E-Learning in Childhood Education: A Roadmap for Effective Management of Schools

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Abstract: The dynamic changes and technological advancements in the world today coupled with their attendant challenges create a drive for innovation in childhood education to achieve better and lasting results. This material examines e-learning as a strategy for achieving cognitive development and effective management of schools. It identifies the techniques used in e-learning which include the use of internet, CD-ROM (audio lessons/ audio books, video books, interactive videos) and the virtual classroom. It also identifies the differences between e-learning and traditional classroom learning. The impact of E-learning on the cognitive development of children is considered as well as the benefits and disadvantages of e-learning, which if properly managed would provide outstanding results in childhood education, effective management of the educational enterprise and sustainable development.

Keywords: E-learning, Childhood Education, Roadmap, Effective, Management, Schools.

Introduction

In a constantly evolving world, electronic learning continually plays a prominent role in childhood education. It is an innovative approach which takes on a different dimension away from the traditional classroom setting. E-learning is the delivery of formal learning experiences or training with the aid of digital or electronic resources. E-learning is provided through the use of devices such as computers, tablets, and cellular phones etc, which are connected to the internet. E-learning can either be synchronous or Asynchronous.

Synchronous e-learning is when the teacher or the instructor and the learner interact with each other from different locations in real time. While asynchronous e-learning implies self-paced online learning or training in which the instructor and learner are not online at the same time. Comercheroet.al (2006), defines e-learning as, “a means of education that incorporates self-motivation, communication, efficiency, and technology.” He further emphasizes the need for personal motivation in e-learning due to the limitation of social interaction, which almost totally eliminates interpersonal relationships and the exchange of ideas and information.

Electronic learning enhances cognitive development in children because learning is made easy and enjoyable, which is what captivates children. Help me Grow, (2021) describes cognitive development to mean, “how children think, explore and figure things out,” and this process is accelerated by electronic learning which further facilitates brain development. Electronic learning in childhood education is innovative in the sense that it enhances the learning experience through the use of virtual classes, multimedia tools, animations and interactive videos to explain concepts and ideas to make it simplified.

This style of learning helps children to study independently and also develops their confidence to learn, understand and put to practice without the physical presence of a teacher, an instructor or their fellow classmates.

Techniques used in E-learning

Abed (2018), describes the various techniques used in e-learning to include the internet,
CDROM, interactive videos and the virtual classroom.

- **The Internet** – which is a global network consisting of several networks and millions of users contains educational content on different subject matter across all age grades and is available to children, free or through subscriptions. A typical example is YouTube, which has a channel for a wide variety of children educational content.

- **CD–ROM** – Educational materials are also available in CD – ROM, whereby the educational content is prepared as audio lessons, video lessons, audio books, tutorial videos, animations and video books. According to Walker (2017), “audio books are a wonderful way to expose your child to complex language, expressive reading, and fantastic stories.” Furthermore, she emphasizes that when children listen to audio books, it enhances a valuable and enjoyable experience of them utilizing their imagination to the people, places and ideas being communicated. Johnson (2021) explains that audio resources play a role of supporting and extending children’s learning. She adds that, “they can be used to encourage storytelling skills, support children’s exploration of the world around them and enhance imagination in the roleplay area.” Thus, the need for children to possess good listening skills for language and communication development places a demand on the use of audio resources to help achieve these objectives. Audio resources for children can take the form of; audio stories, songs and rhymes, sounds and listening games, as well as personal recordings. Johnson (2003), highlights that the use of audiobooks have been impactful for second-language learners, learning-disabled children, struggling readers and non-readers.

- **Video Lessons**: Elezaj(2021), expounds on the relevance of educational videos, and claims it engages children, is fun and also interesting and makes it easy for children to grasp subjects and remember them in a long term. Elezaj compares the impact of the traditional classroom mode of learning and e-learning, emphasizing that children that learn through video sessions produce outstanding results compared to classroom teaching, and also video lessons fulfill the expectations of children for learning education.

- **The Interactive Video**: An interactive video provides the capability for a viewer to interact with the video content by employing a wide variety of tools. Wzyowl (2021), it is possible for a user to click, drag, scroll, zoom in and out and also perform a lot of other functions similar to the way they would interact with a web content. Cullen (2015) stresses that children can be excited when using an interactive video by engaging multiple senses through illustration, animation, audio and touch. Through the use of intuitive devices, children are encouraged to learn through experience and experimentation. Interactive media also has the potential to enhance learning outcomes in children by providing programs which enable them progress through various skill/ proficiency levels at their own pace.

- **Virtual Classroom**: Tophat (2021) defines a virtual classroom as, “a digital learning environment that allows teachers and students to connect in real time.” Tophat further explains that it employs video conferencing, online whiteboards and screen sharing to enable educators to hold live lectures and interactions with students in an interactive setting. Virtual classrooms are designed to replicate the experience of a physical classroom, but in a virtual sense with additional benefits of file sharing, instant feedback and interaction. It enables children and their teachers to communicate and also collaborate and are designed to be customizable and accessible to users on a variety of devices like laptops, smartphones and tablets. Funtech (2021), identifies the benefits of virtual learning environments to include; increased inclusivity, improved accessibility, community and relationship building, cost savings, expanded world view, improved technical skills, immediate feedback on learning and greater flexibility and comfort. It identifies virtual learning as the future of learning and can be utilized by children at all stages in the educational system.

