Problems and Countermeasures in the Construction of Educational Informatization in Africa

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Abstract

The integration of information technology and education has become an important guarantee for the allocation of educational resources and realizing educational fairness. As a developing region with weak economy, Africa has some deficiencies in the construction of education informatization. Based on this, this paper mainly uses the literature method and case analysis method to analyze the problems of education informatization construction in Africa. Through research, it is found that in the construction of educational information, Africa has insufficient policy and economic support, weak educational information facilities construction, insufficient teacher resources training and information classroom teaching innovation. Finally, according to the practical problems, the path of education informatization construction in Africa is proposed.

Keywords

Africa; Educational Informatization; Teaching Innovation; Education Equity.

1. Introduction

With the continuous development of information technology, it has gradually integrated into the education system. Through the integration of informatization and education, it is conducive to the balanced distribution of resources and education equity. Therefore, countries are constantly exploring the integration path of information technology and education [1]. As a country with a relatively weak educational foundation, Africa has certain shortcomings in the construction of an educational information system. In order to better realize the optimal use of educational resources, African countries strive to improve the quality of education and accelerate the construction of information systems [2]. Based on this, it is of great value to explore the problems and countermeasures in the construction of education informatization in Africa.

2. Practice Content of African Education Informatization Construction


In the African education informatization link, in accordance with the international informatization development trend, education informatization is gradually incorporated into the national strategic level to create equal opportunities for education. For example, Kenya promulgated a development plan for education informatization as early as 2005 in the "Work Conference No. 1 Document". In 2006, he devoted himself to the integration of information technology and education. In 2013, a five-year education informatization development plan was formulated, striving to promote the all-round development of education through
information technology after 2018 [2]. Not only Kenya, but other African countries are also actively implementing policies and increasing policy support. In terms of economic support, the African region focuses on allocating financial funds for the development of education. In 2015, the African region accounted for about 15% of education funding, and in 2020, it will reach 16.74%. At the stage of supporting educational informatization funds, Kenya, as a country with relatively rapid educational informatization, invested 163.3 billion shillings in education funding. At the same time, the Global Education Partnership Organization provided it with 88.4 million US dollars in informatization construction support funds. Promote the development of education informatization in an all-round way [3].

2.2. Current Status of the Construction of Educational Information Facilities

In terms of education informatization construction, Africa pays attention to strengthening the construction of network infrastructure, including hardware construction and software construction. Build power grids and information equipment in urban and rural areas, and allocate resources to primary and secondary schools and other colleges and universities. In terms of software construction, the African region has gradually developed education management information systems, introduced e-learning management systems, and promoted them nationwide [6]. For example, in Kenya’s infrastructure construction, the government has built 35 large-scale power grid projects, and plans to reach 40% power coverage by 2030 and introduce 3,500 computers in 2017. In terms of software systems, establish a national education management system and extend the e-learning management system to the whole country to solve online and offline education problems for primary and secondary school students.

2.3. Current Situation of Teacher Resource Training

Teachers are an important part of informatization construction. The African region is committed to strengthening pre-employment and post-employment education for teachers, and further training is carried out on the use, operation and communication of computers. For example, Kenya, as a pioneer in the informatization of education in Africa, trains teachers, including leadership training, the use and maintenance of the Internet, and the integration with teaching content. In digital education, around the ICT theme, construction projects are integrated with online and offline training strategies, and gradually expanded to rural areas to enhance the teaching force in rural areas [7].

2.4. Current Situation of Informatization Classroom Teaching

In the informatization classroom teaching, the African region gradually carried out the practical operation of Word, Excel and Access, and started computer courses, electronic technology and informatization teaching methods. For example, Kenya has designed basic information courses in the classroom teaching link to understand the application of computer programs. In the elementary and middle school education, 3000 courses have been gradually involved, including electronic technology, robotics, and STEM education.

3. Analysis of the Problems Existing in the Construction of Education Informatization in Africa

There are still many problems in the stage of education informatization in Africa, which are mainly reflected in the following aspects:
3.1. *Insufficient Policy and Economic Support*

In the stage of educational informatization construction in Africa, although policies and economics continue to support education, due to the relatively limited development model and economic strength, there are certain deficiencies in support [8]. First of all, in terms of policy support, Africa has certain shortcomings in the construction of education information system policies. Africa adopts differentiated information support policies, and gradually increases the infrastructure of education informatization for urban areas, while for rural areas, the construction is relatively weak, and the basic power supply cannot meet the demand, and there is no way to talk about the construction of network informatization. Secondly, in terms of economic support, the investment in education in Africa is mainly based on the resources of the government and local governments, and the lack of use of social resources has resulted in a low level of overall investment. For example, in terms of policy support, Kenya expects to build a diversified education information system, but in terms of policy, it is inclined to urbanization, and when it comes to capital investment, government investment only accounts for about 16.7%. Compared with developed countries, there is The significant gap affects the development of education informatization mode.

