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Chinese Language Education in the Era of Artificial Intelligence; Innovation Development, Pedagogy & the Smart Classroom

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Abstract
This research work has a particular emphasis that deals with innovation and development of international Chinese language teaching and learning within the classroom in the new era, especially with an emphasis on AI (artificial intelligence) as well as an emphasis on the creation of smart classrooms. This paper focuses on utilizing creative pedagogy methodologies in international Chinese language classrooms especially in smart classrooms. With the use of various qualitative approaches including the utilization of media, interpreting advertisements movies, newspapers, and the utilizing of techniques such as sand blots that may be engaging in the classroom with an objective of developing pupils' second language absorbing ability. Furthermore this research paper highlights the various teaching methodologies that should be adapted and expanded upon in the classroom fittingly by understanding the absorbing capacity of pupils and their learning interest in the theatre of pedagogy.

Keywords: Chinese Language, Innovation, Pedagogy, Development, Education, New Era Smart Classroom

Introduction

Towards the end of the 20th century a new major player has gradually begun to reshape the global status quo. The shift can be seen on a multitude of fronts, which include economic, social, political, academic etc… Advancements in technology have proven to be a vital catalyst in this paradigm shift. With the rise of China's influence worldwide language has proven to be a major soft power tool that has allowed Chinese soft power to further spread worldwide.

In this new era Chinese language has become an important language with more than 1.3 billion speakers and counting. This has allowed for the spread of information contributing to knowledge and the transfer of information worldwide. Chinese language teachers are creating more and more innovative methods to teach the language in and out of the classroom effectively. To validate this, one only has to look at the rapid growth of Chinese language classrooms and institutes such as the Confucius Institute and its worldwide approach of teaching Chinese language and culture to peoples of various societies and backgrounds around the world.

The Confucius Institutes now celebrate a multiplicity and an open door policy for pupils ranging from kindergarten to graduate school students despite their culture, socio-economic status and or ability. With alterations in the construct of modern smart classrooms an expanded curriculum has been likewise adopted to meet the numerous needs of students'. With the aim being for students to grasp a deeper understanding of Chinese language and culture these Institutes have endeavored to assist their students in and outside of the classroom to acquire and develop an appropriate language learning process. With this in mind Chinese language teachers have established unique ways to incorporate different learning tools keeping in mind the effective teaching methods that are already in use.

Acquiring individuals with knowledge of Chinese language and culture is becoming an ever more important factor for many nations' development as well as for the development of individuals. To improve the communicative skills of the learners, innovative teaching methodologies should be used or introduced to make the learning process interesting. Creativity is a prime factor for any student to develop her or his lateral thinking in terms of learning a language. A Chinese learning smart classroom is essential in any language teaching institute and should be created using interesting teaching methodologies to mesmerize and encourage students to learn the second language explicitly and implicitly.

This research paper focuses on the use of creative teaching methodologies in the second language smart classroom. Using modern Chinese language programs and incorporating artificial intelligence technologies as well as innovative tasks the learning competency of language learners may increasingly be developed. It is pointed out that there are no short cuts to educational improvement. Hence it is important to use relevant and required teaching methods by evaluating students' level of understanding in learning Chinese as a second language.

Improvement of Qualities in Teaching

Smart classroom teachers are progressively possessing some of the relevant technical qualities while teaching their students. The teacher's personality, attitude, technological knowledge in handling teaching materials and knack in answering students' questions, as well as the ability to teach by using techniques instill interest among students. Traditional methods cannot be written off from the smart classroom at any point in time, but including some of the interesting and innovating teaching methodologies like the incorporation of artificial intelligence Chinese learning programs will make students to be focused on the learning process. Cognitive development teachings can be done in the class through Sandblot, newspaper, advertisement tasks etc., to develop students' problem solving ability and lateral thinking skills, otherwise students' individuality and their learning capacity might not be evaluated fully by the facilitator. It has been further emphasized that the practice of using tasks would go beyond behavior and includes various engaging activities that emphasize form-meaning and mappings for day-to-day communication.

