tools and machines. In the process of constantly exploring what kind of problems need to be solved, the information is gradually generated. Information has a certain effectiveness, including a certain content and meaning. With the outbreak of the second industrial revolution, the information revolution followed, people get a lot of information from TV programs, newspapers, radios, etc., which enriches people's lives greatly. Although data seems generated very early, the time when people start to be sensitive to the meaning of data is relatively late until it was used as a computer terminology. Information and data are both linked and differentiated with each other. Data is the form and carrier of information, which can be symbols, words, numbers, speech, images, video, etc. Information is the connotation of data; The hierarchy of information is above the data and could interpret data.

In the 21st century today, I would like to talk more about the topic of data, with the continuous development of society and the popularity of computers, people will obtain more data and information by using computers, this can improve the sum of human knowledge and wisdom. The more data humans get, the more information they process, the more knowledge they come up with, and the more wisdom they sublimate. This is a continuous cycle, spiraling development process. The development of digital media provides a better platform and condition for knowledge to be learned and discussed by more people. Although individuals with the pre-understanding of knowledge to discuss issues, is more likely to be able to see only one of the aspects, but the more people from their own point of views to discuss, the more aspects they can see. This not only promotes the individual's understanding of knowledge, but also promotes the development of knowledge itself.

3 The future of the digital era

We need to know that the world does not operate exactly in accordance with the good will of people, the disclosure of information is always happening and seems inevitable. In my opinion, no matter you admit it or not, once a modern person decides to use the network, it is as if he or she is willing to make agreement with God that you are acceptable and willing to take the risk of a data disclosure, even if a data disclosure is a situation that most people don't want to face. Just as people choose a mode of transportation to travel, no matter what kind of vehicle you choose, it means that you are forced to take on the risks that may arise during the process of driving. Although accidents do not always occur while driving, they are so inevitable in hundreds of millions of cars around the world. But as far as I'm concerned, we don't need to worry too much, because we predict the future in order to change the future, all bad thing that people's imagine of the future is that they are meant to avoid the tragedy to become true. In the era of digital development, we have built a virtual brain in the cloud on the Internet through computers that can be used to store our memories. Since then, knowledge and wisdom is transferred from our physiological brain to the cloud brain (Malixi, K. (2016). Have you ever thought about this question? While nearly all the information and knowledge can be found online, is how much knowledge that remains in our minds still important? Or what kind of knowledge is still worth taking our time to learn and remember? What kind of knowledge only needs to be stored in the cloud, and use it or read it when we need?

There is no doubting the answer is positive. Although a lot of knowledge can be found in the cloud, but if they are not in your head, when you are still shouting everything can be searched online, you forget the fact: what if you don't know what kind of knowledge or information you should search for. What does knowledge on the Internet have to do with you?

Media are extensions of the human body. He believed that media or extensions of us senses or physical organs. Photographs extend our eyes, allowing us to see the scenery in the other side of the world, radio extends our ears so that we can get real-time traffic Information: Television extends our ears and eyes, enabling us to experience exotic with our ears and eyes (Kreimer, O. and McLuhan, M.,1969). In my opinion, in the internet era,

mobile phones and computers should not only be a one-way dissemination of information screen, but also our external brain and memory, which can let us cross the barriers of time and space and send information to a single or multiple objects. It is important to mention that in this process, we should be good at using and processing the data and information in the network database. People who are in the information era should be able to use search engines and public information on the Internet actively, could filter effective information, and good at build personal knowledge models, so that they will not be overwhelmed by a flood of invalid information and can live and work better in the future. The gap between people with this ability and those who do not may even be like that between people and gorillas, if you always receive information one-way, and don't actively establish your own knowledge system, don't use disclose information to repeated verification, it is easy to be flooded by the misdirect information black hole. Therefore, no matter what the content of the information is, people needn't have to believe everything they read (nor can't unbelievable about all information, this will also fall into a strong self-doubt).

Conclusion

Although human beings now trying so hard to discover everything about knowledge, I would like to emphasize that the universe is 13.8 billion years old, the solar system was born 4.6 billion years ago, the simplest life on earth is 3.5 billion years old, dinosaurs ruled the earth for almost 200 million years, human who look like people and walk like people may exist for a mere 500,000 years, and written history is only 5,000 years old. If we shorten the history of the universe to one year, then the solar system exists for 4months, dinosaurs ruled the earth for about 5 days, those that look like human live here for 15 minutes, and human civilization only exist for 15 seconds. It is probably futile to try to understand what has happened in a year through the existence of these 15 seconds. That is why Yigong Shi argued (Future Forum, 2016): Dose the world we know objective? He thinks that it is inherently undesirable for humans to use known means to explore the unknown. In my opinion, although the universe is vast and mankind seems nothing, I still believe that we are always willing to develop and evolve our mind to be closer to the truth than we are now.

