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ADAPTING STRUCTURATION THEORY AS A COMPREHENSIVE THEORY FOR DISTANCE EDUCATION: THE ASTIDE MODEL

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Abstract

Distance Education (DE) theorists have argued about the requirement for a theory to be comprehensive in a way that can explicate many of the activities associated with DE. Currently, Transactional Distance Theory (TDT) (Moore, 1993) and the Theory of Instructional Dialogue (IDT) (Caspi & Gorsky, 2006) are the most prominent theories, yet they still do not represent a unified and comprehensive theory for DE. This paper provides a review of the existing literature on DE theories and identifies potential gaps in theorising distance education. Building on Giddens' (1984) work, an innovative approach to theorising DE is proposed through the conceptualisation of the *Adapting Structuration Theory In Distance Education (ASTIDE)* model as a means to explicate DE operations and practices at the institutional and national/international level. It also presents evidence, from a larger study, of the necessity of a comprehensive model such as the ASTIDE constructed through an investigation into the DE systems of developing and developed countries.

Abstract in Bangla

দূরশিক্ষণ সম্পর্কিত বহুবিধ কার্যাবলী ব্যাখ্যা করতে পারে এমন একটি পরিপূর্ণ থিয়োরির দাবিতে সংশ্লিষ্ট তত্ত্ববিদরা মতামত দিয়েছেন। বর্তমানে ট্রানজ্যাকশনাল ডিস্টান্স থিয়োরি (টিডিটি) (মুর, ১৯৯৩) এবং থিয়োরি অফ ইন্সট্রাকশনাল ডায়লগ (আইডিটি) (ক্যাসপি ও গরস্কায়, ২০০৬) তত্ত্বদুটি সবচেয়ে প্রসিদ্ধ, যদিও তারা এখনো একটি সমরূপী এবং পরিপূর্ণ দূরশিক্ষণ থিয়োরি হিসাবে প্রদর্শিত হয়নি। দূরশিক্ষণ বিষয়ে বিরাজমান তত্ত্বগুলো পর্যালোচনা করে একে তাত্ত্বিক ভাবে সংজ্ঞায়িত করার নিরিখে এই গবেষণা নিবন্ধটি সংশ্লিষ্ট সম্ভাবনাময় অব্যক্ত বিষয়গুলো সনাক্ত করেছে। প্রাতিষ্ঠানিক এবং জাতীয়/আর্ন্তজাতিক পর্যায়ে দূরশিক্ষণের কার্যপ্রণালী এবং ব্যবহারবিধি ব্যাখ্যা করতে গিডেন্স (১৯৮৪) এর কাজের উপর ভিত্তি করে একে তাত্ত্বিক ভাবে সংজ্ঞায়িত করার জন্যে 'এডাপ্টিং স্টাকচারেশন থিয়োরি ইন ডিস্টান্স এডুকেশন (অ্যাস্টাইড)' নামে একটি সৃজনশীল মডেল এখানে প্রস্তাব করা হয়েছে। এছাড়া বড় গবেষণার অংশ হিসাবে এটি একটি পরিপূর্ণ তাত্ত্বিক মডেল যেমন অ্যাস্টাইড এর প্রয়োজনীয়তার পক্ষে প্রমাণ উপস্থাপন করেছে যা কিনা উন্নয়নশীল এবং উন্নত দেশগুলোর দূরশিক্ষণ ব্যবস্থার উপর অনুসন্ধানের মাধ্যমে গঠিত হয়েছে।

Keywords: Distance education, Structuration Theory, TDT, IDT, ASTIDE.

Introduction

Due to the continuous changes occurring within current learning processes, educators and instructional designers face a challenging task to produce meaningful and demanding learning experiences for the diverse body of learners currently engaging with formal education (Kop & Hill, 2008). Behaviourism, Cognitivism, and Constructivism, are three of the main learning theories guiding and supporting elements behind current educational thinking and application (Baruque & Melo, 2004). According to Ertmer and Newbie (1993), acquisition of introductory knowledge is supported by approaches from behaviourists as well as cognitivists, while Jonassen, Davidson, Collins, Campbell, and Haag (1995) argue in favour of a transition to a constructivist approach where learners are required to solve more complex problems and obtain a high level of thinking skills. Siemens (2005) claims that during the period in which these three traditional theories were developed, "learning was not impacted through technology" (p.1), and thereby proposes connectivism as a learning theory of the digital age. Downes (2007) argues that

knowledge is not just that which is delivered via a pre-packaged curriculum but rather distributed across a network of connections. This implies that learning consists of the ability to construct and traverse those networks. These learning theories prove useful in conceptualising DE initiatives such as Massive Open Online Courses (MOOCs), which deliver higher education to the doorsteps of people through the Internet, particularly in developed countries (Dillahunt, Wang & Teasley, 2014). According to Rodriguez (2012), the connectivist model of MOOCs (c-MOOCs) was built on the principles underpinning connectivism, whereas the institutionally oriented model (x-MOOCs) is based on cognitive-behaviourist pedagogy.

Although learning theories appear to be useful in defining aspects of distance education such as the conceptualisation of MOOCs, this paper provides a review that extends beyond general learning theories to instruction, developmental aspects, policies and practices, student success and retention, and technological perspectives. Altogether, this provides a basis for the development of a comprehensive theoretical model for DE, which can be used as an analytical tool to address relevant DE issues.

Literature Review

Since the 1990s, a number of theories relating to distance education have been proposed (Gorsky, Caspi & Chajut, 2008; Moore, 1993; Moore & Kearsley, 2005; Saba & Shearer, 1994). For example, Moore's (1993) Transactional Distance Theory (TDT) comprising three variables of structure, dialogue and learner autonomy, attempts to determine how the transactional distance (misunderstanding between the instructor and the learner in terms of inputs) increases or decreases through the interaction of these variables. Shearer (2009) explains TDT in terms of, "as dialogue increases, transactional distance decreases, and conversely, as structure increases, dialogue decreases, and transactional distance increases" (p.1). According to Moore (1993), "the greater the structure and the lower the dialogue in a programme, the more autonomy the learner has to exercise" (p.27). TDT therefore implies the more learner autonomy, the less dialogue, which eventually increases transactional distance.