Innovative Methodologies in Teaching Chinese Language

Teaching materials, teaching techniques should be updated to the interest of the second language learners. Innovative methodologies like the use of games, role-play, reading newspapers, watching TV, referring to dictionary etc., are used as tools in the smart classroom. The use of these techniques should be used in addition to the computer programs that students use to better their Chinese language skills in the smart classroom. Skill based learning, knowledge based learning are essential for the growth and development of students especially when incorporated with modern day cutting edge technology. The theory of second language acquisition has influenced the development of integrated institutions in the smart classrooms at all levels. There has been evidence that suggests that the second language is the most successfully acquired when the conditions are similar to those present in first language acquisition: (1) That is, when the focus of instruction is on meaning rather than on form; when language input is at or just above the proficiency of the learner; (2) when there is sufficient opportunity to engage in meaningful use of that language in a relatively anxiety-free environment. This suggests that the focus of learning a second language should improve employability skills of the learners.

Acquiring Chinese

Language through Teaching and Technology Learning Chinese is always a difficult and in many cases a tedious process to most of the second language learners. Innovative ideas, interesting teaching materials, practicing and drilling of learners in learning the second language should be done through what is considered as infotaining ways or informative entertainment. Students, especially from rural backgrounds, find it very difficult to read, write, and speak a language even though they studied the language as a second language from class one to class twelve. These students do not have enough exposure to develop or correct their language extensively. To such students and teachers' interaction is pivotal and teachers should use innovative teaching to make their students develop the second language learning process gradually. Language can be learnt only through practice. Practical knowledge of learning a language is an experimental approach for second language learners. Such learners should experiment their knowledge by communicating with others confidently. Their errors can be rectified or pruned through this practice. Teachers should develop students' confidence, independence, interest, and lead them to realize that their first language knowledge repository would be helpful to learn the second language confidently.

As Stevick (1980) pointed out those learners could 'take their knowledge of the first few words in the new language and figure out additional words by using that knowledge' (p.42). Learners' self-learning approach and understanding the learning ability in the process of learning a second language should be given primary importance in the classroom. Teachers should discover activities and tasks that are filled with edutainment. Introducing various tasks would help learners to understand the use of language in real-life situations by engaging them in doing many activities in the classroom. In the present age, students' acquisition of a language is measured in terms of their ability to communicate in the language rather than examining their grammatical skills. Many educational institutions have taken an impactful step by including a network of computers and related software, cassette players, and slide projectors as a part of the Chinese learning process. Based on the global trend the Chinese language will play an important role in every student's life directly or indirectly. Though, chalk and board method is unbeatable, using technological tools in the process of learning Chinese benefits learners immensely. Not only is Chinese considered as a subject by learners, but it is considered as a language by students, thanks to globalization.

Language, Internet & AI:

An emphasis, which formerly was on technology, has shifted to be on people and Language. And as the Internet comes increasingly to be viewed from a social perspective, the role of language becomes central. Indeed, notwithstanding the remarkable technological achievements in AI and the visual panache of screen presentations, what is immediately obvious when engaging in any of the Internet's functions is its linguistic character. If the Internet is a revolution, therefore, it is likely to be a linguistic revolution. In this increasingly competitive world, most language institutions have set up language labs and smart classrooms for their students to better learn the acquired second language. At present a multimedia lab is quite attractive in instilling the interest of pupils in learning the language. The difference between a normal language lab and a smart classroom is that the former provides audio equipment through which learners can listen to the tapes, record their voices, and communicate with the teacher, while the latter operates as a multifunction tool through which students can either listen to the tapes, watch videos and different TV channels, use computer language programs that incorporate AI in the programs and teaching techniques as well as access to internet facilitating communication with one another while the teacher can operate technical equipment to a group or a pair of students, and hold discussions within the class. It is expressed that in this technological era learners require good rapport with other learners through chatting, task performance, and virtual collaborative conversational interaction and this can only be achieved through the incorporation of a smart classroom and relevant AI language programs.

Semantic Parser: A Child's Language-Acquisition Process

Children learn language by observing their environment, listening to the people around them, and connecting the dots between what they see and hear. Among other things, this helps children establish their language word order, such as where subjects and verbs or other key elements in different languages fall in a sentence during the learning

process of a second language. In computing, learning language is the task of syntactic and semantic parsers. These systems are trained on sentences annotated by humans that describe the structure and meaning behind words. Parsers are becoming increasingly important for web searches, natural-language database querying, and voice-recognition systems such as Alexa and Siri that a classroom teacher can use to help students in learning the Chinese language (Matheson, 2018).

