Volume 20
Number 1
Year 2018
ISSN 1529-0905

Journal of BANGLADESH STUDIES

BDI
Bangladesh Development Initiative

E-Learning as the New Tool for Development in Bangladesh

Abureza M. Muzareba

Department of Marketing, University of Dhaka, Bangladesh
Email: *muzareba@du.ac.bd*

Abstract

This paper is based on a qualitative case study research, in an attempt to find a new perspective around e-learning, associating it with developmental gains and with ground realities where informal learning is a deep-rooted social practice in rural Bangladesh. The study shows that e-learning can provide enhanced opportunities for learning, and the development of awareness, skills and knowledge, associated with the lives and livelihoods of those living in situations of poverty. These enhanced opportunities imply increased capability of rural people and the resulting freedom to learn, despite individual limitations and challenging context. The research suggests that a trust based assisted e-learning platform can offer freedom of learning for rural people when the e-learning system is configured in a way that reflects context-specific rural realities.

Keywords: e-learning, development, Bangladesh

1 E-learning and Development Nexus

In Bangladesh, e-learning is considered as a technology-based learning tool predominantly for the Information and Communication Technology (ICT) literates. However, e-learning as a concept is contested and lacks a coherent theoretical stance to fully explain it in different contexts (Andrews 2011). In an attempt to provide a detailed account of e-learning, Haythornthwaite and Andrews (2011) argues that e-learning is a transformative movement in learning and should not be considered as bounded by institutional structures of courses, programs or degrees, but instead as embracing the way learning flows across physical, geographical and disciplinary borders. Their perspectives implicate that e-learning also includes informal means of learning and does not confine to a particular ICT option. Although a single definition of e-learning is yet to be established (Selinger & Veen 1999; Sloman 2001; Rosenburg 2001), it can be conceived as a learning experience utilizing electronic means such as the Internet, a mobile phone or telephone, television, radio, and all of which can electronically or virtually connect an individual to information for knowledge development (Collis 1996; Guri-Rosenblit & Gros 2011; Salmon 2000, 2004; Selinger & Veen 1999).

Most of the existing models of e-learning are based only on formal education (Collis & Moonen 2001; Salmon 2000, 2004; Meredith & Newton 2003). In most cases, e-learning is conceptualized around computers and the Internet, and for institutional/organizational or professional purposes or for formal education (Vargas & Tian 2013; Liaw 2006; Ravenscroft 2001; Brown & Charlier 2013). As a result, prevailing models of e-learning can be argued to be less appropriate for informal ways of learning in developing countries where low-tech ICT options such as mobile phones, television and radio are found socially embedded, in comparison to high-tech ICT options, such as computers and the Internet (Heeks 2008).

Rural people in Bangladesh usually learn about lives and livelihoods through informal learning opportunities in action or through observations, with the help of local people (Ahmed 2004; Khan 1997; Paris *et al*. 2005). This approach towards learning through informal means is underpinned by the collectivist rural realities in Bangladesh (Deci & Ryan 2008; Devine *et al*. 2008; Diener & Diener 1995; Diener *et al*. 1995). It is argued that innovative technological means can effectively support learning by doing, using, and interacting, particularly with the help of ICT (Arrow 1962; Bof 2004; Jensen *et al*. 2007; Lundvall & Johnson 1994; Rao 2011). Therefore, it can be similarly argued to be valid for e-learning. However, in Bangladesh, e-learning has mostly been adopted to foster formal learning and usually for the educated people (Grönlund & Islam 2010; Islam & Selim 2006; Karim, Mina & Samdani 2011; Khalid & Nyvang 2013; Mridha *et al*. 2013, September; Walsh 2011, July; Walsh *et al*. 2013). This limited utilization of e-learning is deeply-rooted in the urban experience as it usually involves high-tech ICT options, such as computers and the Internet (Fors & Moreno 2002), and uptake of these options are comparatively low in rural areas (BBS 2015). As a result, current approach towards conceptualizing e-learning as a means of formal learning for educated

people might eventually make high-tech ICT based e-learning irrelevant for rural people.