Gorsky and Caspi (2005a) and Shearer (2009) identified two major drawbacks of TDT. First, constructs of the theory are not operationally defined and its variables do not link with learning outcomes and therefore compromise construct validity (Gorsky & Caspi, 2005a; Shearer, 2009). While information and data supported the theory to a degree, the research has tended to lack construct validity, substantial reliability, or both, and the standard propositions of TDT have never been fully validated or supported by empirical studies and their findings (Gorsky & Caspi, 2005a). Second, the place of autonomy is not clear and often contradictory since having a high level of learner autonomy, an individual is able to have low structure as well as low dialogue but still be able to have low transactional distance (Saba & Shearer, 1994; Shearer, 2009), directly contradicting Moore's theorisation. Based on these challenges, it was suggested that TDT, through being reduced to a single proposal (dialogue increases, transactional distance decreases), could not be considered a theory but rather a tautology (Gorsky & Caspi, 2005a).

In response to the challenges relating to TDT, Caspi and Gorsky (2006) proposed the Theory of Instructional Dialogue (IDT), which highlighted that, "first, every element in an instructional system is either a dialogue or a resource which supports dialogue, and second, dialogues and learning outcomes are correlated" (p.736). According to Gorsky et al. (2008), IDT entails two types of dialogue or interaction – intrapersonal and interpersonal and the associated resources are also of two types – human resources and structural resources. The theorists argue that IDT has overcome the limitation of Moore's TDT and claim it as valid not only in ideal conditions but also in empirical settings (Gorsky & Caspi, 2005a; 2005b). Yet while both theories (TDT and

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IDT) have been offered as global theories relating to distance education, this not been substantiated, for a number of reasons, as explained in the subsequent sections.

Limitations in existing DE theories

To begin with, both TDT and IDT relate specifically to instruction, which although important, can be considered as only part of a broader theory (Aktaruzzaman, 2014). For example, questions pertaining to curriculum (what subjects should be taught and how much time should be devoted to each?), delivery method (whether the courses will be provided online, face-to-face or blended mode?) and quality assurance (what measures are necessary to ensure quality?) are not covered by these theories. As the answers to these questions are provided by associated links with DE systems, a broader theory is required to explicate the entirety of the situation.

A second consideration is that DE has to be examined with respect to developmental studies in order to be successful in the ICT for Development (ICT4D) field, which is crucial, particularly in developing countries (Heeks, 2008). The inclusion of developmental studies will assist policy makers understand where modern technologies fit into development processes, paradigms and structures. It can also guide posthoc activities like impact assessment of ICT4D projects, as well as prehoc activities that seek to realise needs analysis, project design, and implementation of theory into practice (Unwin, 2009).

Third, TDT and IDT theorists have not addressed the policies and practices that underlie the DE system. Gokool-Ramdoo (2009) and Gulati (2008) argue that policy development at the institutional and national level is the key to a sustainable and effective distance education framework. However, their interest in developing policies and practices on the basis of decreasing transactional distance associated with Moore's TDT theory is not empirically valid and often contradictory to itself (Gorsky & Caspi, 2005a). Although IDT appears to be technically sound, no studies have been conducted using the underlying assumptions of IDT to encompass the field of policies and practices pertaining to DE.

A fourth aspect relates to the core ideology of these theories, which is centred in interaction or dialogue, and therefore limited to being two dimensional – student to learning resources and if required, student to peers or teachers or vice versa, no matters how many times and ways they communicate (Gorsky et al., 2008; Moore, 1993). However, the key concern for DE in both developing and developed countries is student success, particularly in terms of retention rates (Simpson, 2013; Tresman, 2002). This issue cannot be readily addressed using this conventional two dimensional interaction mentioned in the instructional theories such as IDT or TDT.

The fifth challenge relates to the role of technology, which is not explicitly defined in either TDT or IDT. The importance of old technologies in DE and the concomitant impact on individual and society cannot be denied. Furthermore the implications of new technologies need to be assessed before deployment (Tinio, 2004). A large number of DE universities in developing countries, including Bangladesh use 2.5th generational DE (Rashid & Rahman, 2010), whereas DE providers such as the Open University UK have integrated recent technologies to support learning (Gourley & Lane, 2009). In essence, the varied levels of technological issues in DE are not effectively covered by either TDT or IDT.

In addition to these constraints, most of the perspectives relating to DE provision in developing countries tend to be underpinned by sociological rather technological parameters. Of particular, importance is the associated social value of DE and recognition of DE programmes and graduates (Aktaruzzaman, 2014). Within TDT and IDT, there is no consideration of sociological philosophy, including providing avenues for answers to questions such as, what constitutes society, how society is organised, or structural changes like whether human agency is subdued to

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structural forces? Consideration of these underlying assumptions and beliefs is necessary for the development of a solid foundation of a theory, which is absent in both TDT and IDT.

Methodology

Part of the research described in this paper involved the evolution of the ASTIDE model and examination of its necessity in empirical settings, which was conducted through library research (Findlay, 2007) and qualitative case study methodology (Yin, 2014) respectively. According to HL WIKI International (2014), "library research is defined as the systematic study and investigation of some aspect … where conclusions are based on the analysis of data collected in accordance with pre-established research designs and methodologies". Existing literature on DE theories were reviewed and potential gaps identified in relation to theorising DE, with the ASTIDE model being proposed as the basis for the development of an all-inclusive DE model. To examine the necessity of a comprehensive model such as the ASTIDE, qualitative case study methodology was utilised to elicit rich insights into individuals' experiences of the world and to look at complex perceptions of the community within its real-life context (Yin, 2014).

