

Generative AI-empowered Experiential Teaching Paths for Morality and Rule of Law in Junior High School

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Abstract: At present, generative AI technology is in rapid iteration and has exerted a broad and profound impact on the education industry. Experiential teaching emphasizes learners' experience and reflection in the learning process, so as to realize the internalization of knowledge, which is highly consistent with the core quality cultivation advocated by the new curriculum standard. However, the traditional experiential teaching is faced with such practical difficulties as static situation creation, superficial experience process, and formalization of reflection. Generative AI makes it possible to solve this dilemma by virtue of its capabilities of multimodal content generation, intelligent dialogue and interaction, and personalized adaptation. Drawing on Kolb's experiential learning cycle and taking the "VR Moot Court" course as an analytical case, this paper discusses four paths of generative AI enabled junior high school *Morality and Rule of Law* experiential teaching: situational infiltration, interactive infiltration, reflective infiltration and migration verification. These four paths together form a complete learning closed loop from experience to internalization, so that students can obtain embodied experience, deepen cognitive reflection in human-machine dialogue, and complete the meaning construction in the visual thinking. This study provides practical reference for the innovation of *Morality and Rule of Law* teaching in junior high school under the background of digital transformation of education.

Keywords: Generative AI, *Morality and Rule of Law* in Junior High School, Experiential Teaching, Kolb's Experiential Learning Cycle.

1. Introduction

With the rapid development of big data, Internet of things, generative artificial intelligence and other technologies, digitalization has had a profound impact on the development of social politics, economy, culture and other fields. In the field of education, countries regard digital transformation of education as an important part of national digital strategy. *Education informatization 2.0 action plan* proposes to "deeply integrate information technology and intelligent technology into the whole process of education, promote the improvement of teaching, optimize management and improve performance". Intelligent and digital education has become an irreversible trend.

The curriculum standard for morality and the rule of law in Compulsory Education (2022 Edition)^[1] emphasizes that it is necessary to "closely link social life and students' reality, and enhance the timeliness, vividness and novelty of teaching with fresh and contemporary content". The experiential teaching concept with the characteristics of initiative, double subjectivity and situational fit this requirement. Experiential teaching is not a new concept. Its theoretical basis can be traced back to Dewey's "learning by doing" concept and Kolb's experiential learning cycle theory. The reason why experiential learning is effective is that it conforms to the brain's natural learning law of "experience before explanation". It emphasizes that learners experience specific situations to obtain direct experience, while internalizing knowledge and value identity in reflection. However, the traditional experiential teaching of *morality and the rule of law* in junior high schools faces three dilemmas: first, the creation of situations is static. Influenced by teaching space and resources, most teachers still create teaching situations with pictures and oral explanations in the classroom. Students sometimes find it difficult to integrate into the static situation,

resulting in poor teaching effect. Second, the process of experience is superficial. Many times, students are just "viewers of the situation" rather than "constructors of meaning", which leads to the fact that they do not get a true understanding of knowledge in the process of experience, and only stay in sensory stimulation. Third, the reflection link is formalized. Many teaching links will set up group discussions to report the reflection results, but most of the time it is a mere formality. Finally, teachers summarize the standard answers, which does not reflect the value of reflection.

The emergence of generative AI provides new possibilities to solve the above difficulties. This technology is a technology based on deep learning model. It can respond to the complex and diverse natural language input of human beings, and independently generate multimodal content, including text, pictures, videos, etc. Generative AI technology is currently in rapid iteration. Since 2022, generative AI represented by ChatGPT, Sora, etc. has come out, marking that AI technology has once again achieved leapfrog development. Practice shows that generative AI is an important supporting force of experiential classroom. It can create immersive situations, generate interactive roles, and help students break through the thinking blind spot, which is consistent with the internal logic of experiential teaching experience, reflection, abstraction, and application. Therefore, integrating generative AI into the experiential teaching of morality and rule of law in junior high school can not only provide a new perspective and method for teaching activities, but also meet the urgent needs of digitization and modernization of education. Based on this, this study will take Kolb experiential learning cycle as the theoretical perspective and "VR moot court" as the analysis object to explore the practical path of generative AI enabled junior high school *Morality and Rule of Law* experiential teaching.

