

# Artificial Intelligence based Embodied Narrative Learning Design for E-sports

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**Keywords:** Artificial Intelligence; E-sports; Embodied Narrative, Mind-Stream Theory

**Abstract:** Artificial Intelligence is an extension of "human-like" vitality, which can improve embodied image and narrative experience of the game in virtual world of the program, shape the intelligent characters of multiple forms, improve participation of intelligent body and environment, and even generate state of mind flow. Based on artificial intelligence, this study carries out embodied narrative learning design in five aspects: E-sports narrative story, virtual context creation, intelligent interaction means, embodied cognitive load, and E-sports mind-flow, with a view to providing reference for E-sports future world embodied cognitive of human virtual competitive survival experience and the immersive experience of life.

## 1. Introduction

E-sports is a confrontational sport between people using high-tech software and hardware equipment as sports instruments and under unified competition rules, and the degree of demand for artificial intelligence is increasing. In the virtual world of E-sports, participants have a strong willingness to immerse themselves physically and mentally, and it is easy to form a high degree of mind-flow experience, which is the best state of physical and mental immersion. However, due to the limitations of digital games and the form of E-sports carriers, the experts and scholars, especially parents, have different opinions on the survival value and support degree of E-sports, and they even regard E-sports as a flood and ferocious beast, and there are also many students of low ages who are obsessed with or afraid of E-sports<sup>[1]</sup>. However, the era of artificial intelligence has brought vitality to E-sports, and it is important to find an effective way to balance the connection between E-sports and virtual life in the future, to put wisdom survival in the narrative design of E-sports embodiment, to put the competitive experience in the virtual storytelling environment, and to realize the different design of roles and wisdom, and to realize the intelligent substitution, which becomes the key to the development of E-sports embodiment.

## 2. Embodied Narratives

### 2.1. Embodied Cognition

E-sports is the process of human experience cognition, embodied memory and action application. Cognition is embodied, the mind depends on experience, and experience comes from the movement of the body, which together constitute the organism. The physical properties of the body determine the way of cognition, and the experience of the body provides the content of cognition. Embodied cognition involves philosophical and psychological theories, which believe that cognition is both embodied and embedded, the brain is embedded in the body, the body is embedded in the environment, and the mutual embedding and action between them constitutes a dynamic and unified cognitive system. The embodied, generative, interactive and contextual nature of embodied cognition and the existing survival thinking, survival design and survival strategy, enriching the confrontation mode and spatial interpretation of E-sports players.

## **2.2. E-sports**

According to the psychological characteristics of E-sports players, the core value of E-sports for embodied story survival is explored, and the characteristics of fun, participation and contextualization of E-sports are fused with the survival goal, survival content and E-sports strategy, so as to achieve the competitive purpose of edutainment and intelligent confrontation. E-sports are divided into several levels of digital sports E-sports, e-game competition, and intelligent E-sports. With the arrival of the Internet information technology and the intelligent era, the entertainment, immersion and virtual features of AI are becoming more and more significant, such as adventure, simulation, MOBA, and racing, etc., which are both E-sports and virtual survival, and strengthen the players' participation and physical force to promote the unity of body and mind.

## **2.3. Mind Flow Experience**

Mind-stream refers to the psychological state in which a person devotes his whole body and mind to a certain activity and achieves a kind of extreme pleasure. mind-stream experience can describe the best E-sports state of players, which is a kind of highly efficient immersion state, and players in the state of mind-stream can produce integrated E-sports virtual wisdom, also known as the "state of the peak". Clear goals, timely feedback, and a balance between challenge and skill are the prerequisites for the emergence of the mind-stream experience; the integration of behavior and consciousness, and the elimination of interference by consciousness are the cognitive characteristics of the process of the mind-stream experience; and fearlessness of failure, the disappearance of self-consciousness, the disregard of the passage of time, and the focus on the value of the activity itself are the results of the mind-stream experience<sup>[2]</sup>. Embodied cognition and the theory of mind-stream are highly consistent with E-sports, especially when the task difficulty is balanced with the E-sports person's skills, the mind-stream experience is highly focused, and vice versa, there will be anxiety and frustration, boredom, and negative emotions leading to loss of interest.