Case studies involving participants of DE systems in three different countries of the world formed the basis of the overall study. Interviews were conducted with fifteen senior academics and directors from Open Universities Australia (OUA), Bangladesh Open University (BOU) and the Open University UK (the OU UK), forming a Senior Reference Group (SRG). Additionally, four focus group discussions were conducted with 20 participants from the Bangladeshi community associated with BOU, including students, teacher-tutors and informed members of the public. Data from the focus group and individual interviews were analysed in NVivo 10, using constant comparison methods to extract patterns and emergent themes (Patton, 2015). In order to examine the validity of the ASTIDE model in empirical settings, this paper reports on part of the study, which involves specific instances of the participants' perceptions of different aspects of the DE system. Representative quotes were drawn from the discussion after repeated reading and re-reading of the data to support the argument.

Findings and Discussion – The ASTIDE model

Giddens (1984) describes the structural properties of a social system as the set of enacted rules and resources that mediate social action through three modalities - interpretive schemes, facilities and norms. According to Giddens (1984), actors in their recurrent social practices draw on their knowledge of their prior action and the situation at hand, the facilities available to them (e.g., technology, land, buildings), and the norms that inform their ongoing practices. In this way, actors apply such knowledge, facilities, and habits of mind and body to structure their current action. In doing so, they recursively instantiate and thus reconstitute the rules and resources that structure their social action (Orlikowski, 2000). Social structure and human agency are closely related and Giddens (1984) refers to it as "duality of structure" (p.29), which implies the nature of structure as both medium and outcome in the reproduction of practices.

Giddens' (1984) Structuration Theory (ST) was first built upon by DeSanctis and Poole (1994) and then by Orlikowski (2000), to address early technology and its related issues. This was followed by Halperin and Backhouse's (2007) extension of ST to shape it as an effective analytical tool for conducting empirical research. Now this current study is building on those previous adaptations but more importantly, it aggregates a number of extensions/adaptations of Giddens' (1984) work related to DE issues and challenges in order to establish itself as a comprehensive theoretical model for distance education. The required extensions of ST were basically determined by the potential gaps in the literature and then supported by the preliminary findings of the focus group discussions conducted with the Bangladeshi community. A wide range of issues and challenges related to DE in developing countries particularly in Bangladesh

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were identified. These emerged as fitting within a number of major categories including instructional system, social recognition and job opportunities through development, policies and practices, student success and retention, and technological perspectives. The ASTIDE model then provided a theoretical framework for these different concepts to fit within the triads (T1, T2, T3, T4 and T5) of ST. As illustrated in Figure 1, concept of instruction is adapted in the 1st triad (T1: signification, interpretive scheme, communication), development in the 2nd triad (T2: domination, facility, power), policy in the 3rd triad (T3: legitimation, norm, sanction), student success in the 4th triad (T4: structure, modality, interaction) and technological perspectives in the 5th triad (T5: interpretive scheme, facility, norm). Due to the interdependency of human agency and social structure in ST, these triads are not considered separate but interlinked and often they were used in combination to explain different related processes. However, the ASTIDE model is not a direct extension of ST but rather it is a collection of extensions of ST related to DE, which were established by other theorists and educationists (Arts & van Tatenhove, 2004; Halperin & Backhouse, 2007; Subotzky & Prinsloo, 2011). The following section presents an explanation of the adaptations underpinning the conceptualisation of the ASTIDE model.

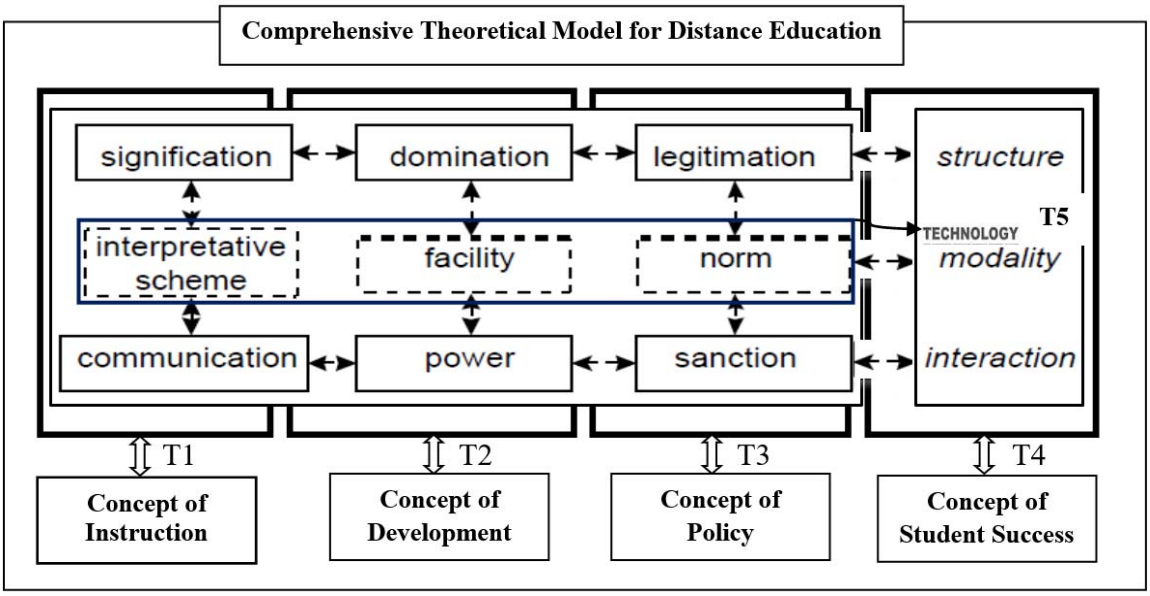

Figure 1. ASTIDE Model (Source: adapted from Giddens, 1984, p.29)