The meaning of development varies with respect to time, place and the person or institution attempts to define it (Chambers 2004). Hence, developing a universally accepted concept of development is a contested endeavor (Avgerou 2010). Development, in a general sense, is about making a better world for those living in poverty (Chambers 2004). UNDP develops Human Development Index to measure development and frames it as "an enabling environment for people to enjoy long, healthy and creative lives" (UNDP 1990, p9). Some emphasize the role of economy and consider development to be about utilizing productive resources to improve living conditions of those living in poverty (Peet & Hartwick 1999). However, Sen (1999) emphasizes that notions of inequalities should be considered beyond the domains of economy to address development. Sen conceptualizes development from a broader perspective, arguing that development is "a process of expanding the real freedoms that people enjoy" (Sen 1999, p3). He defines development as "enhancement of human living and the freedom to live the kind of life that we have reason to value" (Sen 2006, p35). He considers freedom as central to the process of development (Sen, 1999). He argues that freedom is not only the end result of development, but also one of the principal means of achieving development.

In a broader sense, which I adopt for this research, development is seen in terms of the freedom an individual can have in availing a state of being or doing s/he values to pursue in a given society (Sen 1999). I use Sen's (1985) capability approach framework to interweave these theoretical underpinnings around the related concepts of development while conceptualizing e-learning as a means of achieving developmental outcomes. According to Sen (1985, 1992, 1999), capabilities are the substantive freedom a person enjoys in choosing how she/he wants to live a lifestyle that she/he values. Sen (1992) emphasizes freedom, instead of the means to achieve that freedom. Sen's concept of capability is further taken forward by Nussbaum (2011) who identifies a number of specific capabilities and suggests inclusion of migration, Internet and global warming in the capability list. In this era of pervasive digital technology, this is also reflected by the 'Digital Bangladesh by 2021' campaign of the Government of Bangladesh (GoB) (GoB & UNDP 2010). Therefore, electronic means to aid achievement of freedom of learning can thus be associated with development for those in need for development supports.

Development scholars argue in favor of informal means of learning despite blurred boundaries between formal and informal learning (Coombs & Ahmed 1974, Hager & Holliday 2009). Learning is a fundamental step in the development of knowledge required for developmental outcomes (UNDESA 2015). Informal ways of learning help to acquire and develop knowledge, skills, attitude and insights from day-to-day experiences and from exposure to different environments (Coombs & Ahmed 1974). These informal approaches include agricultural extension and farmer training programs, adult literacy programs, and various community programs in the areas of health, nutrition, family planning and cooperatives (Coombs & Ahmed 1974). It is asserted that learning can promote good health practices, improved agricultural productivity, off-farm employment opportunities, gender equality and poverty reduction, all of which have implications for developmental gains (Waage *et al.* 2010). In the sustainable development goals, learning, along with education, is emphasized as a means of development, particularly in the form of lifelong learning, to offer people with opportunities to develop knowledge and skills (UN 2015). Although formal education is prioritized by the UN (2015) to ensure empowerment and human capital at individual level, it has also been criticized for failing to address the issues around development in an effective manner (Cohen 2006; Waage *et al.* 2010).

In rural Bangladesh, access to formal learning opportunities through educational institutions, government institutions, and different project-based initiatives are challenged by barriers such as rural people's labor-intensive lifestyle, poor economic status, and persisting patriarchy or male dominance (Cain *et al*. 1979; Chowdhury 2009; Kabeer *et al*. 2011; Mitter & Ng 2005; Muzareba 2017; Walby 1990). This reality implicates an unmet need for convenient informal learning opportunity for rural people which they can access on demand basis and irrespective of their economic condition and gender. Given the coexistence of pervasive digital technology in Bangladesh and patronization of movement for digitization from the GoB, this research is an attempt to address this unmet need of rural people in Bangladesh and devises a means to offer freedom of learning that can enable them to uplift their quality of life.

2 Objective

The specific objective of this paper is to extend the predominant conceptualization of e-learning. It aims at demonstrating the ways e-learning could be reconceptualized as a means of gaining developmental outcomes for the rural poor in Bangladesh. It also aims at scoping out avenue to challenge the predominant conceptualization around suitability of e-learning for formal education and its appropriateness for educated people (Brown & Charlier 2013; Collis & Moonen 2001;

Liaw 2006; Meredith & Newton 2003; Ravenscroft 2001; Salmon 2000, 2004; Vargas & Tian 2013).

