

Construction of an Educational Intervention Model for Rural Left-behind Children with Learning Disabilities Driven by Cognitive Intelligence

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Abstract

The paper takes the special group of rural left-behind children as the research object. In order to provide knowledge services for education interventions for rural left-behind children with learning disabilities, we constructed an educational intervention model suitable for rural left-behind children with the help of cognitive intelligence related fields research paradigms. And we explored the specific process of model application to provide new ideas for educational interventions for children with learning disabilities.

Keywords

Learning disability; Educational interventions; Children.

1. Introduction

The problem of left-behind children is a prominent social problem. With the rapid development of China's social politics and economy, more and more young and middle-aged farmers are moving into cities, and a special group of minors--left-behind children in rural areas has also emerged in the vast rural areas. Compulsory education, as education that all school-age children and adolescents must receive and a public welfare undertaking that the state must give priority to guaranteeing, plays a fundamental, leading, and overall role in the entire national education system. Learning Disabilities of rural left-behind children are one of the challenging research problems in compulsory education. As a hidden disorder, Learning Disabilities refer to a group of heterogeneous disorders with difficulties in acquiring and using listening, speaking, reading, writing, reasoning, and mathematical operation abilities.

2. The Theoretical Basis of Educational Intervention

2.1. The Recently Developed Zone Theory

The Recently developed zone theory is coined by Soviet psychologist Vygotsky. According to this theory, the educational circle has put forward the scaffolding teaching model, and researchers have promoted and developed the relevant theories from different aspects. Because of its strong research vitality, this theory is often applied to teaching research. This theory reveals the internal correlation factors among teaching, learning, and development, and is a learning state that learners have not yet reached but are likely to achieve the most. It helps learners develop their learning potential and provides the relevant theoretical basis for educational intervention by the platform.

2.2. The Perceptual Value Theory

The Perceptual value theory emphasizes the influence of cognitive factors on individual behavior. The theory is highly abstract of individual behavior decision-making mechanisms. Based on the individual behavior decision-making mechanism and cognitive factors of the perceived value theory, the platform should draw on the research paradigm in the process of educational intervention. Since the effective coefficient of the structural equation model and the variable coefficient of the system dynamics model have certain commonalities, the educational intervention path can refer to the Perceived value theory and the structural equation model at the same time, and rely on the relevant research of system dynamics mechanism.

3. The Educational Intervention Model for Rural Left-behind Children with Learning Disabilities

According to the task table of children's learning behavior adjustment and the scale of the psychological resilience assessment tool, rural left-behind children and children of the same age were evaluated, and there were significant differences between the learning initiative, learning self-regulation, and learning behavior adjustment ability of rural left-behind children and children of the same age, the former assessment scores are lags behind that of the latter, the psychological problems different degrees of elasticity, hidden learning ability development of adverse factors. To improve the level of mental resilience of rural left-behind children and ensure a healthy psychological state of sustainable development, the platform adopts the solution of educational game intervention. The educational intervention model for rural left-behind children with learning disabilities is shown in Figure 1.