Adapting the Concept of Instruction into the 1st Triad of ST

Interpretive scheme, the first modality of structuration, entails the actors' assumption and beliefs, or what Giddens (1984) terms 'stocks of knowledge', that they draw upon whenever using the technology and/or some of its properties, or not using the technology at all. These individual beliefs and assumptions are not generic but rather practice specific (Orlikowski, 2000). Halperin and Backhouse (2007) propose a three-layered framework to capture the interpretive scheme and relate it to the technology use in a practice-specific domain – "a) underlying beliefs about the practice; b) assumptions about effectiveness in the practice; c) perceived role of the technology in accomplishing the practice" (p.10). In the second dimension of the three layered framework focusing on learners' assumptions about the characteristics of effective learning practices, Halperin and Backhouse (2007) describe two types of interaction underlying effective learning. These are, interaction with others (peers or teacher-tutors) and interaction with resources, which coincides with the two types of dialogue – intrapersonal and interpersonal mentioned in IDT (Gorsky & Caspi, 2005b).

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Halperin and Backhouse (2007) argue in the first dimension of the layered framework, that simple memorisation will serve if someone believes that knowledge is not critical but rather simple and there is no need of using deeper processing approaches. It coincides with the concept of IDT where students interact with the subject matter in the case of low difficulty level by means of given structural resources, referred to as intrapersonal dialogue rather than attempt to interact with peers or teachers synchronously or asynchronously (Gorsky & Caspi, 2005b). Again, in the second dimension, Halperin and Backhouse (2007) propose two variations in the interaction with others, that is, structured and focused, and spontaneous and casual, which resembles the subject matter and non-subject matter oriented interpersonal dialogue of IDT (Gorsky et al., 2008) respectively. The third dimension of the framework covering the perceived role of technology in learning practice is not contradictory with the concepts of IDT.

In summary, the communication aspect in human agency draws on interpretative schemes in order to assist in making sense of interactions (Anderson, 2010); similarly, such interactions modify and/or reproduce those embedded interpretative schemes in social systems as meaningful structures to mediate/facilitate learning, resembling the core concept of IDT (Gorsky et al., 2008).

One of the themes emerging from the focus group discussions conducted in Bangladesh related to the need for pedagogical reform due to lack of timely course completion, recognition of the unsuitability of traditional teaching methods in DE, and high levels of dependency on teacher-tutors. Yet sixteen of the twenty focus group participants expressed their support for more traditional forms of education, suggesting increased frequency of face-to-face classes, as illustrated in Figure 2. This implies that there is still an expectation of provision of traditional teaching styles within the DE environment, which requires changes in beliefs and assumptions among all the parties associated with DE.

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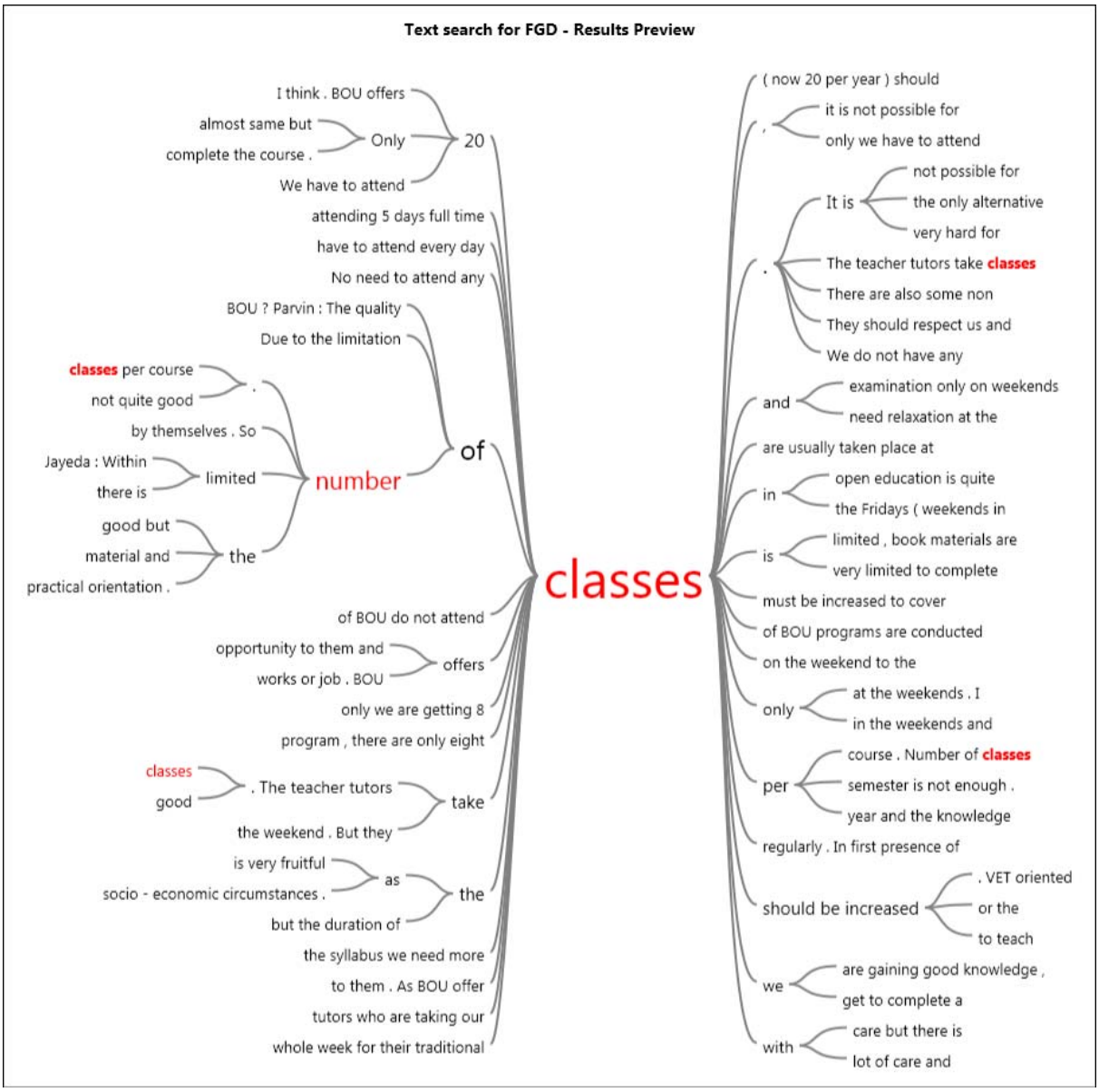