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Reflection on Previous Research

Before recollecting and reflection my previous research, I would like to mention my learning experience after I graduated from high school to explain my fate of my major. Zeng Zi stated: I will examine myself three times a day. I believe that reflection on my own experience regularly will be helpful for myself.

1. Self-reflection

If you ask me: What kind of person are you like? To be honest, I am not a person with firmly perseverance. I don't have clear life plan and can't understand exactly what I want throughout the rest of my life. By recalling the period of professional study, I found that compare with hedgehog, I was more like the fox that had a lot of ideas, and pursued various goals according to (Berlin, 1956). Though I wanted to become a clothing designer since I began to learn painting, I choose to change my dream major after I visited a graduation exhibition of digital media art. Although I hesitated for several days, clothing design does lack of attraction after that happen. In the last year of college, I prepared the postgraduate qualifying examination as well as finding a job. I even struggle with being a domestic or foreign postgraduate student. While people around me work hard and seems goal oriented, I stay amazing still. Because in my opinion, for most of time, selection does not matter right or wrong, the different is only right or left.

By analyzing past experiences, I consider myself as a person who have different kind of knowledge and strong hands-on ability. In junior high school, I design circuit map for my family apartment, I assemble radios with my father in high school, during university, I ran a store with my schoolmates near the school door. Due to the lack of funds, my 3 partners and I need to do everything by ourselves, including decoration shop, mopping and repair second-hand furniture, purchase of merchandise etc. I think I am experienced and knowledgeable, because I could talk to different people about sports and exercise, health and diet, economy and management, social and psychological, future and high technology cheerfully. After all, I'm curious about all these areas, and browse news about it.

I enjoy the power of positive thought and great passion of life. If I am a seed, I will find the most fertile piece of soil and grow in any case no matter where the Moirai took me.

My doctor's application was also a result of the butterfly effect by chance. During postgraduate period, I took a lot of time and effort in the teaching activities, especially in practice activities. So, I decided to focus on combined digital media with education in my research. Given the context of China's education reform, I simply defined this study as a graduation design to explore teaching activities in the form of digital media. It was precisely during this period that the idea of further study was developed bit by bit in the process of graduation design and production.

2. Design Reflection

I would like to take the design that just ended in June 2021 as an example, this is my latest and graduate research design. It is mainly focus on exploring the combination of virtual simulation technology and practical training courses. To tell you the truth, in the months I've been choosing my research direction, I hesitated for countless days and changed my topic research area for several times. Although my interests are in the developing of future and future design, while my supervisor shows much interests in traditional Chinese culture and China's intangible cultural heritage. Perhaps because we have different ideas, our communication wasn't very well and my research direction is influenced by him. So, I made a decision by myself that in the future, if I had the opportunity to tutor students in homework or graduation design, I would care about the student's ideas as long as their research is reasonable and ethical.

After many times of communicating and my unremitting efforts, I finally succeeded in persuading my supervisor and start doing my ideal research direction. To explore the combination of virtual simulation technology and experimental teaching. Finally, my graduation design title is called the application of situational virtual simulation system in teaching experiments. In the part of practice design, I took the demonstration test of along-side discharge in high voltage experiment as a case study.

Before starting a study, the first key was to discover problems, and I was almost an expert in finding them. For example, When I was on the plane, the man in the front seat adjusted the angle of the chair and I hit my nose, I will think about the solution. When a couple goes to bed at night, one was woken up by the other's snoring, I will think about the solution. The light of safety exit signs in the cinema are too bright or even dazzling

especially when the screen is dark, I will think about the solution. It's not hard for me to find problems, it's hard for me to find more meaningful problems in a whole group of them, or areas that I am interested in, or more importantly, I happened to have the ability to solve.

Then I will talk in detail about my research process, I found although objectively speaking in the whole process of research, I did not deliberately use a certain research method, nor clearly know what I need to do in every step in the early stages of research, I think there are still a lot of merit, and I unknowingly followed some certain research methods. My design process is basically divided into four parts, which can be called problem discovery, current situation research, theoretical innovation and functional implementation, I will divide each stage into different processes, to guide my specific research steps and provide a clearer direction. However, I found I am missing a serious and important part by myself that I will talk about later.

3.1 Problem Discovery

I found that the process of problem finding is natural and inevitable, my father work in college and major in electrical power, and I always stay in his classroom and listen to his' class when I was a child. As an experimental class teacher, he sometimes complained about status quo of power professional training classroom and looking forward to the reform of China's vocational education. After knowing that I had chosen the digital media major, he called his students and we discussed the combination of our majors together, I saw more possibilities in both our major. In my opinion, if you don't engaged in artistic creation, digital media is only a newer form of media compared with traditional media, it has more powerful form of interaction and communication, that need to rely on other professional or knowledge or information to develop and exist. As a pragmatist, I am used to consider practical results as the highest priority. So, it seems to me that the digital media and other forms of media communication of the future, must be rooted in different fields. Fortunately, digital media technology has evolved in every field over the years. That makes the idea of solving of experimental teaching in class is buried in my brain which I want to solved sooner or later.