3.2. *Weak Construction of Educational Information Facilities*

The infrastructure construction of education informatization in Africa is relatively weak. In urban areas, the construction is relatively complete, while in rural areas, there is still a large space [9]. First of all, the infrastructure is not perfect. The government has not built a complete information network system for the construction of education informatization in rural areas, and some rural areas are not even connected to electricity, which hinders the construction of informatization education models. Secondly, there are deficiencies in the construction of informatization application capabilities. At present, during the construction of urbanization in Africa, an educational resource service platform has been introduced, but it has become an important tool for urban education and aristocratic education. Remote areas cannot enjoy the convenience brought by educational informatization at all, and they have not even been exposed to informatization technology. For example, in Zambia's education informatization process, the electricity coverage rate in rural areas reached 37%, the network coverage rate was less than 15%, and the education informatization coverage rate was less than 3%. In terms of the construction of the information service platform, it has not covered rural areas, and the coverage in urban areas is still lacking. It can be seen that there are still weak links in the construction of educational information facilities in Africa.

3.3. *Insufficient Strength of Teacher Teaching Information Training*

In Africa's education informatization construction, there are insufficient training for teachers in informatization technology. First of all, there is insufficient training for teacher informatization [10]. At present, there are shortcomings in the coverage of information technology in Africa, so that the training of teachers is still at the initial stage. The training of information technology only involves some key schools, and most schools only conduct computer technology. In simple training, teachers can only operate simple computer modules and cannot use computer technology to compile and modify teaching plans. Secondly, the informatization evaluation of teachers is insufficient. At present, due to the insufficient coverage of informatization in Africa, the overall evaluation mechanism has not been formed, and teachers' enthusiasm for mastering informatization technology is significantly insufficient. For example, in Kenya's teacher resource training, only the training of courseware and computer technology is the main focus, and the integration of curriculum and computer technology has not been realized. Teachers' practical application ability is not strong, and teachers in rural areas have not even educated informatization. In terms of the evaluation mechanism, some key urban schools have incorporated informatization teaching into the
evaluation mechanism as one of the conditions for teacher promotion and salary increase, but most areas still have not built a complete evaluation system. It can be seen that the lack of informatization training for teachers has become one of the important issues affecting the development of education informatization.

3.4. Informatization Classroom Teaching Needs to be Innovated

The construction of the educational information system not only needs to improve the quality of teachers and the guarantee of basic resources, but also strengthen classroom teaching innovation. However, Africa still uses traditional teaching methods in the information-based classroom teaching. First of all, there is insufficient innovation in the form of online classrooms. At present, there are diversified classroom forms such as online classrooms, famous teacher classrooms, and thematic classrooms. However, the traditional one-to-many blackboard teaching model is still adopted in Africa, and education information technology has not been integrated into the classroom, resulting in the effectiveness of the overall teaching information reform Not ideal. Secondly, the combination of classroom teaching content and network is insufficient, and the integration of multimedia, short video and information technology needs to be further expanded. Schools simply use copied materials, which are not suitable for the specific teaching situation of schools and students. For example, Kenya uses the courseware materials of a unified teaching platform, and some schools use a unified template to apply knowledge, and the pertinence and effectiveness are not obvious.

4. Countermeasures for the Construction of Education Informatization in Africa

When building education informatization in Africa, in response to its existing problems, it is necessary to improve the countermeasures for informatization construction. The specific countermeasures are as follows:

4.1. Increase Policy and Economic Support

Policy and economic support is an important way to promote the development of education informatization industry. In response to the problem of insufficient education informatization policies and economic support in Africa, we can increase support from the following perspectives: First, establish sustainable education information Development policy. When building policies, it is necessary to formulate clear support policies based on differences in regional development, such as establishing differentiated and different types of information demand policies. Especially for rural areas, it is necessary to increase subsidies and provide them with preferential support for power equipment and network equipment, so as to provide policy support for the development of education informatization. Second, we must increase economic support. In response to the relatively weak investment in education informatization in Africa, a diversified financing mechanism must be established. The government and the regional government should establish an overall plan to determine the proportion of funds invested. At the same time, it is necessary to actively guide social forces, build a diversified investment mechanism for corporate support and social participation, and build a multi-party cooperation platform to ensure that the investment in education informatization hardware and software equipment continues to increase, thereby improving the overall education informatization development level.