Figure 2. Text search of 'classes' in the FGD data

Giddens (1984) defines the structural changes in learning practices, which is extended for DE by the ASTIDE model focusing on its first triad, which suggests interaction between different agents involved in DE to produce meaningful structures in order to change the existing ones. As the constructs of the ASTIDE model are essentially interrelated, this scenario also suggests the need for explicit policies and practices. Giddens (1984) argues that the processes of monitoring and evaluation are all dependent on the existence of structures comparing deviations. With Bangladesh Open University, there did not appear to be any formal monitoring system in place. As such, the continuous deviations from the once set standards go unnoticed and practical consciousness through repeating actions is formed around behaviours (Wheeler-Brooks, 2009) that may not be beneficial. This was evident in the BOU practice of teaching DE, using the conventional syllabus, which had not been designed for that purpose. Therefore, it would appear that the long-established transmission structure of teacher-centred learning that is currently perceived as part of BOU programming, needs to gradually shift to an interactive structure of student-centred learning, which is inherent in the ASTIDE model.

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Adapting the Concept of Development into the 2nd Triad of ST

The 'transformative capacity' mentioned in Giddens theory (1984) refers to the capacity of human agency to make changes we need. The ability to make a difference can be understood from a more philosophical angle, implying that even the most powerless person on earth has some ability to make a difference (Halperin & Backhouse, 2007). From this point of view, the block 'power-facility-domination' of the duality of structure proposed by Giddens (1984) correlates with a number of contributions made by previous studies relating to the capacity of individuals to be facilitative in their development. For instance, Nobel laureate Sen's (1999) work on 'freedom as development'; the human development approach offered by Sein and Harindranath (2004); the alternative and modernisation development perspective provided by Sein (2005); and finally the incorporation of developmental studies in ICT proposed by Heeks (2008).

The capacity to implement change by human agencies (individual or organisations as a whole) mentioned in Giddens (1984) Structuration Theory shares Sen's (1999) ideology, whereby freedom is viewed as the ends and means of development, with individuals capable of realising their potential to lead enjoyable lives. Sen (1999) claims it essential to have these primary freedoms such as economic facilities, political freedom, transparency, social opportunities and protective securities that resemble what Giddens (1984) refers to as 'facility' in his perspectives of the duality of structure. Sein and Harindranath (2004) propose the human development approach or people-centred development strategy that is about creating a society in which individuals can develop their full potential and enjoy creative, productive lives in accordance with their needs and interests, coinciding with Giddens' notion of facility. Similarly, the neo-humanism approach of Sein (2005) aiming for socio-economic emancipation, as reflected through a boat school for women and girls in Bangladesh (Mahmud, 2006), also corresponds to Giddens' ideology. Finally, both Heeks (2008) and Unwin (2009) emphasise per-poor innovation, similar to Giddens' notion, that is about offering tools and equipment to the poor to develop digital materials and services, fund their initiatives to generate new sources of income and employment, and encourage well-known stakeholders to weigh up their work. Together these illustrate, a power aspect in human agency, as facilities are invoked in order to assist the development of structures to change lives.

The importance of developing structures to assist in the life changing process was highlighted in interviews with members of the Senior Reference Group associated with BOU, who all supported the notion of integrating vocational courses within the existing BOU curriculum. Senior BOU academic Islam, explained that, "BOU has taken on the project to integrate vocational education with general education ... Our target is to do the integration at the JSC (Grade 6-8) and SSC (Grade 9-10) level and it includes the programmes of carpenting, weaving, tailoring, fish processing, etc. so that they can work in the garments and other sectors effectively and also get the opportunity to complete their education at BOU if they want". This was added to by another senior academic Mak's explanation that, "We have undertaken one project to train the garments workers. They are mostly poor females. They are very busy, they don't come to the schools. We try to include them in education and training. A special JSC programme has been designed to include this kind of people". A similar perception of the value of responsive educational programming was evident in the discussion in focus groups with Bangladeshi students, teacher-tutors and informed community members as illustrated in Figure 3.

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Figure 3. Word cloud of the FGD conducted in Bangladesh

The word cloud depicted in Figure 3 illustrates the value placed on education and employment and as such, the emphasis on incorporating practical oriented courses in the BOU curriculum suggests that long-established structural changes would be required of BOU in its institutional policies and practices (Giddens, 1984). The change process can be explained at the individual and institutional level using the underlying propositions of the ASTIDE model. From the individual perspective, it is completely based on individual agencies and their perceptions of the benefits of DE systems. The neo-humanism approach (Sein, 2005) of preparing oneself for the local job market and also Sen's (1999) idea of having freedom to make choices in one's own life were reflected in the views of the focus group participants. From the institutional perspective, political modernisation and policy innovation suggest renewal of policy making with the changing relationships between state, market and civil society, and day-to-day interactions between agents respectively (van Tatenhove et al., 2000). This perspective suggests reform of the existing theory-based curriculum at BOU such as integration of VET into the academic programme. It can assist in developing regionally focused curriculum, which has the capacity to engage more local students and produce more skilled workers locally, which is required within Bangladeshi society. However, without carefully formulated policy and its implementation, such expansion may result in poor sustainability as happened with other projects at BOU.