## **2.4. Artificial Intelligence**

Artificial Intelligence abbreviated as AI (Artificial Intelligence) encompasses a variety of fields such as machine learning, expert systems, intelligent bionics, etc., and was first proposed by computer cognitive scientist John McCarthy at the Dartmouth Symposium in 1956. The realization of technology to liberate human beings, to think consciously and act emotionally like human beings, to accompany and assist human beings, and to coexist harmoniously between human beings and machines is its highest state. Data, algorithms, arithmetic is the core part of artificial intelligence, although the current stage of artificial intelligence decision-making backfires on the responsible subject and affects the use of the object in terms of ethics and morality, and there are problems such as privacy invasion, algorithmic bias, technological panic, machine ethics, and a crisis of trust, but the integration of technology and intelligence into E-sports greatly frees up the labor force, creates a sea of wisdom, and is the virtual world's future master.

## **3. Characteristics of E-sports Embodied Narrative Content**

E-sports is a game of survival competition in virtual space, which can effectively play the mind-flow effect, immerse E-sports players in embodied cognition, and improve the efficiency of knowledge transmission, memory and application. The embodied narrative of E-sports can teach and entertain, combining virtual and real, role-playing, which can fully mobilize the enthusiasm of E-sports players, carry out subtle influence, and utilize the state of E-sports mind-stream to play the maximum efficiency of E-sports and gain cognitive experience.

### **3.1. Immersion oozing out embody**

E-sports are immersive and participatory, especially the scene simulation of artificial intelligence and virtual reality, which gives participants unlimited mind-stream experience, cognitive embodiment, brain, body and environment interaction, increased efficiency, enhanced experience, and even E-sports tasks can be directly designed as embodied stories, combining the difference

external conceptual scaffolding and internalized drive to enhance the effect of E-sports, and to enhance the effect of E-sports in terms of E-sports and scientific knowledge and individualized thinking to establish an immersive connection between the E-sports, to achieve the E-sports for fun and education<sup>[3]</sup>.

### **3.2. Experiential simulation contextualization**

Experiential nature of cognition is the simulation and assimilation to experience and situational cognition, especially creating virtual environment in the age of information technology. Intelligent big data and other intelligent algorithms combine individual self-knowledge, embodied-cognition and external environment objects with reality, which can enhance virtual expansion of E-sports, colorful scene changes and the subject's physical to add mental experience process. And the content, mode and result of cognitive E-sports are innovated and integrated, stimulating E-sports to achieve the effect of edutainment and integration. It can stimulate the interest of E-sports players, trigger the benign emotion of E-sports, and obtain the E-sports of pleasure sense type.

### **3.3. Interactivity of tacit knowledge**

Cognition is embedded in the brain, the brain is embedded in the body, and the body is embedded in the environment. Separation of embodied player roles and story correspondence are two important aspects of E-sports, and explicit and tacit knowledge have an important division of labor in knowledge embodied expression and memory. By changing and adapting the formal representation of scientific knowledge concepts, the implicit interaction of E-sports knowledge, the separation of thinking and concrete, and the close integration of cognition and E-sports allow E-sportspeople to acquire applied knowledge in E-sports contexts.

## **4. Artificial Intelligence-based E-sports Embodied Narrative Design Strategy**

Clarify the embodied narrative goal design of E-sports, and describe the characteristics of E-sports players by designing motivational incentives and evaluating E-sports participation activities. Then exclude interfering factors, integrate self-consciousness into the virtual E-sports space. Thus ignoring the passage of time and space and focusing on the E-sports itself to achieve a mentally pleasurable E-sports state of mind is the E-sports pinnacle of the mind-stream. We can embody cognitive realm, change the cognitive behaviors of E-sports players with generating embodied effects, and exerting positive impacts on the E-sports players. So cognitive behavior of E-sports players produce embodied effect, and play a positive influence to E-sports.

### **4.1. E-sports Narrative Stories**

#### **4.1.1. Intellectual Skills**

The pure entertainment and emotional dependence of commercial E-sports is very different from digital sports E-sports, E-sports need to make E-sports players produce clear and explicit storytelling task goals, and the E-sports integration of knowledge and skills should be designed to meet the analysis of E-sports needs, analysis of E-sports players' qualities, analysis of E-sports content, and analysis of the clarification of embodied cognitive goals<sup>[4]</sup>. The interesting E-sports interface presentation breaks down knowledge and skills into stepped tasks of embodied cognition, develops E-sports players' perception, attention, memory, and thinking and emotion, and then breaks down embodied cognition into knowledge goals, content attainment, and skill mastery in E-sports.