3 Methodology

I took a bottom-up approach in conceptualizing the developmental aspects of e-learning to develop my proposition on the ground realities. I adopted an interpretivist approach as I examined meanings those living in poverty in Bangladesh attach to e-learning with regard to their sense of quality of life. To understand how the practical framework of e-learning in ICT4D initiatives operated in different contexts, I used a qualitative case study approach and selected three cases for study. All the three underlying projects of the three cases are well-known to the global ICT4D communities. The case locations include Kushtia and poverty affected northern regions of Gaibandha and Rangpur. While there exist similar structural opportunities for learning, offered by GoB and NGOs through academic institutions and agricultural extension programs in these three locations, rural people have limited scopes for informal learning and access to those are constrained by socioeconomic realities. Only a few inhabitants can have access to agricultural extension officers when they need to develop new knowledge in agriculture, and thus the majority are left confined to local knowledge and learning with the help of neighbors. Existing heath learning programs in these three locations are also inadequate, and time poor labor-intensive lifestyles limit rural people's access to those. In the absence of structured informal learning provisions from GoB, rural people can only enjoy passive learning as most of the government and NGO initiatives are designed to offer services not means of learning to develop knowledge. In less agrarian Kushtia, educated youth are deprived of opportunities to learn computing skills of high commercial value, because even tertiary level technical education is not enough to make them employable in global technology market.

The underlying ICT4D initiatives of the cases focus on health, agriculture, and crowdsourcing (getting online communities contribute to collective intelligence (Brabham 2013)). Although interview was main approach to data collection, I also used focus group discussion (FGD) and observation during six months of field work. These three approaches offered a rich qualitative understanding of the underlying phenomenon (Bryman 2016; Yin 1994). I conducted 18 in-depth interviews with project participants and 44 semi-structured interviews with government officials, local opinion leaders, project officials, and members of knowledge communities including academicians, experts and professionals in the areas of development, agriculture, health, ICT, gender, microfinance, and policy. I conducted 12 FGD sessions with project participants and observed project participants' direct and indirect interactions with ICT and with their contexts. I adopted an interpretivist approach, and hence I developed an effective relationship with my respondents particularly the project participants. My command over respective local languages assisted me to sense situated realities. These ethnographic senses helped me to understand and interpret rural people's meaning-making. I adopted a thematic data analysis technique to identify patterns and issues to sense underlying potentials of e-learning to become a tool for development.

4 The Cases

The following section presents the three cases - the Bicycle-Women case, the Computer-Shop case, and the Internet-Freelancing case. I anonymized all the respondents and institutions involved in implementing the underlying projects to ensure privacy and minimize any resulting consequence.

4.1 The Bicycle-Women

The case promotes e-learning for rural women, and it does so by engaging local rural women as facilitators. It promotes e-learning mainly in the areas of health, agriculture and advocacy supports related to rights and entitlements. The central focus for this case is a few local educated women who were selected and then trained by Tech-Net (implementing organization of the underlying project of this case). I name these women bicycle-women. They offer different kinds of services to their group members as well as other villagers. Paid for their services, they offer basic health check-ups, such as measuring blood pressure, blood sugar and body mass, and pregnancy testing. They also offer ICT-based support, such as video calling over the Internet, Internet browsing, online job searching, online job applications, and mobile phone-based money transfers. Their services for the group members also include demonstrations of digital content. The content shares knowledge in the areas of health, agriculture, rights and entitlements. The bicycle-women offer this knowledge sharing service only to group members but free of charge. They use bicycles to reach their service users at their homes. This in itself is unusual because cycling is not a part of the cultural practice among women in rural areas. This distinctive approach is why I name these women as bicycle-women.

4.2 The Computer-Shop

In this case e-learning is promoted in the areas of agriculture, particularly for rural male farmers. This case is about the Net-farming project of Agro-Tech, a

national level consulting firm. Net-farming has been operating in different regions since July 2012. It was co-funded by: Market-Aid, a collaborative international funding initiative which promotes market oriented solutions to development issues; Phone-Com, a multinational telecommunication operator; and Agro-BD, a local conglomerate which produces agricultural commercial products including seeds, chemical fertilizers, pesticides and insecticides. Agro-Tech involved ten computer-shops from ten different regions to implement Net-farming. These computer-shops are the central focus of this case. I selected three computer-shops at three different locations where Net-farming was operating. Among these three, two (Com-Rang, PC-Rang) were located in Rangpur and one (Gai-CShop) in Gaibandha.