Adapting the Concept of Policy into the 3rd Triad of ST

The extension of Structuration Theory (ST) by Halperin and Backhouse (2007) is limited to the very basic development of policy framework such as defining formal and informal norms and different sanctioning – strong or weak. Giddens (1984) conceptualises organisation as the social system, being sets of agents nested in structures of rules and resources. Based on the duality of structure, van Tatenhove et al. (2000) have extended the policy aspect of ST by distinguishing four dimensions of an organisation – agents (coalitions), rules (norms) and resources (facilities), and policy discourse (interpretive scheme), which are essentially interrelated to explain different processes, for instance, policy coalition. Each coalition comprises a number of agents who share resources and/or interpret policy discourse within the domain of rules of process to identify and

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achieve similar policy goals (Arts & van Tatenhove, 2004). The more these interrelations of the dimensions in a process are objectified in institutional mechanisms and organisational routines, the more concrete and comprehensive policy seems to be developed. Van Tatenhove et al. (2000) suggest that the collated policies are then required institutionalisation, which is defined as, "a process of structuration and stabilisation by which policy arrangements are produced, reproduced or transformed" (p.53) within the context of long-term processes of societal and political change. The key themes of the institutionalisation process are practices derived through "agents-in-interaction" and policies emerging from "long-term structural transformations" (van Tatenhove et al., 2000, p.53). A comprehensive policy framework usually acts as interplay between existing policies, ongoing practices and future challenges that link long-term process of socio-political change with specific processes of policy design and enactment on the ground (van Tatenhove et al., 2000). Arts and van Tatenhove (2004) also suggest political modernisation and policy innovation to develop a sustainable policy framework. Therefore, Giddens' (1984) formulation of social rules does not only support the nuanced treatment of the national policy development and its derivatives like the institutional norms but also encourages policy makers to look into the specific norms and adapt them in different normative conditions.

The main objective of the larger study was to develop a DE framework for Bangladesh by examining policies and practices of BOU and collating them with those of OUA and the OU UK. The ASTIDE model supports policy coalition, which is described by Arts and van Tatenhove (2004) as, "a strategic choice by actors, aiming to achieve their goals, and therefore looking for partners with whom policy interpretations are shared and an acceptable consensus can be reached" (p.4). From an institutional perspective, it begins in the political modernisation process, which results in "different coalitions between representatives of the state, the market and the civil society at the national or at international level" (Arts & van Tatenhove, 2004, p.5). Thereafter, the collated policies are institutionalised within the context of long-term processes of socio-political changes (van Tatenhove et al., 2000), as emphasised in the proposed DE framework for Bangladesh, as outlined in Figure 4.

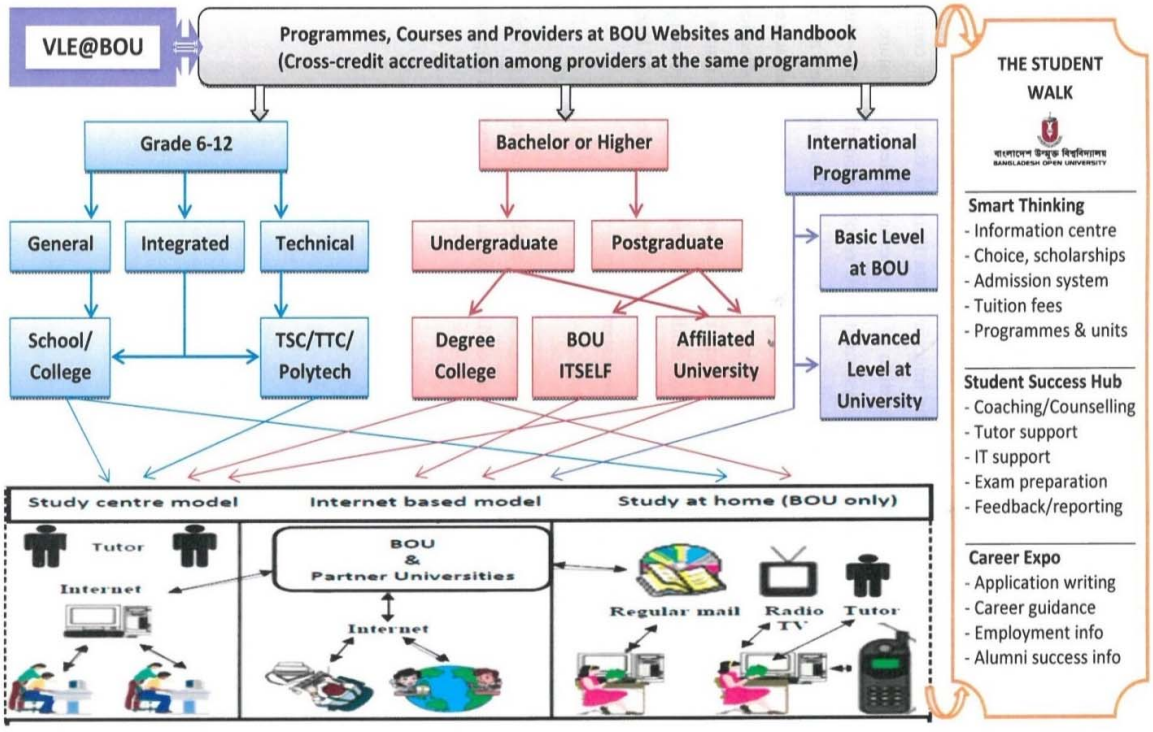

Figure 4. Proposed distributed academic operational structure at BOU

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The proposed academic structure of BOU as illustrated in Figure 4 focuses on the themes and subthemes that emerged from the discussions with the Senior Reference Group members from each of the participating institutions – BOU, OUA and the OU UK. During the research the constructs of this structure were initially selected in terms of their possible implications on DE in Bangladesh, as summarised in Table 1. According to the ASTIDE model, these collated policies then need to be institutionalised within the context of Bangladesh.

