E-Learning

E-Learning refers to educational content and learning experience delivered to learners through an electronic device (Nayak and Kalyankar, 2010) It can also denote means to facilitate and improve learning through use of computers, internet, CD-ROMs and audio visual aids as supplementary to a teacher delivering educational instruction in a classroom setting. E-Learning is increasingly being recognized as a means to deliver formal education in emergencies, however it yet to be fully implemented in emergencies. Notable innovations like Rasperry Pi; an E-learning intervention in Lebanon is still in piloting phase. (UNICEF, 2014) This paper will focus on one particular innovation; E-Learning Sudan (ELS) to examine how innovations can address challenges in education interventions in emergencies.

ELS is an innovation that enables children to acquire education in a non-traditional setting (without classrooms or teachers); using electronic tablets that contain customized educational games. This innovation was piloted in 2014 to instill basic numeracy skills in children in Sudan; a country where approximately 2.3m children are out-of-school. (Stubbé, Badri, Telford, Van der Hulst and Van Joolingen, 2016) Through ELS, students follow video and audio instruction in the tablet and play games that introduce to them new mathematical concepts. The tablet is solar powered which is ideal for remote places without connection to electricity. Community facilitators are trained on some basic technical aspects of the tablet and child friendly approaches to be able to facilitate learning by supervising children. (War Child).

An evaluation of ELS by Stubbé et al. (2016) has shown that children can indeed learn mathematics by playing educational games; in fact it proved that children who have never been to school can gain knowledge through E-learning. ELS meets some minimum standards for education in emergencies namely standard 1 on community participation and standard 2 on the use of community resources. (INEE, 2010) The community where ELS was piloted got involved in setting up community centers and facilitators drawn from the community trained and engaged as facilitators to implement the E-learning project. (Stubbé et. al, 2016:148)
New Approach to Education in Emergencies

This innovation departs from the mainstream education in emergencies interventions in that it ensures learning begins much faster than in conventional interventions. Furthermore, learning is continuously and easily assessed unlike in traditional education models; in E-learning, learning is tracked through the learning management system. E-Learning is also cost effective as no schools need to be put up or staff hired which contributes to expenses needed to set up interventions.

Education and Conflict

Education is adversely affected by conflict; most notably because of mass displacement that consequently leads to children being out of school. In addition education systems and services become overwhelmed due to an influx of school age children. Syrian refugees in Lebanon currently make up 25% of the country’s population. This has caused pressure on social services in the host country including in the education sector. (McVeigh, T, 2013) According to UNESCO, in 2014-2015 academic year, Iraq, Jordan and Lebanon have taken between 20% and 60% of Syrian refugee children into the formal education school system. This underscores that up to 70% of Syrian refugee children and youth are out of school without access to education or any form of training. Due to such prevailing context, more than 3 million Syrian refugee children are out of school. (UNESCO, 2015)

Benefits

E-Learning supports and supplements the traditional education model in the short term, without displacing it in the long term. It enables children to keep learning, furthermore because of the way the ELS is implemented in collaboration with the Ministry of Education in Sudan, and a national university there is legitimacy. Consequently, children who have acquired knowledge and skills can transition and progress to higher levels of learning within the formal mainstream education. (Stubbé et. al, 2016)
Customized Curriculum

ELS has easy and understandable educative games; designed according to Sudanese curriculum; the curriculum was designed in collaboration with Ahfad University and the Ministry of Education in Sudan. (Stubbé et. al, 2016) This ensured that content was relatable to the refugee students as opposed to content based on curriculum of host countries. (Mendenhall M, Dryden-Peterson S, Bartlett, L, Ndirangu, C, Imonje, R, Gakunga, D, Gichuhi, L Nyagah,G, Okoth U and Tengelder M, 2015) This has meant vulnerable children are doubly disadvantaged in accessing education “…Children end up either studying a curriculum that is alien to them or with no schooling at all.” (UNESCO, 2010 p.179)