These computer-shops have been facilitating access to an online repository (collection of information in text and image formats stored on Internet) of agricultural knowledge managed by Agro-Tech. To link local farmers with this online knowledge repository, Agro-Tech employed male facilitators for the computer-shops except in the Com-Rang, where the technopreneur (entrepreneur who deals in internet based business) needed to play the role of both computer operator and the facilitator. Technopreneurs of Gai-CShop and PC-Rang worked as respective computer operators. Facilitators were employed to contact local farmers to enquire about their agricultural problems and offer free consultation services. The technopreneurs used to access the online knowledge repository to share agricultural knowledge with respective facilitators. However, since when the facilitator support was withdrawn after funding from Market-Aid ended in mid-2013, all three technopreneurs had started playing the roles of both computer operator and the facilitator.

4.3 The Internet-Freelancing

In this third case, use of e-learning is promoted in developing skills in the areas of web programming. It does so, in order to encourage the ICT enthusiasts taking up the Internet freelancing opportunities on the online market places to earn money. This case includes personal initiatives of a computer enthusiast named Raisul. His life experiences and his initiatives illustrate how e-learning, as a means of learning and developing knowledge, can minimize institutional dependencies and can support socioeconomically disadvantaged individuals to become Internet freelancers and graduate from their poverty situations.

Raisul, who is known as an expert Internet freelancer, provides Internet freelancing enthusiasts with required skills support, particularly in the areas of web programming. He promotes these skills development through e-learning by providing text and real-life video contents on web programming in native Bengali language. Majority of the activities around his initiatives are managed by Raisul himself, except the on demand technical knowledge support around web programming, in response to learners' queries, which is mostly provided by expert Internet freelancers who use his content. These expert freelancers are virtually connected and offer voluntary supports to complement the e-learning experience of users of Raisul's content. Both male and female, irrespective of their location, could develop web programming-based Internet freelancing skills and gain considerable economic returns.

5 Study Findings

A brief discussion of my study findings is presented below.

- Rural people rarely used e-learning in its existing forms but were keen to adopt e-learning, if their expectations were incorporated in it's design.
- Through facilitator supported e-learning, only a few could learn effectively which were attributed to the use of animated content that they did not prefer for learning, project defined topics which made the contents less contextually meaningful, involvements of facilitators they did not trust for knowledge development.
- Existing e-learning framework worked as a source of information for rural people rather than enabler of knowledge development. They did not consider problem solving based services as learning opportunities.
- ICT skilled educated people could learn and develop skills in web programming effectively and many of them started earning foreign currency afterwards. Gender, time and economic poverty, and location could not constrain their learning.
- Institutional e-learning framework promoted mostly paid services rather than on-demand learning opportunities which rural people wanted. Beneficiaries expressed a lack of trust in existing facilitators and the contents, demanding teachers to facilitate.
- Managing e-learning is cost-effective when crowdsourcing is incorporated in a philanthropic manner. Providing on-demand technical support also becomes manageable.
- Withdrawal of funding support considerably affected operations of e-learning interventions.

The existing framework of e-learning pursued by ICT4D implementing institutions is presented below.