Table1: Constructs and Agents of the Proposed Academic Operational Structure at BOU

Constructs of the proposed structure	Agents of collation
A more decentralised approach with a Vice Chancellor (VC) and several Pro Vice Chancellors (PVCs) responsible for overseeing a number of portfolios.	The OU UK
Distributed features incorporating large number of public and private universities in its operation.	OUA
Single virtual learning environment irrespective of number of provider institutions.	The OU UK
Three different methods of content delivery considering the ICT setup of BOU and Bangladesh as well as diverse group of students.	BOU through local innovation (absent)
Integrated technical (VET) and general education from grade 6-12 in view of country's large informal economy and high percentage of dropouts at this period of education.	BOU through local innovation (available)
Cross-credit accreditation among provider institutions at the same programme level.	OUA
Study at home model for the unprivileged community such as large number of female garments workers.	BOU through local innovation (available)
Flexible options of study in terms of mode (online/offline), institutions (university/degree colleges/BOU itself), type of education (general/ technical/integrated).	BOU through local innovation (partially available)
International programmes (basic/advanced) based on the need of huge number of expatriate Bangladeshi workers and also international students mainly from the neighbouring developing countries such as Nepal, Bhutan, Afghanistan, Maldives, etc.	The OU UK
More dedication of BOU to quality assurance, monitoring and evaluation, research and development, building human resources through distribution student share to affiliated institutions.	The OU UK and OUA
Rigorous student support system from the admission of students up to their employment and career pathways.	The OU UK and OUA

Adapting the Concept of Student Success into the 4th Triad of ST

Subotzky and Prinsloo (2011) define success as "the outcome of the mutually influential activities, behaviours, attitudes and responsibilities of students and the institution, which are viewed in the sociological perspective of situated agents" (p.184). As instructional theories focus on student-learning materials and student-peers or teacher interaction, it cannot define explicitly the interaction of the student and institution. The interaction in Giddens (1984) theory is centred on the structure-agency perspective and is not limited to being two dimensional as is the case of TDT and IDT. Giddens (1984) theory, therefore can define the invisible link of student and institution that contributes to the success and retention of students in DE. The mutual space of interaction between student and institution is defined as the 'the student walk' that begins with pre-registration and proceeds through application, admission, teaching and learning, assessment and evaluation, student support, graduation and subsequent participation in the community and labour market (Subotzky & Prinsloo, 2011). If sufficient mutual knowledge of relevant academic, non-academic and administrative processes is acquired and translated into effective action at each point in the student walk, a close alignment of their activities is likely to be achieved towards

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sustained success (Subotzky & Prinsloo, 2011). It is therefore crucial for the institution to incorporate interaction at each step of the student's journey as illustrated in Figure 5.

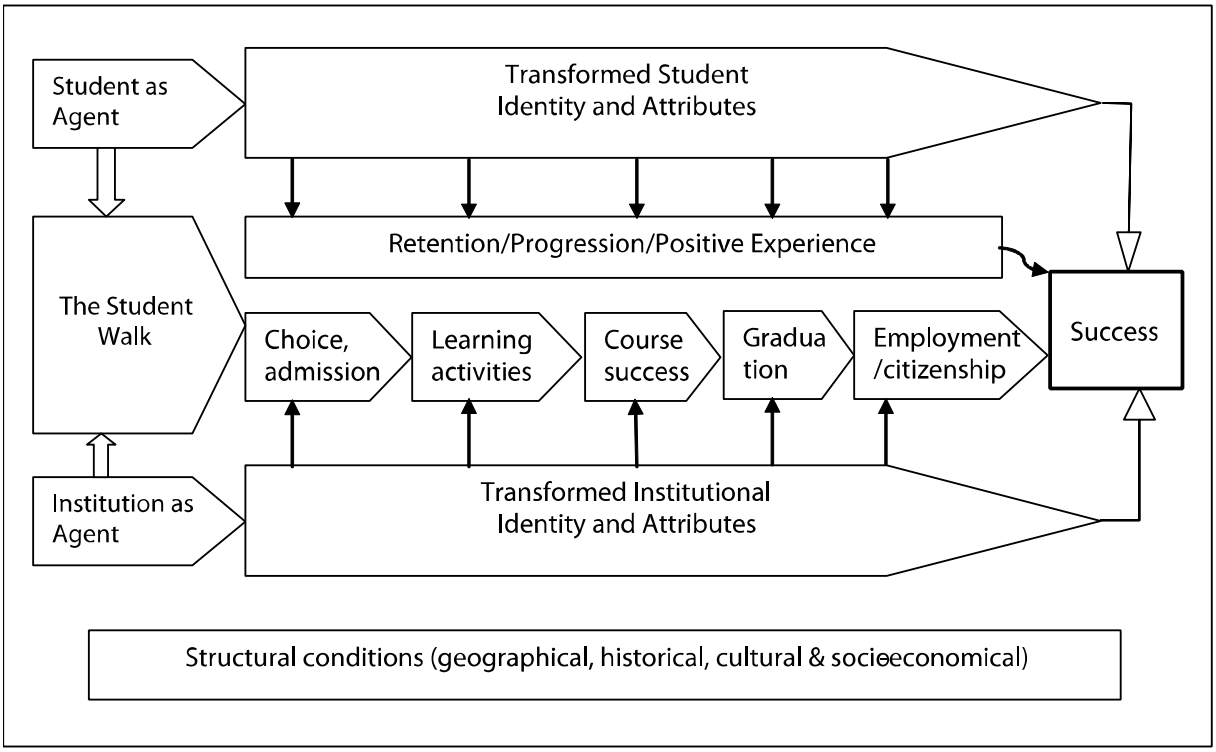

Figure 5. Increased student success through student-institution interaction in the ASTIDE model (adapted from Subotzky and Prinsloo, 2011, p.184).