2. The Practical Dilemma of Traditional Junior High School *Morality and Rule of Law* Experiential Teaching

Although educators widely use experiential teaching, many people design it through trial and error, and the effect is uneven. At present, in the practical application of *moral and legal* classroom in junior high school, experiential teaching still faces the following three dilemmas.

2.1. Static Situation Creation

Situational learning theory believes that learning is situational, and knowledge is inseparable from the specific situation, activities and culture that produce it. Knowledge is not abstract symbols. Students should acquire and apply it in real or simulated practical activities. However, due to the limitations of teaching space and resources, most teachers still create teaching situations by oral narration, picture display or video playback.^[2] This kind of static situation creation is essentially a fragmented tailoring of students' life world, which is difficult to make students have a real role "sense of substitution". When the situation only stays at the "visible" level, students' subjective initiative is difficult to be effectively activated, which affects the follow-up two-way interaction between teachers and students.

2.2. Superficial Experience Process

The core of experiential teaching lies in learners' experience and meaning construction, but in the actual classroom, many students act as "bystanders of the situation" and do not really participate in the construction of the situation. Due to the limited life experience and low cognitive level, students' experience process often stays at the level of sensory stimulation, and it is difficult to understand the essence of knowledge. For example, in the rule of law education, teachers play the trial process for students, and students can get a preliminary understanding of the trial procedure by watching the video. However, it is difficult to truly understand the value of procedural justice and the temperature of law because they are not involved in it. This superficial experience causes students to experience the situation but fail to realize the meaning.

2.3. Formalization of Reflection Phase

The value of experiential learning lies in the leap from perceptual cognition to rational cognition through reflection. However, at present, the reflection link in the classroom is mostly a mere formality. The group discussion organized by teachers often ends hastily due to time constraints. In the reporting link, teachers summarize the "standard answers". However, the conclusions drawn by students in reflection often have thinking blind spots due to the limitation of cognitive development level, and the perspective is single, which can not achieve deep learning. More importantly, the traditional classroom lacks effective reflection support, which makes it difficult for students to transform scattered and vague perception into a clear concept system, leading to the fracture between experience and cognition.

3. Kolb's Experiential Learning Cycle and its Internal Fit with Generative AI

3.1. The Four Stages of Kolb's Experiential Learning Cycle

The theoretical foundation of experiential teaching is the experiential learning cycle proposed by American educator David Kolb in 1984. He describes experiential learning as a four stage cycle: concrete experience, observation and reflection, the formation of abstract concepts, and testing in new situations. David Kolb believes that the learning cycle can start from any one of the four links. However, it is generally believed that the learning process begins with a specific experience. Individuals take a specific action and then observe the effect of the action in the situation. The second step is to understand the performance of these effects in a specific situation, so that when the same action is taken again in the same situation, the results can be predicted. In this model, the third step is to understand the general principles followed by the specific instance. The fourth step is to put the principle into practice through action within the scope of application, so as to test the meaning of the concept. These steps are sometimes described as a circular process, but in fact, if learning really takes place, this process should be regarded as a spiral rise.

In short, the first step in the whole process is specific experience, which means that students obtain direct experience in real or simulated situations and produce rational knowledge. It is not only the starting point of learning, but also the basis of observation and reflection, emphasizing students' personal experience. Then, it carries out reflective observation, that is, students examine their own experience from multiple angles and observe the significance of reflective experience. Then the experience is abstractly summarized. Students form concepts on the basis of reflection, and promote perceptual cognition to rational cognition. At this stage, meaning construction is emphasized. The last step is active verification. Students apply the concepts formed by abstract generalization to the new situation to test, correct and deepen their understanding. In this stage, transfer application is emphasized.