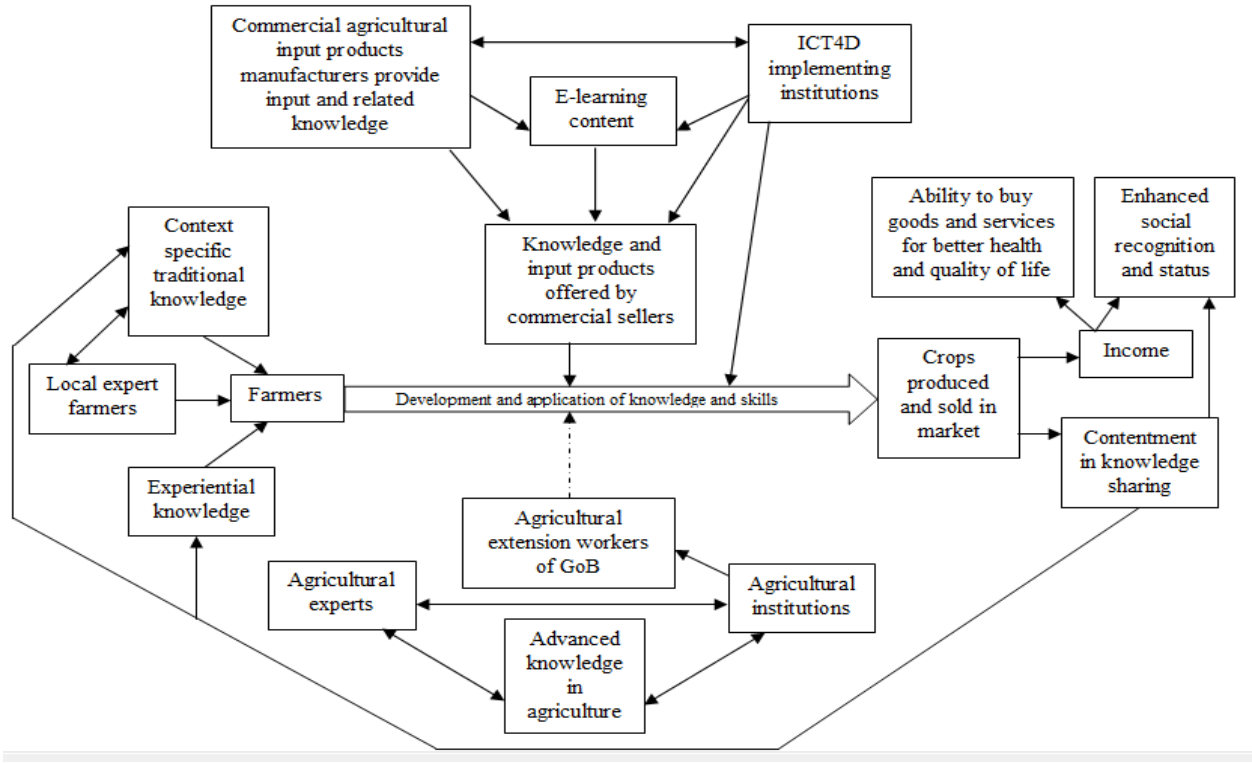

Figure 1: Current Practical Framework of e-Learning

Source: Author's Construct

6 Interpretive Analysis

Assisted or facilitator supported e-learning thus can work as a way of fostering rural people's quality of life through offering them with freedom of learning. It can help improve their quality of life, by helping them to face and deal with labor intensive lifestyles, poor economic status, gender inequalities, and limited institutional provisions for informal as well as formal means of learning. However, improving their quality of life through learning and developing awareness, skills and knowledge by means of e-learning depend on the following factors.

- Trust relationships among learners, contents, and facilitators are essential. Trusted facilitators are expected to support, when e-learning is conducted through shared access to computer and Internet.
- Adequate contextually meaningful video content that use real-life demonstrations instead of animation have substantial influence on effectiveness.
- Use of crowdsourcing, as a source of expert knowledge support and to make e-learning effective, is pivotal because ensuring on-demand expert knowledge support and developing context specific content are complex and expensive tasks.
- Effectiveness and sustainability of e-learning initiatives critically depend on consistent funding support.

In order to understand how e-learning should be socially embedded as a freedom enhancing new means for learning, it is important to consider how rural people traditionally learn to uplift their quality of life. The predominant influence in learning and developing knowledge remains active in two mainstreams – context specific traditional social learning practices and commercial supply channel linked information sharing. Agricultural extension workers of the GoB assist farmers' knowledge development process, but they are poor in number and their work hours are limited. Context specific and local knowledge exist only in practice other than in any other form to preserve for next