Although the issue of student success and retention in distance education was not explicitly targeted in the current study, the literature reviewed indicates it as the key concern of DE institutions across the world (Simpson, 2013). For instance, the graduation rate at the OU UK is only 22% (Simpson, 2013). According to Aktaruzzaman (2014), the majority of the formal programmes (17 out of 21) at BOU had declining enrolment figures though initially they had high demand. Generally the knowledge of students regarding DE institutions is often isolated and the institutional knowledge regarding students is limited to registration information and surveys, which results in increasing dropout rates (Archer, Chetty & Prinsloo, 2014). It was interesting that in none of the focus group discussions with students in the Bangladeshi community was the need for a student support system mentioned, perhaps because of a lack of awareness of possibilities. However, careful examination of OUA and the OU UK data suggests that support systems are at the heart of their DE systems, resulting in increased student success. By incorporating the feature of student-institution interaction, the ASTIDE model can adequately address the dropout rate and associated issues related to the DE field.

Adapting the Concept of Technology into 5th Triad of ST

Giddens (1984) defines two types of resources in his structuration theory: authoritative and allocative. Authoritative resources refer to co-ordination of human activity whereas allocative resources refer to domination of materials in the natural world (Giddens, 1984). From this point of view, ICT can be regarded as both an authoritative and allocative resource since it organises the actions of human agents and is an artefact respectively (Anderson, 2010). Walsham (2002) uses Giddens' theory in a dualistic way to link between structure and human agency and argues that technology based systems encapsulate norms, coordinate and control facilities and embody interpretive schemes. These systems are deeply implicated in the key structurational constructs to

link social action and structure, thus changing or reinforcing social structures. According to Giddens (1984), "structure exists only as memory traces … and instantiated in human action" (p.377). This idea was extended by Orlikowski (2000) who suggested that structures tend to be virtual and emerge within given technologies from different situated and recursive interaction of individuals. Furthermore, DeSanctis and Poole (1994) argue that structures do not only emerge in human action interacting with technologies but also embed in advanced technologies. These studies support the principals underpinning the ASTIDE model and its applicability in explaining the technology aspects of any ICT based education such as DE.

The importance of utilising technology in education, even in developing nations without well-developed infrastructure, was evident in the perceptions of members of the Bangladeshi community participating in focus group discussions. The use of the SMS technology, mobile apps for smartphones and online access to course materials were all highlighted as valuable sources of interaction by students and informed community members, but not interestingly, by teacher-tutors. The teacher-tutors may have felt inadequately prepared to implement practices requiring high levels of technical competence. However, the social practices described by Giddens (1984) and inherent in the ASTIDE model, which produce and reproduce certain structures, require involvement of teacher-tutors having a positive attitude towards ICTs and a desire to adapt those into teaching-learning, particularly in DE. The ASTIDE model also suggests the norm for policy formulation to make practices such as ICT use in teaching-learning, recursive and progressively better. The norms include effective support and training systems for the teacher-tutors, which were apparently absent at BOU, judging by the responses from the focus group discussions.

In addition to these concepts previously adapted, most of the perspectives related to DE provision in developing countries appear to be sociological and developmental rather technological, which is integral to the ASTIDE model. The major themes emerging from the focus group discussions with the Bangladeshi community as illustrated in Table 2, reflect the focus on sociological and developmental aspects. These findings support the suitability of the ASTIDE model in distance education over the existing theories in this particular field.

All the previously discussed concepts related to DE, including adaptations of instructional design, developmental study, policy formation, student success and retention, and technology perspectives have been incorporated into Giddens' (1984) theory to form the basis of a comprehensive theory for DE conceptualised as the ASTIDE model. As this paper has demonstrated, there is little support for an explication of the diverse field of DE through the use of these concepts individually and therefore a need for an integrated all-inclusive model.

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Table 2: Findings Regarding Community Perceptions towards DE in Bangladesh

Perceptions of the community towards distance education in Bangladesh	Frequency of mention (n=20)	Related concepts
Need for integration of VET into DE programmes	10	Development
DE enhances flexibility (traditional DE flexibility)	18	Development
Need for greater technology use in DE programmes	12	Technology
Need for pedagogical reform towards interactive learning	16	Interaction
Role of tutors and their training needs	13	Development
Equal opportunities and job prospect for DE graduates Debatable issue: Good: 07, Not good: 12 and Absent: 01	19	Sociological Development
Social value and recognition of DE degrees and graduates Debatable issue: Good: 05, Not good: 14 and Absent: 01	19	Sociological Student Success
Quality of DE programmes and provisions Debatable issue: Good: 08, Not good: 11 and Absent: 01	19	Policy and Practice

Conclusion

This paper outlines part of the journey undertaken to develop an understanding of a theory relating to the increasingly popular medium of distance education as a form of educational provision. The study described within this paper developed in response to the need for a more effective way of providing education to the large population of Bangladesh. Within this paper, the existing literature on DE theories was reviewed and potential gaps identified. It is evidenced that the prominent DE theories are neither operationally defined nor capable of defining the broad DE field and associated issues. This study has adapted several key concepts related to DE into Giddens' (1984) Structuration Theory, through conceptualisation of the ASTIDE model as a rigorous and all-inclusive theoretical model for DE. Through comparing three different DE providers in the United Kingdom, Australia and Bangladesh, albeit within a sociological rather than strictly cultural framework, the ASTIDE model was outlined in this paper to ensure its explicability in a range of DE areas. While DE operates as an important sociological tool for equalising opportunities in developed nations, within developing nations it is a necessity. Therefore, it is anticipated that the ASTIDE model will provide assistance to developing countries in particular, in terms of understanding how to create greater educational opportunities for their communities through distance education.

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