3.2. Technical Characteristics of Generative Artificial Intelligence

Generative artificial intelligence is a technology based on artificial intelligence techniques such as generating countermeasure networks and large-scale pre training models, which can generate relevant content with appropriate generalization ability through the learning and identification of existing data. Its core idea is to use artificial intelligence algorithm to generate content with certain creativity and quality, that is, through the learning of training model and a large amount of data, input conditions or guidance, and use AIGC technology to generate related content. Generative AI has the following capabilities: 1. multimodal content generation: it can automatically generate text, images, video and audio according to instructions, and visualize abstract concepts; 2. intelligent dialogue and interaction: it can simulate a specific role to have a human-machine dialogue with students; 3. personalized adaptation: personalized content can be generated according to students' needs; 4. process data tracking: it can record students' interaction

trajectory and generate visual feedback.[3]

3.3. The Logical Alignment Between Generative AI and Experiential Learning

Generative AI technology can accurately respond to the difficulties faced by traditional experiential teaching and realize the whole process empowerment. In the specific experience stage, the static traditional teaching situation leads to students' weak sense of substitution, while generative AI can create immersive situations through VR, multimodal generation and other technologies, so that students can get embodied experience in virtual situations; In the stage of reflection and observation, students in traditional teaching tend to have a single perspective and superficial thinking. Generative AI can conduct human-machine dialogue with students through intelligent dialogue system, generate questioning and multiple views, build a reflection support for students, and broaden their thinking; In the stage of abstract generalization, the concept abstraction in traditional teaching makes it difficult for students to internalize. With the help of thinking visualization technology, generative AI transforms students' perceptual expression into knowledge map and promotes the construction of meaning; In the active verification stage, traditional teaching faces the problems of difficult transfer and disconnection between knowledge and practice. Generative AI can generate new situational tasks according to the learning situation, and support students to deepen their understanding in application and testing.

It can be seen that generative AI can provide accurate support for each stage of experiential teaching, and transform the experiential learning cycle from a theoretical framework to an operable practice path.

4. Generative AI Empowers the Path of Junior High school *Morality and Rule of Law* Experiential Teaching

4.1. Situational Infiltration

The first stage of experiential learning cycle is "concrete experience", that is, to let students obtain direct experience in the situation. At this stage, it is very important to create a real or virtual vivid situation, which is the key to the successful implementation of experiential teaching. In traditional teaching, teachers usually create situations by oral description or picture display. Static situations make it difficult for students to have a "sense of substitution". VR technology enabled by generative AI can transform abstract concepts into perceptible and interactive immersion fields. In highly simulated and interactive teaching scenes, students seem to be "immersive". This embodied experience can effectively stimulate students' emotional resonance and value thinking, and then promote students to change from passive acceptance of knowledge to active identification of content, and finally realize the deep internalization and conscious practice of values.[4]

When using AI to create immersive situations, the principle of "accurate diagnosis" and "virtual reality integration" should be followed. Before class, teachers can analyze students' learning situation through the intelligent platform, comprehensively grasp students' learning style, interest and existing knowledge base, understand their cognitive starting point of related concepts, and design differentiated situational difficulties for students at different levels. At the same time,

the virtual scene generated by AI can not replace the real experience, but should be the guide and expansion of the real experience, so as to ensure that the virtual experience has a real value anchor and avoid technology dominating. In addition, after the virtual experience, teachers need to organize students to share similar cases in real life, and transform the emotional resonance in the virtual situation into the observation and thinking of real life, so as to realize the deep integration of virtual and real life.

For instance, in teaching the unit 'Understanding Rights and Obligations' in the second volume of *morality and rule of law* edited by the Ministry of education as an example, teachers organize students to experience "VR mock court". Before the whole activity, the teacher can use AI to analyze the learning situation, understand the cognitive starting point of students' concepts such as "juvenile protection" and "judicial procedure", and design the complexity and plot trend of VR situation based on this, so that the experience task can accurately match the students' "zone of proximal development". For example, legal provisions can be added for students with weak foundation, and open court debate scenarios can be set for students with spare capacity. In the courtroom scene constructed by VR, students play the roles of judge, prosecutor, defender, etc. in this process, AI generates courtroom dialogue content in real time, and adjusts the plot direction according to students' role selection and behavior. For example, when the defender proposed that "my client is a minor and should be given a lighter punishment", the AI system immediately called out the relevant regulations of the *law on the protection of minors* to generate a response from the judge. Students have cognitive conflict and emotional resonance in the immersive environment. This embodied experience is the starting point of the experiential learning cycle. The emergence of AI makes "virtual presence" possible.