4.2. Speed-up the Construction of Educational Information Facilities

In the stage of informatization facilities construction in Africa, it is necessary to accelerate the construction of informatization infrastructure, especially in remote rural areas, and to increase investment in facility construction. First, we must strengthen the construction of infrastructure
in rural areas and underdeveloped areas. In urban and rural areas, there are characteristics of imperfect resource allocation. The government should increase investment in power equipment, computer equipment, and network equipment, so that primary and secondary schools can access the Internet as soon as possible, and gradually increase the speed of the Internet. In terms of the construction of hardware facilities, it is necessary to strengthen the development of teaching resources and the basic hardware environment. Secondly, it is necessary to strengthen the construction of resources for the application of informatization. In rural and remote areas, it is necessary not only to strengthen the construction of hardware facilities, but also to strengthen the construction of software infrastructure as soon as possible, build a resource public service platform, introduce advanced computer management systems, and combine teaching resources, software and multi-party materials. Create a distributed and integrated information platform to improve the service capabilities of informatization, thereby creating a complete informatization teaching system.

4.3. **Strengthen the Training of Teachers' Information Quality**

Strengthening the training of teachers' quality is an important link in the realization of informatization education. African teachers have certain deficiencies in terms of informatization quality, and it is necessary to strengthen the training of teachers' professional quality. First of all, teachers should be trained on information technology on a regular basis. In the training process for teachers, online and offline training models should be adopted to establish an information technology training system. Offline courses actually teach teachers the computer operation ability and information technology level. Online courses create a curriculum system that integrates information technology and education courses, including teaching objectives, teaching content, teaching methods, and teaching cases, so that teachers can use computer technology to master the latest teaching plans and continue to improve their teaching quality. Secondly, it is necessary to establish an evaluation mechanism for teachers' informatization level, construct a complete evaluation index system for teachers' informatization level, incorporate teachers' teaching ability and informatization ability and other indicators into the evaluation system, and realize the evaluation of teachers' informatization ability. This will enhance teachers' enthusiasm for informationization, and better integrate information technology into the teaching process.

4.4. **Realize the Innovation of Informatization Classroom Teaching**

During the construction phase of the African teaching informatization system, there are problems such as insufficient innovation in informatization classroom teaching, which has an adverse impact on the development of the overall education system. Based on this, it is necessary to realize the innovation of informatization classroom teaching. First of all, it is necessary to change the form of classroom teaching, change the previous classroom teaching mode, adopt diversified classroom forms such as online classroom, famous teacher classroom and special classroom, gradually get rid of the constraints of time and space, so that students can start learning anytime and anywhere through the Internet. Especially in rural areas, it is necessary to further increase the reform of classroom teaching mode to provide students with information-based learning convenience. Secondly, we must continue to enrich the content of classroom teaching. On the basis of network-based construction, it is necessary to gradually publish high-quality teaching resources to the network, establish an information-based sharing platform, and realize the sharing of educational resources. In the design of classroom content, multiple disciplines such as science, mathematics, and fine arts are gradually combined with information technology, and various forms such as multimedia technology, video, and short video are used to enrich classroom teaching content. Especially in rural areas, although it cannot meet the urban standards, multimedia rooms and computer rooms can still be used to
share resources as much as possible to ensure that students receive network resources to the greatest extent.

5. Summary

In the globalized development environment of education, the integration of information technology and education system has become the development trend of education. Due to the relatively sluggish development of the economy and education system in Africa, there are still many shortcomings in the construction of education informatization. Based on this, the thesis mainly explores the problems and countermeasures in the construction of education informatization in Africa. The main points are as follows: in terms of political and economic methods, Africa must increase policy and economic support; in terms of infrastructure construction, it is necessary to speed up the development of educational informatization facilities. Construction; in terms of teacher resources, it is necessary to strengthen the training of teacher resources informatization; in classroom teaching, it is necessary to realize the innovation of informatization classroom teaching.

References

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