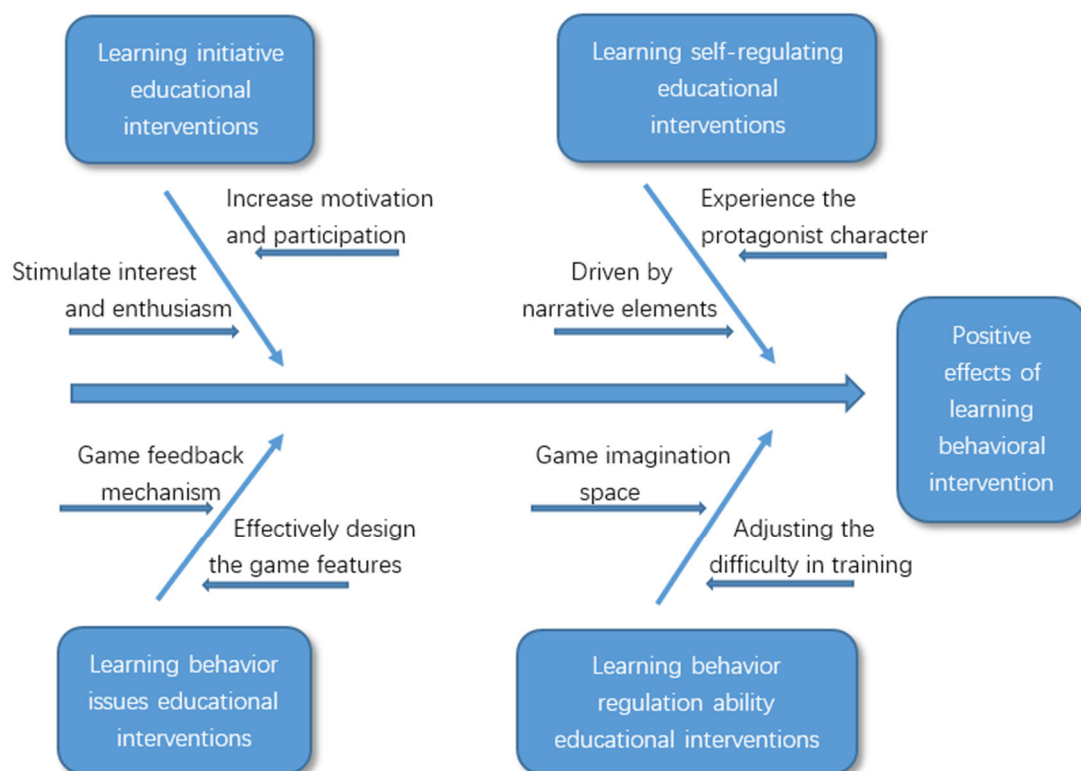


Figure 1. Intervention model for the education of learning disabilities for left-behind children in rural areas educational interventions for rural left-behind children with learning disabilities

Referring to the research paradigm of individual learning action logic path, the model included the intervention path of marine education games consists of learning initiative educational interventions, learning self-regulation educational interventions, learning behavior issues educational interventions, and learning behavior regulation ability educational interventions. The positive effects of learning behavior intervention can be achieved by stimulating interest and enthusiasm, increasing motivation and participation, narrative element driving, experiencing the protagonist character, game feedback mechanism, effectively designing the game features, game imagination space, and adjusting the training difficulty.

4. The Application of the Educational Intervention Model for Rural Left-behind Children with Learning Disabilities Driven By Cognitive Intelligence

Based on Garrison's dynamic cognitive model and artificial intelligence problem-solving model, to promote the expected learning outcomes, educational intervention strategies oriented to critical thinking are proposed. In an online education environment, critical thinking is an important "educational support" that can effectively use the advantages of digital information platforms. Critical thinking is a process of problem-solving. It improves the ability to solve problems by identifying problems, analyzing facts, generating and organizing ideas, making inferences, and exploring solutions to problems. Critical thinking is an important methodology in educational research and provides fruitful guidance for educational intervention strategies. Rural left-behind children learning disabilities education intervention strategy is shown in figure 2, the first stage to identify education intervention, the second stage to define education intervention, the third stage to explore education intervention, the fourth stage to evaluate education intervention, the fifth stage to integrates education intervention, eventually forming education intervention strategies, and optimization in the loop.

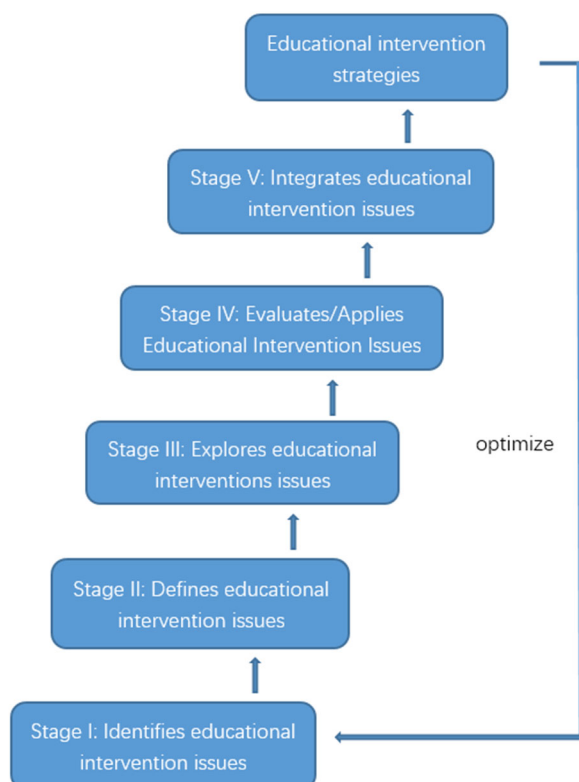


Figure 2. Intervention strategies for education of left-behind children with learning disabilities in rural areas

4.1. Stage I: Identify the Education Intervention for Rural Left-behind Children with Learning Disabilities

Problems in identifying the education intervention stage, the rural left-behind children learning disabilities education intervention to identify a specific issue and collect related information, for the collected information, encourage members to actively participate in the platform, an in-depth online interactive discussion, because of the high quality of interactive discussion is more likely to contribute to critical thinking and deep study. The educational interventions discussed should focus on the information available, be defined within a certain range, and not be so broadly defined as to stray from the topic. The educational intervention of rural left-behind children with learning disabilities can use "visual thinking" software tools to guide the discussion what is the current information on educational intervention for rural left-behind children with learning disabilities? What other information do I need to add? Circle objective information, so that the problem of educational intervention is further determined.