4.2. Interactive Infiltration

The second stage of experiential learning cycle is reflective observation, that is, to let students examine their own experience from multiple perspectives, observe and reflect on the significance of experience. After the VR experience, students' experience only stays at the perceptual level, and they need guidance to enter the reflection. However, due to the cognitive development level, life experience and other factors, students' conclusions often have blind spots in thinking and a single perspective. The human-machine dialogue field constructed by AI provides students with a reflection "support" (such as XuXiake agent). It can help students complete the transformation from "experiencer" to "observer" through personalized questioning and multi-point of view generation, and guide students to reflect deeply.[5]

The key of human-machine dialogue is enlightening. Teachers should guide students to regard AI as a "Socratic mentor" and constantly deepen their thinking through multiple rounds of dialogue with AI. At the same time, it should be noted that the multiple viewpoints generated by AI need to be critically examined by students to avoid blindly accepting technical authority. Teachers can design a "man-machine debate" session to allow students to debate with AI around controversial issues, record AI views, analyze their argument logic, and share and discuss in groups. Through this mode, students can not only broaden their thinking perspective, but also deepen their understanding of legal rules in comparison. Teachers are responsible for value guidance,

helping students identify the limitations of AI generated content, and ensuring that the reflection process always revolves around the educational goal. After the mock court experience, students have a one-on-one dialogue with "AI legal experts" on the spot, using artificial intelligence to help clarify confusion. At this stage, the AI system records students' performance in court in real time and generates personalized questioning. The student who plays the defender is asked: "what is the most impressive court rule when you defend the client? Why is this rule important?" the student who plays the judge is asked: "when both sides state their views, what is your basis for making judgment? What role does the law play here?" the student who plays the observer is asked: "what do you think the presence of law makes participants feel during the whole court trial? What would the scene be like without law?" A student who plays an audience citizen in the moot court replied, "I see that the judge has to listen to both sides to decide. I feel that the law is quite fair." AI then generated and asked: "where do you think fairness is reflected? If you encounter similar things in life, will you think of using legal tools to deal with them? For example, when you have conflicts with your classmates?" Under the personalized questioning of AI system, students began to turn from simple role experience to rational thinking of legal rules, and entered the stage of reflection and observation.

4.3. Introspective Infiltration

The third step in the experience cycle is abstract generalization. At this stage, students need to upgrade their perceptual experience obtained from the stage of reflection and observation to rational cognition. But in traditional teaching, students' reflection is often scattered and vague, and it is difficult to form a clear concept. AI visualization technology can transform students' perceptual expression into a complete logical chain, help students clarify their thinking path and promote the construction of meaning.

The value of AI assisted thinking visualization lies in seeing thinking, not replacing thinking. After using AI to generate reasoning chain, teachers should organize students to compare the logic of AI with their own logic, and deepen the understanding of the thinking process in the comparison. At the same time, teachers can use the "performance evaluation 125 mode" for reference, and use the thinking map generated by AI as a tool for students' reflection rather than a conclusion through five steps: designing the whole process task, describing key performance, formulating appropriate rules, analyzing all-round data, and feedback personalized evaluation. On the basis of reflection and dialogue, students write their own feelings into short essays. Teachers input students' words into AI system, and AI generates reasoning chain and opinion word cloud. The teacher guided the students to discuss around the reasoning chain and asked, "is AI the same as you?""Where did AI not expect?""Where is your own feeling more profound than AI?" Through this comparative reflection, students can grasp their thinking process more clearly and realize the leap from sensibility to rationality. At the same time, teachers can use the word cloud generated by AI to organize the whole class to carry out collective construction around high-frequency words, and expand individual reflection into group wisdom.