#### **4.1.2. Practice**

The theory and practice of E-sports in real situations are relatively disconnected and independent, while the virtual space of E-sports can realize the non-damaging and repetitive operation of practice, which improves the efficiency of the embodied cognition of E-sports in the unity of knowledge and action, improves the single means of traditional survival tools, and presents a stronger visual impact and efficiency of mind flow of E-sports. Meaningful E-sports can satisfy the intrinsic desire of E-

sports players to operate and practice, reduce social communication barriers, burst out the real self, and promote the improvement of practical ability of students at different levels.

#### **4.1.3. Emotional Experience**

The essence of E-sports is centered on human beings, playing, simulation, and drama can satisfy the unrestricted emotional catharsis, expression and experience of E-sports players. Separating from the body of E-sports, it can't be live from the surface and appearance to explore the state of psychological activities of E-sports players. It can only be measured through the dominant score and ranking, and E-sports visualization experience to show the black box of emotion transparent release, consciousness, thinking, perception and other psychological attributes. Love and hate of pleasure to the emotional world is the real self-goal of embodied E-sports.

### **4.2. E-sports Intelligent Interaction Means**

#### **4.2.1. Sports Embodied Interaction**

E-sports experience, attributed to the virtual sports project movement, can not only realize E-sports and the virtualization of sports projects, but also break through the limitations of online and offline sports projects, enriching the form of E-sports for the purpose of competition and for the purpose of intelligent communication, exercising the E-sports sense of winning and the sense of aggressiveness, communicating between the traditional E-sports and the digital, virtual and intelligent network, and meeting the social demands of E-sports confrontation and E-sports adaptation, which is a multiple extension of E-sports subconsciously. Social demands satisfy the needs of E-sports confrontation and E-sports adaptation, which can be as a multiple extension of E-sports subliminal. AI E-sports chaperone enhance the sense of competition and athleticism, exercising E-sports immersive, pleasure, and ease of perception, and refine the cooperation. So in this way, it will character itself without giving up and abandoning.

#### **4.2.2. Team Cooperation**

E-sports cooperation is divided into two modes, offline MOBA class multiplayer online centralized cooperation, distributed spatial collaborative work, offline interaction, communication to complete the online E-sports, online virtual communication to complete the common task, through the maintenance of the interactive E-sports feedback system to provide dynamic embodied knowledge and E-sports dynamic balance, including the release of the task bounty, reminder of the help to break through the level and the team to fight the monsters coordination, and other sub-components.

#### **4.2.3. Virtual Life**

Players need to interact within a virtual network E-sports space, where players' E-sports relationships produce virtual life simulations that allow for marriage, children, and growth, compressing the space-time element to enable E-sports players to achieve a better balance of task level and skill. In the life of virtual space, E-sports embodied experience stories and plots are conceptualized, and role-playing of different lives is carried out to improve E-sports motivation and life experience, and to enhance the stability and durability of E-sports.

### **4.3. E-sports Embodied Cognitive Load**

Exquisite multimedia picture stimulation will occupy the E-sports person's energy and distract the effect of heart flow, if the E-sports overdose effect will be counterproductive, more easily fatigued, making the E-sports person's duration intensity is not great, and at the same time also have to cope with the mouse and keyboard, information technology media interactive operation increases the cognitive load. The brightness, color, layout of the E-sports interface and the degree of repetition of difficult task operations can lead to emotional fluctuations, coupled with the fact that it is not easy to control face-to-face emotional guidance in an E-sports space, all of which require E-sports players to self-discipline and regulate themselves.

### **4.3.1. Motivation**

E-sports need perfect reward and punishment rules and dynamic adjustable E-sports mechanism design, difficulty design, to improve the motivation of E-sports players. Through participation, it can set three difficulties by simple, ordinary, advanced to design the completion of the entertainment rewards. If the E-sports players can't complete the embodied cognitive knowledge of the E-sports, we will need to reduce the difficulty, test the level of the skills of the E-sports players, so as to avoid giving up or frustration of the emotional Deterioration<sup>[5]</sup>. E-sports are usually set up with time, virtual coins, life value, point system, props, and skin acquisition for level reward feedback.