Matheson (2018) further explains that though gathering the annotation data can be time-consuming and difficult for less common languages; additionally, humans don't always agree on the annotations, and the annotations themselves may not accurately reflect how people naturally speak. In a paper that was presented at the Empirical Methods in Natural Language Processing Conference, Massachusetts Institute of Technology (MIT) researchers describe a parser that learns through observation to more closely mimic a child's language-acquisition process, which could greatly extend the parser's capabilities. To learn the structure of language, the parser observes captioned videos, with no other information, and associates the words with recorded objects and actions. Given a new sentence, the parser can then use what it's learned about the structure of the language to accurately predict a sentence's meaning, without the video.

This supervised approach—meaning it requires limited training data — mimics how children can observe the world around them and learn language, without anyone providing direct context. The approach could expand the types of data and reduce the effort needed for training parsers, according to the researchers. This could also be adopted by many classroom teachers for second language learners. Some directly annotated sentences, for instance, could be combined with many captioned videos, which are easier to come by, to improve performance. The parser can also help teachers of second language to better understand how young children learn language. More so, a child has access to redundant, complementary information from different modalities, including hearing parents and siblings talk about the world, as well as tactile information and visual information, [which help him or her] to understand the world. With this, one can be sure if adopted for every second language learner, will make it much easier to speak the second language being learned.

The Role of Artificial Intelligence (AI) In Second Language Acquisition

On the other hand, Campbell-Howes (2019) explained that artificial intelligence (AI) is an important paradigm that is having a powerful impact on many fields, including education. First of all, AI is a fascinating topic, and one which can provide rich discussion in conversational classes when it comes to students and teachers. There are fantastic resources online for explaining what AI really is if you want to discuss the technical implementation of tools like machine learning. Though there is a lot of confusion and misunderstanding around the term, but there are some concrete examples of how AI is being used to improve the language learning experience, and this is why it is something good for language teachers to embrace rather than fear. Most writers portrayed AI as an obligatory picture of a humanoid robot, setting up the idea that artificial intelligence is all about recreating the human brain inside a machine. However, the truth is a lot more mundane. Most artificial intelligence applications have nothing to do with robots or replicating human cognition; instead they are focused on using the vast computational capabilities of modern computers to solve single, simple problems in a much more effective way than a human can. Although human brains are capable of doing many very complicated things in much more sophisticated ways than computers, they are limited by factors such as the size of our working memory or the speed at which we can make calculations. For some tasks, especially ones involving many or complex calculations, computers are much more effective and this is where AI steps into play (Campbell-Howes, 2019). Artificial intelligence crosses many different domains, including fields such as computer vision and predictive analytics. In fact, a more helpful term for thinking about what artificial intelligence can do is machine learning. Machine learning is when humans (generally data scientists) use large data sets to train computers to make models which predict the outcome of some future event. This could be the likelihood of it being safe for a self-driving car to make a left turn, or – to use a language learning example – the likelihood that a student will know how to translate the word 'chien' into English.

Most importantly, the future of AI is about saving both learners and teachers time to focus on developing skills such as conversational fluency or confidence in communicating across cultures. The strength of AI is in creating

a personalized learning experience that allows the student to work on their personal areas of weakness and benefit from tailored feedback, rather than following along to a one-size-fits-all model of learning. If students are using AI-powered language learning tools in their own time, their classroom time can be optimized for focusing on the skills and capabilities that no machine can (yet!) deliver for them.

Glossika and The Rise of AI-Guided Language Study

Artificial intelligence (AI) has found its way into every aspect of our daily lives. From the driving of cars to the sweeping of floors, AI has left science fiction long ago to become science reality. And so it should come to no surprise that AI can help us better learn languages. AI can help one achieve basic proficiency in a new language in a few months with only 20 minutes per day of studying, all guided by AI. Glossika CEO Michael Campbell recommends that language learners focus on fluency first and on vocabulary second. Language learners require time (often a lifetime) to expand vocabulary; however building basic "fluency," which deals with how capable language users are in manipulating sentence structures, takes far less time than building a robust collection of vocabulary.

Unlike traditional approaches which utilize lessons and weekly plans, Glossika attempts to tailor learning material to one's specific level and needs. Users select the topics that matter most to them and work at a comfortable pace on their desktops or smartphones. Users of flashcard apps like Anki will recognize the use of spaced repetition, in which items more difficult to the learner are repeated more often while those that are learned successfully are saved for later review. Glossika further teaches by using sound patterns to mimic the way children learn a language: by listening. Frequent exposure is utilized to focus on fluency improvement. Eschewing the grammar books makes this an ideal method for those tired of traditional learning techniques; however it may prove a bit confusing to total beginners who like to start by learning all the rules.