4.2. Stage II: Define Educational Intervention Problems for Rural Left-Behind Children with Learning Disabilities

In the stage of defining educational intervention problems, taking educational game intervention as an example, the relevant variables are firstly identified by defining the boundaries, objectives, and means of educational game intervention problems. Which variables are relevant? Then, arguments are developed based on these variables, specific arguments are constructed, and arguments are finally filled into the corresponding positions and what is defined and what is decided to be achieved is considered to further clarify the structure of educational intervention issues.

4.3. Stage III: Explore the Educational Intervention of Rural Left-behind Children with Learning Disabilities

In the stage of exploring educational intervention problems, logical reasoning and creative thinking should be used to expand and surpass the understanding of the definition of educational intervention problems, creatively generate new ideas and provide various feasible solutions for educational intervention. For example, in the educational game intervention, what are the technical options for the educational intervention of rural left-behind children with learning disabilities? What other possibilities are there for motion-sensing educational games, role-playing games, 3D virtual situations, and 2D anime scenarios? We are constantly generating new ideas in our inquiry.

4.4. Evaluation and Application of Educational Intervention for Rural Left-behind Children with Learning Disabilities

In the evaluation and application education intervention stage, the rural left-behind children learning disabilities education intervention for feasibility solution expression, identification, and critical evaluation, applying education intervention solutions to practical problems, judge the preliminary solution can effectively solve the problem, will be more during the period of new difficulties and a new way of thinking, In this process, it is necessary to put forward various improvement methods and further apply educational intervention methods into practice, to form corresponding late educational intervention solutions.

4.5. Stage V: Integrates Educational Intervention for Rural Left-behind Children with Learning Disabilities

In the stage of integrating educational interventions, the educational intervention for learning disabilities of rural left-behind children integrates the later solutions with the existing knowledge experience, receives feedback, integrates the knowledge schemes such as educational interventions, design concepts, theoretical basis, intervention mechanism design,

technical architecture, measurement orientation, and measurement tools, and confirms the effectiveness of the educational intervention solutions provided.

5. Conclusion

Educational intervention attaches importance to the individual differences of students. Through the design and adjustment of teaching programs and teaching strategies, educational guidance, and control of teaching activities, integration of learning cognition, learning emotion and learning behavior, and other aspects of the intervention program, to solve students' learning problems. Based on learning situation diagnosis, education intervention for rural left-behind children with learning disabilities analyzes the learning situation of learners in the early stage and accurately finds out the problems in the learning process and the causal relationship between the problems, to prepare for the implementation of educational intervention in the later stage. When, for example, found that high-risk learners, the rural left-behind children learning disabilities education intervention, according to the learning diagnosis report the facts and questions for high-risk assessment of learners learning problems, high risk is put forward to solve the problem of learning advice, and take corresponding measures to educational intervention.

In the process of educational intervention, on the one hand, we actively encourage learners to learn emotionally; on the other hand, we provide personalized support and services for learners of different learning levels. In the process of learning at different stages, we adopt effective online learning intervention strategies and measures to reduce learning risks. Because online learning is asynchronous interaction, rural left-behind children with learning disabilities education intervention is required to provide more variety and appropriate learning resources, design appropriate learning and discussion topic to attract learners to actively participate in the discussion, at the same time to strengthen the interaction between online learning, the implementation of learning cognition, learning emotion and learning behavior education intervention.

Acknowledgments

This work was supported by Guangdong Philosophy and Social Sciences "13th Five-Year Plan" 2020 discipline co-construction project "An intervention study on the educational intervention of learning disabilities in rural left-behind children driven by cognitive intelligence"(Number: GD20XJY06), Lingnan Normal University created a national teacher education innovation experimental zone project "Research on the Optimization of Rural (Island) Education supported by Intelligent Technology: A case study of education intervention for left-behind children with learning disabilities",2021 Guangdong Provincial College Students Innovation and Entrepreneurship Training Program Project "Left-behind Children Learning Disability Education Intervention System"(Number: 1250).

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