generations. As a result, these are in risks of getting lost due to pervasive knowledge digitization practice. Although traditional learning framework could enhance quality of life in rural realities through income, enhanced social recognition and contentment, but these achievements take place in limited extent. In addition to that, in the process of knowledge development and sharing there exists high and direct influence of commercial manufacturers (those that manufacture medicines, seeds, fertilizers, pesticides and insecticides) and respective local sellers. Existing practical framework of e-learning appears as an attempt to take first mover advantages in promoting digitization of knowledge development. It is not different from prevailing traditional learning framework where commercial manufacturers play contested roles in knowledge development, other than using ICT in developing e-learning contents (Figure 1). The scenario of knowledge communities being left out of the knowledge development process of the rural people remains the same even in the e-learning embedded approach in above Figure 1. However, this should not implicate inefficacy of e-learning in promoting freedom of learning, rather it implicates the questionable consequences of the particular way of knowledge development and the way e-learning is configured and embedded in the respective learning practices. Therefore, it is imperative to reconfigure e-learning in a way to reflect ground realities and to associate possible avenues to develop it as a tool offering freedom of learning.

7 E-Learning as a Development Tool

In development discourses, common tools for development remain cash transfer, kind support, and loan support (Barrientos 2013, Develtere & Huybrechts 2005, Fisher & Sriram 2002, Garcia & Moore 2012, Hulme, Hanlon & Barrientos 2012, Khondkar & Hulme 2000, Osmani & Chowdhury 1983, Stone 2012). While these tools offer economic empowerment and enable the poor to meet some of their necessities, these can hardly be argued to have been directly supporting skills or knowledge development to create capacity in them to enable them encounter situations of underdevelopment. The from-within capacity of knowledge and skills development can be considered as a sustainable means to encounter poverty and minimize consequences of poverty dynamics. Relating this sense with the above discussions, e-learning can be argued to play the roles of a development tool when, as per Sen (1985 & 1999), development is conceptualized as the degree of a person's freedom to do whatever s/he values to be or do, to live a life s/he values to live. Efficacy of e-learning, in providing freedom of learning with convenience and on demand access to it, transforms e-learning into a tool for development, given it is reconfigured in the way rural people demand. The following Figure 2 demonstrates rural people's expected configuration of e-learning for their developmental gains.