Ultimately it seems that Glossika offers a unique learning method that's guided by AI. AI only helps the user focus in on the most ideal lessons, ultimately saving precious learning time, but not on instruction itself. Of course, other applications are utilising such techniques as well. As time progresses, AI can help language learners save time when studying on their own, however having a human language partner or a good teacher simply can't be beaten. Until AI reaches the capabilities of conversing intelligently with humans, it will be hard to replicate the unpredictability of real human interaction, which is ultimately the core purpose of language learning. What is certain is that such tools, especially when used in conjunction with traditional learning methods, can vastly help Chinese language learners become well-rounded in a language. Students don't need to choose one method over another, but rather combine their most preferred method with the numerous options out there to create the best comprehensive language program for themselves.

How Artificial Intelligence Affects Higher Education

Many researchers pointed out the effects of artificial intelligence on higher education, so it was confirmed by Ma and Keng (2018) that artificial intelligence would affect higher education in two main areas: that is 1- Curricula Artificial intelligence will have a major impact on the curricula in higher education, as the power of artificial intelligence contributes to providing elements of speed and accuracy, and this requires providing training opportunities for students to enhance their skills, and technical disciplines and liberal humanities may become more popular because these areas are less vulnerable. And 2- Enrollment: We may see a sharp drop in university enrollment due to the high cost, as higher education is not affordable for many because of that cost. Among the most important effects that higher education will experience according to Fernández and Aburto is the replacement of the traditional language with the digital language. Digital language is needed for students to deal with applications of artificial intelligence. Examples for the Application of AI in the Classroom Today include: *Tutoring*: by the time AI systems are applied in academic lecture halls, classrooms, laboratories and interactive study places in colleges, institutes or other educational institutions, there will be no need for the teacher to repeat the explanation of a certain topic or a part of it and spend more time with students to understand that part; the student can now achieve that easily with AI without a lack of convenience or waste of time.

Using AI In Students' Grading

In traditional Pedagogies instructors spend a lot of time wasted on the grading process which is based on traditional exams, computer tests and others. With AI, the situation is quite different: instructors can quit grading to spend more time with students. Furthermore instructors can focus on enhancing areas in which students have weaknesses whether it be oral pronunciation or instructional.

AI has been revolutionary in improving administrative tasks in that universities and most of educational organizations around the world by virtue of AI applications have made the Chinese language classroom a possibility: AI systems supplied with instant translations and subtitles will empower a new generation of students to go beyond all borders. AI will eliminate the classrooms' walls to allow students to share knowledge and participate in different learning global environments (Boulay, 2016).

There are many previously written literature that discusses the topic of artificial intelligence and its impact on higher education, and among these studies, The Fernández, and Aburto study reviewed the impact of artificial intelligence on higher education and the study concluded that within the coming period we will witness the transition from the traditional roles of universities to new ones such as replacing the traditional language with the digital language, and the development of teaching methods in a new way which it requires enhancing students' skills to adapt to social intelligence applications. The Ma and, Keng (2018) study revealed the impact of artificial intelligence on higher education, as these effects were represented by a low dependence on human resources in education, and that new skill sets will be needed. Higher education needs the challenge of preparing students for the AI revolution and providing students with the skill sets necessary to compete in the era of artificial intelligence.

The Khare et al. (2018) study attempted to reveal the potential of artificial intelligence to positively influence a student's success, the study reviewed the form of education when applying artificial intelligence as students will rely more on administrative staff while faculty members at the Institute of Higher Education oversee management systems learning. The study concluded that the applications of artificial intelligence would increase the ability of educational institutions to perform their primary task of teaching, learning and research. The Gamoura et al. (2018) study tried to prove that the technical reality as well as the moral and technological barriers prevent and suggest the idea of absolute machine freedom in decision-making in the near future, including fears currently mounting in the media and academia, despite the characteristics of AI including automatic actions, self-development and automatic machine learning.

Given the foundations of artificial intelligence and its characteristics and some of its living models to shed light on the reality of its developments and aspirations between what it actually reached and what it hopes to reach. With AI being so effective in the impacting of knowledge through amazing skills, if adopted in the Chinese language learning programs AI will have a great learning impact in spreading the Chinese language.

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