After one-to-one interaction with "AI experts", one student wrote: "the law can protect people like me". The teacher inputs this sentence into the AI system, and AI generates a complete reasoning chain: "the student may play the role of

agent ad litem in juvenile cases in VR mock court, observe how the law protects minors, and deeply understand that the law is not a cold article, but a tool with temperature. He thought that he could protect himself through legal channels when facing similar difficulties in life, so he came up with the cognition that "the law can protect people like me". When students see that their feelings are described by AI as a clear logical chain, their understanding of "legal protection of minors" rises from perceptual knowledge to rational cognition. At the same time, AI integrates students' views to generate word clouds. Teachers project high-frequency words such as "fairness", "justice" and "protection" onto the screen, and guide students to discuss these words to further deepen the abstract generalization.

4.4. Migration Validation

The fourth step of experiential learning cycle is active verification, that is, students apply the formed abstract concepts to new situations to test and correct, so as to deepen understanding. This step is often ignored in traditional teaching, lacking transfer application, and students forget it after learning. AI can generate new situations according to the content of this lesson, support students to solve problems in the new situation, and complete the unity of knowledge and practice.

Educators should pay attention to the principle of "personalization" and "living" in the new situation generated by AI. According to the differences of students' performance in the classroom, AI should push the transfer tasks with different difficulties: focusing on the situation reproduction and knowledge consolidation for students with weak foundation, and focusing on open exploration and scheme design for students with spare capacity. At the same time, the migration situation needs to be close to students' daily life, such as "campus conflict mediation", "community affairs participation", "network behavior norms", to ensure that students can find the corresponding scene in real life. Specifically, AI can generate personalized transfer tasks according to students' performance in this class after class. Teachers can guide students to communicate their tasks and solutions in groups, and then AI can provide immediate feedback. After receiving the feedback, students can modify and improve the scheme and try to apply it in real life.[6] Teachers can organize a sharing meeting in the follow-up class to let students exchange their experience and confusion about the transfer application, forming a complete closed loop from experience to practice.

After students complete the abstract generalization of the concepts related to the rule of law with the aid of AI, AI can generate new cases according to the content of this lesson and students' performance in the classroom. Ask the student who plays the defender: if you are a member of the community industry committee, how will you handle the noise disputes between neighbors? Please use the legal thinking you learned from the moot court to design a solution. The student who played the defendant asked: "you feel the legal constraints in the mock court. Now please imagine how you would use legal knowledge to help a classmate when you found him bullied on campus." When students submit their solutions, AI immediately generates feedback, indicating whether the legal basis used in the student solutions is accurate and whether the logic is clear, and judging the rationality of the whole solution. In the process of practical application, students should further test and correct their understanding of the rule of law,

transform the theoretical knowledge they have learned into practice, and achieve the unity of knowledge and practice.

5. Conclusion

The great potential of generative artificial intelligence technology in the field of education has injected new vitality into the experiential teaching of *morality and the rule of law* in junior high schools. Taking the "VR moot court" course as the analysis object, this paper discusses the four paths of generative AI enabled experiential teaching: situational infiltration, interactive infiltration, reflective infiltration, and transfer verification, which together form a complete learning closed loop from experience to internalization, providing a new perspective for solving the practical dilemma faced by experiential teaching in junior high school *morality and rule of law* course. The use of AI technology effectively extends the depth and breadth of experience, enables students to obtain embodied experience in the virtual scene, deepens cognitive reflection in human-machine dialogue, completes meaning construction in thinking visualization, improves students' interest in learning, enhances teachers' teaching effect, and cultivates students' core literacy.

It needs to be reiterated that technology is the means after all, and the essence of education is the spiritual dialogue between people. In the practice of AI enabled experiential teaching, educators should always adhere to the original intention of "fostering virtue and nurturing talents", and let technology serve the value growth of students, rather than

replace the educational mission of teachers. In the future, with the in-depth development of AI agents and the co construction and sharing of regional teaching resources, generative AI enabled experiential teaching is expected to take root in more classrooms and provide new possibilities for the cultivation of core literacy.

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