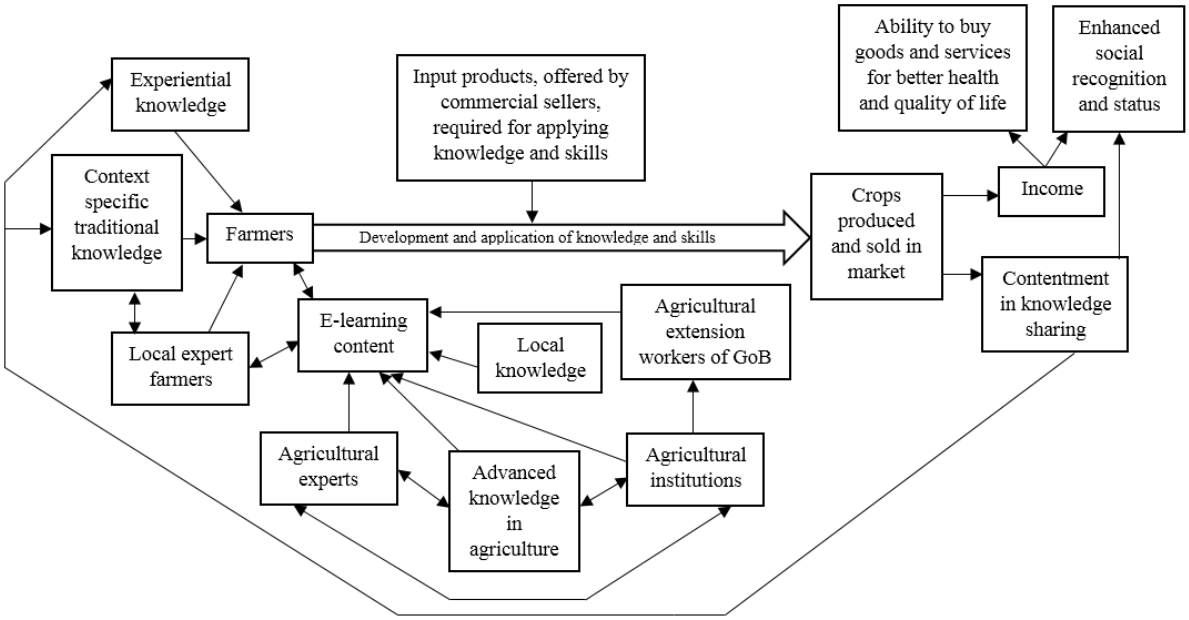

Figure 2: Proposed Model of e-Learning as a Freedom Enhancing Development Tool

Source: Author's Construct

Figure 2 implicates that e-learning can offer several options/choices to knowledge development by integrating several sources of knowledge with e-learning content. It also can incorporate local/indigenous knowledge into learning ecosystem and save from extinction. The proposed framework ensures stronger connectivity between knowledge communities and rural people through content. The enhanced options to learn from recognized knowledge sources can be considered as enhanced capability as per Sen's (1999) capability approach framework where enhanced options are considered as capability enhancement. Therefore, as per the particular configuration presented in Figure 2, e-learning can be argued to work as the new development tool in rural Bangladesh.

While e-learning can work as a development tool, it cannot achieve developmental outcomes alone because it is merely a tool not the end. Empirical data from my research suggest that trust based facilitator-supported/assisted e-learning can work as a tool for development but when required resources can be ensured, which include ICT devices, power supply, contextual contents, infrastructure, access to ICT, ICT skills, literacy and basic education, ICT skilled trusted local experts, consistent local technical support, crowdsourcing, and trust. E-learning needs to be grounded in trust relationships as it is found in common learning scenarios (Dodgson 1993). Among these, crowdsourcing is a comparatively new element, but it could be considered critical to a sustainable solution for developing adequate context specific contents in local language. Institutional capacity building in developing context specific content in local language can be argued to take long time and is expensive when compared to inclusion of crowdsourcing to serve the same purposes. In the Bicycle-Women and Computer-Shop cases, implementing institutions had to buy contents from corporate and NGO sources, which sometimes lacked adapting to specific needs. However, in the Internet-Freelancing case, expert crowd offered their hands in a philanthropic manner and contributed to developing a rich pool of content in local language, free of cost. A proper quality assurance mechanism could effectively integrate crowd and allow us to utilize its collective knowledge, intelligence and philanthropic spirits, and facilitate transforming e-learning into a development tool.

Rural people want trusted local facilitators so that they can trust in the facilitators' assisted access to e-learning, and the facilitators' knowledge and wisdom in interpreting e-learning content in local language. They prefer assisted access over developing ICT skills because they need to remain engaged in many activities in their labor-intensive time poor lifestyle and spending time and efforts to develop ICT skills is not at all their priority. They are also keen to see involvements of GoB as a trust anchor. Although they prefer assisted access to e-learning, language of the content is another factor that influence their trust in e-learning. They prefer local language over standard Bengali language to associate the content to their lived realities. However, learners' characteristics such as literacy status and profession have considerable influence over their comprehension of the content. From macroeconomic perspective, infrastructural factors such as internet coverage and speed have strategic influence over successful transformation of e-learning into a development tool. Given that GoB do not have any development focused e-learning initiative, funding support is another key factor to establish e-learning as a development tool.

8 Conclusions

Findings of this research indicate that e-learning can foster rural people's developmental gains by offering them freedom of learning about lives and livelihoods. In the process of learning and developing awareness, skills, and knowledge, e-learning can help them overcome a range of challenges they face. These include their hectic and labor-intensive lifestyles, economic poverty, gender inequalities, and limited institutional provisions for formal and informal means of learning. However, certain vital factors such as access to ICT, trust, local support, content, and funding, need to coexist for e-learning to work effectively and to be accepted as a means of learning by rural people. In prevailing rural sociocultural context, e-learning could be effective as a development tool when a trusted local facilitator is involved to offer assisted e-learning opportunity. The trusted local facilitator can assist rural people with access to e-learning, making sense of the content, and with trusted access to new knowledge, to enable them to make informed approach towards accepting e-learning as an integral part of their learning practices. However, it needs to develop local level capacity building in ICT and to integrate existing ICT experts, perhaps through crowdsourcing, to develop a sustainable setup for e-learning to work effectively. Government and development partners should take necessary steps and promote interdisciplinary research initiatives to effectively transform e-learning into a new development tool which can address broader inequality through digital inclusion.

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