Language Policy

The other crucial aspect that accompanies curriculum customization is that the language of instruction in E-learning is that of the targeted student population. This mitigates a major challenge in education in emergencies where refugee students join education systems in host countries that are often taught in languages unfamiliar to them. Although UNESCO recommends use of language and curriculum of host countries, research shows this has been counterproductive and detrimental. (Mendenhall et al., 2015)

Language challenges may mean that children remain out of school. In a study by United Nations Children Fund (UNICEF) and Norwegian Refugee Council conducted in Iraq where 60% of refugees live in urban areas, only 10% of Syrian refugee children went to school. 90% were out of school; language policy is attributed as one of the factors keeping these children out-of-school. In Iraq, the language of instruction is Kurdish while majority of Syrian refugee children are Arabic speakers (UNESCO pg. 10). In Kenya where Kiswahili and English are languages of instruction and the former tested in national exams, refugee children perform below par in all courses because they have not mastered language of instruction. (Mendenhall et al., 2015)
Quality of Education

E-learning is tailored to ensure quality education is achieved; besides the standardized content, students are actively engaged, which is one of the pillars an effective education. Surveyed schools serving refugee students in Kenya indicates that the setup was teacher centric. Instructors mostly delivered lectures with little or no involvement of students. In addition instructors were not able to assess students due to large class sizes (Mendenhall et al., 2015)

On the other hand ELS allows students to answer questions and get instant feedback on correctness of their answer; this way the learner is constantly engaged. The ELS software evaluates students at every level, allowing them to progress according to their performance. (Stubbé et. al, 2016)

Cost Effective

E-learning is less costly as it requires less material and human resource input particularly teachers. Lack of financial resources may render students out-of-school as is the case of Sud Academy; a community run school that serves refugees students in Kenya where grades one to four were completely discontinued due to lack of funds to pay teachers. (Mendenhall et al., 2015) On the other hand E-learning utilizes community volunteers to facilitate learning hence little or negligible financial implications.

Challenges

Some of the limitations of this form of E-learning is that children with prior knowledge on the course area covered in the games may have less to gain. For the pilot conducted in Sudan, students who had basic numeracy skills finished the game faster since the game taught and tested what they already know. (Stubbé et. al, 2016 p.148) This can be remedied by ensuring content specific for every level of learning is availed and that learners are given the right content for their level. The other challenge is that it is not evident whether motivation can be sustained in autonomous learning. While students exhibited motivation throughout the 6 months of the pilot phase, it is questionable whether
without a teacher to give instructions in person and engage the students, motivation can still be sustained by students. (Stubbé et. al, 2016)

**Recommendations for future humanitarian emergencies**

Since humanitarian funding for education in emergencies is negligible; “in 2014 less than 2% of global humanitarian funding was allocated to education” (UNICEF, 2016), E-learning presents a way to ensure this crucial interventions is delivered to vulnerable populations with less financial demands. Humanitarian organizations should consider E-learning as a primary means to deliver education interventions and focus on setting up mechanisms to evaluate its effectiveness which is currently lacking.

The number of children in conflict areas that are out of school is alarming. “There are now 34 million out of school children and adolescents living in conflict-affected countries.” (UNICEF, 2015 ) Humanitarian interventions in education should consider a rapid upscaling of existing E-learning innovations for use in ongoing emergency situations; this will ensure interventions are delivered in a timely manner.

Education has been consistently underfunded, a new global fund provides positive prospects; fund aims for a more collaborative approach between governments, humanitarian actors and privates sector. (Education Cannot Wait) Donors would like to see evidence based intervention and technology to ensure “quality and tracking of learning through strong monitoring systems.” (DEVEX, 2016) Humanitarian and development agencies should leverage this new funding to invest in platforms that ensure continuity from E-learning into formal education systems where emergency affected children are able to continue on to the next level of education.
Conclusion

ELS is a timely and pertinent innovation for education in emergencies with potential to be scaled up and can be used to respond to education needs of children in conflict zones such as Syrian refugee children. The open source software of the ELS games can enable them to be used in a different country without additional software license expenses. Donor interest in quality of education delivered through technology provides an excellent opportunity for stakeholders to better refine existing innovations to ensure the timely delivery of quality education to children in emergency contexts.
References