### **4.3.2. E-sports Elements**

E-sports element is the foundation of E-sports and the key to the realization of mind-stream, providing E-sports players with knowledge embodied skills, core value formation, nurturing and ability enhancement. Through the implantation of E-sports elements that are psychologically suggestive and pleasing to E-sports players, the ability to achieve academic performance is reached, so as to accomplish the established E-sports goals, and the knowledge migration is implanted into the interface, style, characters, stories, roles, and difficulty of E-sports design, and is embodied in E-sports linguistic symbols in terms of the presentation of E-sports visual stimuli, E-sports interaction control, and E-sports feedback to promote the E-sports strategy choices to reach the embodied cognitive goal connection from knowledge to skill, process and method, emotion and creative experience. E-sports elements and E-sports performance cannot be simply equated, the digital sports effect of E-sports mainly focuses on the mind-flow experience and potential embodied cognition, and E-sports designs with different levels of difficulty intelligently adapted to E-sports elements can be created to enhance the mind-flow experience, avoid E-sports frustration, and complete the accumulation of knowledge and skills.

## **4.4. E-sports mind-stream Experience**

### **4.4.1. Teaching and Learning for Fun**

In E-sports, one can actively and independently explore problem solving pathways, acquire critical thinking skills, think independently, make embodied knowledge decisions and think innovative. Interesting E-sports narrative clues, competitive and cooperative player relationships, and multiplayer online collaborative task-driven, can all witness the great truth in small stories, determining the emotional experience of E-sports players, designing E-sports activities according to E-sports content, choosing E-sports types, supporting active integration into E-sports E-sports in the ambience of an entertaining E-sports environment, independent reflection and observation to obtain mastery-style leadership decision-making ability, which in turn promotes E-sports motivation and achievement completion.

### **4.4.2. mind-stream Experience**

Mind-stream is the immersed mental activity or state accompanied by wholehearted devotion, which is the superposition of the thinking of self, non-self and superego consciousness, similar to the analysis of dreams and the fantasy of E-sports, under the premise that the difficulty of knowledge embodiment and the goal of E-sports are reached in agreement, the virtual E-sports can be played with twice the effort and half the effort, and the effective completion of E-sports, so that E-sports players can be effectively attracted to get a pleasurable experience of mind-stream and enter into the E-sports state of forgetfulness. E-sports state, complete the real knowledge and skill practice and E-sports virtual E-sports progression, but also predict the E-sports player's perception of informal E-sports in E-sports.

Mind-flow experience including eight parts such as sense of control, feedback, immersion, concentration, clear goal, challenge, social interaction, and E-sports player's skills, can be quantified from four levels of E-sports feedback, concentration, sense of control, and entertainment, clear task goal, real-time E-sports E-sports feedback, and balance between the task and the level of E-sports to

generate and maintain mind-flow experience conditions and improve E-sports people's mind-flow experience<sup>[6]</sup>. It can generalize and organize understanding of potential knowledge and embodied cognition, get positively correlated E-sports feedback, and positive E-sports emotions.

#### **4.4.3. Role-playing**

In the mind-stream state experience, the cultural and value identity of virtual roles, as well as E-sports E-sports roles imitation, character playing and task innovation are unique E-sports potential exploitation means. Adaptive feedback and flexible assistance help E-sports people dynamically adjust the knowledge output of playing roles and real role transformation, solve E-sports problems in the role, and strengthen the E-sports of embodied knowledge. E-sports role-playing world create an active environment, in which, it can improve structured knowledge of deeper narrative associations. E-sports players experience the fun of a different life, access additional experience and minimize the harm experience, ignoring the real world. In this way, it can improve the ability to cope with the E-sports, stimulate the experience and the creation of practical thinking.

### **5. Conclusion**

E-sports is the means of efficient and effective survival of digital sports, and the electronic, digital, information and virtual E-sports that exclude indulgence and voyage can effectively play the effect of E-sports' mind-flow, and the joining of artificial intelligence effectively solves the problem of immersion in embodied narrative, and obtains the knowledge embodiment of E-sports persons, solves the dilemma of boring and no fun, and the dilemma of the participation in the separation of the mind and the body, so as to guide the E-sports players to utilize E-sports more reasonably, to achieve the best state of mind-flow E-sports for students, and to adapt to the way of competitive life and experience in the virtual world.

### **Acknowledgements**

This paper is one of the phase results of Shandong Sports University teaching-reform project “E-Sports Club Operation and Management”Curriculum Construction Research Based on Rain Classroom Giving Students Individualized Learning, No. SD2023011.

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