3.2 Current Situation Research

I combined with SWOT analysis methods in the status of quo study, which means, based on internal and external competitive environment and situation analysis in competitive conditions, analyses the key strengths and weaknesses in external opportunities and threats that will be closely related to the subject investigation. (Fine, L.G. ,2009)

I investigated the following four directions, that is the advantages of virtual reality technology systems, the current situation and shortcomings of traditional experimental class, the desire for reform and transformation of vocational education in China and the policy support of the state and various institutions, the current situation of virtual simulation or virtual reality systems in all walks of life.

The advantages of virtual reality systems are obvious, that can be found by reading information and try them by yourself. I also used many methods research in traditional experimental class: interviews and discussions with electric Power teachers and students (5 institutions from different levels), electrical student questionnaires (about 3000 valid results from 2 institutions), access to the real lectures and observation status quo (observation of student experiments and teachers' curriculum assessment), Learn and operate high voltage experiments by yourself as a beginner, China's expectation of vocational education reform and policy support of the state can be found through the government issued documents and blue book analysis, by talking with school teachers, I found that many schools are also appropriation to exploring the similar projects. At this stage, I carry out two directions of research in the current situation of virtual reality system respectively, that is online and offline, there is an online professional simulation system sharing website in China to provide a platform for various institutions to study. I summarized and analyzed the system of that website. I visited three virtual reality technology companies offline and try several different kinds of training projects to understand the current situation of practice training classes. Most importantly, I learn the specific production process and functional implementation from the experts of the company which is very helpful with my next research. What are the shortcomings of my research process? Am I rational enough in considering the research process? For example, can the colleges and companies I choose represent the true level of teaching and company development? The 5 universities I choose are geographically located in

Henan Province in China, one of which is an outstanding and is considered as the state focuses on training college, two of them are general comprehensive colleges, the rest are vocational colleges. Although the database may not large enough, it is sufficient to represent the basic status quo of China's electric power experimental course to a certain extent as Henan Province's education level is in the middle stage of the country. But the three companies' visits were relatively random, one of which is a partner of one of my interview schools and is working on a teaching system; one is recommended by my tutor, and the company work with art and design students at my college for a long time; the last one is a VR technology company that I found in my city through the Internet. I have no idea whether they can represent the basic status quo of the newest education system. If they can't, then what kind of company or institution should I research?

3.3 theoretical innovation

In the stage of theoretical innovation, I pay more attention to the reading and thinking of theoretical materials, the discovery of innovation requires me to read a lot of cutting-edge literature and analysis the psychology of Chinese students and teachers. I try to find the main vocational training assessment methods, training objectives, training real results, the definition and standard of practical training courses in the country, etc. to explore all directions and possibly by gathering as much information as possible. Finally, I think of combine the narrative approach of the game's story to make the virtual system more contextual, in order to attract students. I found that the story of the game and the step of the experiment can be well combined, the purpose of winning the game and the purpose of successful experiment can also be combined with each other.

3.4 functional implementation

As my personal capacity was very limited, I contacted a virtual reality technology company and a high voltage laboratory course teacher to participate in all procedures of the production during the design implementation. The experts from the company providing me with technical support and teacher providing me with professional support. My main task is to combine the strengths of both parties and optimized the specialist

and complex knowledge of electricity with simulation systems. The implementation of my entire design is as follows.

1. Simulation experiment script design (combined with experiment steps and optimized into a more rationalism task model)
2. Experimental scene model making (by considering user psychology in virtual systems, user path optimization in the virtual space, producing 3D scene models and animations)
3. UI design of the system (establishing system style and interaction flow based on user psychology)
4. Implementation of system (with the help of consultants from the technology company to solve problems with the programming of the system, and teacher will make sure the virtual experiment steps is accuracy and professional enough)

4. Summary

Through my recollection and reflection on previous projects, I have come to the following points.

1. I always consider myself as a jumpy and confusing thinker, but I found myself thinking relatively clearly and logically than I expected through the summary, so maybe I underestimated myself, as the thinking process and research results are slightly better than I thought.
2. I still found a big problem in the whole process of the project, that is the absence of testing and feedback. Although I eventually found some electric power students, teachers, electricity practitioners for testing, however, I only made a few adjustments based on their advice. Although the objective factor was that the deadline is coming, and I had been confirmed by my tutor. But the subjective reasons is I didn't realize the importance of testing and feedback and therefore did not even schedule time for system optimization. I must admit that the important way of making the system rational is to keep developing, to launch more effective versions, to not be satisfied with the status quo and to keep optimizing.
3. Throughout the various stages of design, one should have a sense of constant reflection and rational thought, to some extent will be able to reduce research bias and gain more inspiration and insight.

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