**Differences between E-Learning and Traditional Learning**

Abed, 2018 examines the differences between e-learning and traditional learning as follows;
Table 1.0

<table>
<thead>
<tr>
<th>No</th>
<th>Traditional Learning</th>
<th>Electronic Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Children receive traditional education in the same place and time</td>
<td>E-learning is not limited to place and time</td>
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<tr>
<td>2</td>
<td>The teacher plays the role of a vector and source of information</td>
<td>In e-learning the teacher acts as a guide</td>
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<td>3</td>
<td>Communication with teacher determines the time of the lesson and freedom to ask questions is limited</td>
<td>There is freedom to communicate due to the interactive nature of e-learning and the learning tools</td>
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<td>4</td>
<td>Depends on traditional culture and focuses on the production of knowledge, and the teacher is the basis of the learning process</td>
<td>E-learning presents a digital culture that focuses on the processing of knowledge and helps children to focus on the educational process and the teacher</td>
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<tr>
<td>5</td>
<td>It is difficult to capture the lectures/classes for reference purposes and also for understanding</td>
<td>E-learning tools have features which makes it easy to replay the classes or lectures over and over again till understanding is achieved</td>
</tr>
</tbody>
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E-Learning and Cognitive Development in Children

Encyclopedia of Children’s Health defines Cognitive development as, “the construction of thought processes, including remembering, problem-solving, and decision-making, from childhood through adolescence to adulthood.”

Furthermore, cognitive development in children is the sum-total of how a child perceives, thinks, and gains understanding of his or her world through the interaction of genetic and learned factors. It includes: information processing, intelligence, reasoning, language development, and memory. Encyclopedia of Children’s Health expounds more on Piaget’s theory of cognitive development; stating that Piaget, envisioned a child’s knowledge as composed of schemas, basic units of knowledge used to organize past experiences and serve as a basis for understanding new ones. Schemas, are continually modified by the complementary processes of assimilation (taking in new information, by incorporating into an existing schema) and accommodation (when schema changes to take in new knowledge). Through cognitive development, a balance is created between assimilation and accommodation.

Steinhoff (2016), describes e-learning as a learning aid, explaining that e-learning platforms enable children to remember information more clearly, and keeps them motivated to develop working schedules, as well as support them mentally. Apart from learning skills, Steinhoff highlights that e-learning helps children develop emotional and social skills and also has a powerful impact on children’s behavior. Ratniece (2018), adds that e-learning affects the learning abilities of students which require them to learn ‘by doing’, and enables them have a higher learning efficiency. In addition, e-learning focuses more on practical approach than theory, thus it makes childhood education engaging and exciting.

According to Straker et al., "better cognitive development and academic successes, as well as decreased obstacles to social relationships, have evolved as potential benefits of computer use" (2009, as cited in Joshi 2012).

Johnson 2006 (as cited in Joshi 2012), describes the internet as a cultural tool that influences cognitive processes and an environmental stimulus that contributes to the formation of specific cognitive architecture.
Benefits of E-Learning in Childhood Education

E-learning provides the following benefits in childhood education;

1. Provides easy access to the teacher/ instructor
2. Enhances the availability of curriculum 24 hours a day, seven days a week.
3. Provides additional assistance in repetition.
4. Provides ease and multiple ways to assess child development through instant evaluation tools.
5. Helps maximize time due to free access to information.
6. Reduces workload of the school through provision of grading tools.
7. Reduction of administrative burden for the teacher.

Disadvantages of E-Learning in Childhood Education

Despite the numerous benefits offered by e-learning to childhood education, Tamm, 2020 points out some disadvantages. These include:

1. Online student feedback is limited. (in a non-virtual classroom setting)
2. E-learning has a potential of causing social isolation.
3. E-learning requires strong self-motivation and time management skills.
4. E-learning is only accessible to computer literate children and children in the urban setting.
5. E-learning lacks face-to-face communication.
6. Poor children in rural communities can hardly be exposed to e-learning.
7. Lack of accreditation and quality assurance is limited in online education.
8. Children are at risk of being exposed to harmful content and websites if not properly monitored and if internet security modes are not activated.

Role of E-Learning in School Management

The role of e-learning to the effective management of schools cannot be overemphasized: some of these roles include:

i. Helps the school administration/management focus more on effective and efficient delivery of educational programme.
ii. Reduces pressure on the maintenance of school plant
iii. Helps channel the schools financial resources to more efficient educational delivery systems rather than clumsy overheads and recurrent expenditure.
iv. Time and space is no longer a limitation to management in the teaching/learning process.

Conclusion

E-learning in childhood education is fallout of global influence and technological advancements. It is a veritable strategy for making the management process of planning, organizing, directing and controlling of educational programmes and processes more robust, exciting, and flexible while at the same time enriching the teaching/learning experience. E-learning will also help in cognitive development by developing children rapidly through practical and interactive tasks rather than a theoretical idea which they cannot relate with. By taking the right steps, the disadvantages of e-learning can be improved upon to reduce negative impacts on childhood education whilst maximizing the benefits to achieve the desired results. By applying the various techniques of e-learning; the internet, use of audio lessons, audio-books, video-books, interactive videos and virtual classrooms, childhood education will be more innovative and will achieve a
higher level of educational results in children than the traditional classroom/school setting which in turn will enhance quality education delivery and overall effective management of the educational enterprise and promote sustainable development.

Through the expansion and deepening of internet access, the telecom providers expand their market base and more jobs are created in the rural areas which galvanizes the digital economy and leads to overall sustainable development.

**Recommendations**

i. Relevant stakeholders including Nigerian Communications Commission and Telecommunication Providers etc should expand internet access and coverage to both urban and rural areas of the country.

ii. Schools should functional e-learning centers to enable students access the various e-learning portals and applications

iii. Management of Educational Institutions should establish free Wi-Fi access within the school for instructors and learners.

**References**


