



## A Model of Flexible Learning: Exploring Interdependent Relationships Between Students, Lecturers, Resources and Contexts in Virtual Spaces

John Bostock, Edge Hill University, UK

### ABSTRACT

In flexible and open models of education students and lecturers experience a virtual sense of separation that is caused by more than physical distance between students and lecturers. Transactional distance is “a psychological and communications gap, a space of potential misunderstanding between the inputs of lecturer and those of the student” created in part by the physical distance inherent to online learning (Moore 1991, p. 2). a large transactional distance such as that between geographically dispersed students and lecturers in an asynchronous, text-based, online learning environment may contribute to students’ feelings of isolation and disconnectedness, which can lead to reduced levels of motivation and engagement and consequently attrition.

When designing e-learning experiences lecturers must consider two variables that affect transactional distance: structure and dialogue. Structure refers to the flexibility or rigidity of the pedagogical methods and strategies used in an e-learning experience. Dialogue refers to the interaction between the lecturer and student during an e-learning experience. Moore does not suggest that either structure or dialogue are inherently good things. Each may be appropriate in different circumstances and a typical educational event such as a conventional lecture will, at a micro-level, move constantly between the two. Another dimension of the theory suggests that more autonomous students, being self-directed, are better able to cope with more structure while less autonomous students benefit more from greater dialogue.

This paper explores a proposed model of flexible learning which attempts to inform practitioners of the fluid, interdependent relationships between students, resources, contexts and lecturers. This helps explain and justify a reconceptualisation of the role of the lecturer and suggests how social activity is also pivotal in successful learning outcomes for students.

**Keywords:** transactional distance; flexible learning; dialogue; structure; meta-cognition.

### Introduction

Until relatively recently, education was provided in a traditional format of classroom and lecturer but the advent of online learning began and continues to transform this traditional perception of education and learning. Its origins can be traced back almost 20 years to the Dearing Report of 1997 particularly, which was pivotal in promoting wider participation, flexible learning and universal and equitable accessibility. Its recommendations have been swiftly responded to especially in terms of flexible curricula, learning and provision. It would be over simplistic to expect such flexibility to be just a matter of providing learning materials and letting students get on with it, or that all materials are self-explanatory and conducive to every type of student. Moreover that there were no technical difficulties ever to be encountered by self-motivated, self-reliant students all achieving flexibly with little or no human intervention. It is of course not so simple; despite increased accessibility in virtual terms, is it still possible to assert that this requires human intervention i.e. the physical presence of a lecturer or more able peer? When referring to human intervention or social interaction, do we necessarily mean the physical presence of others or is there a redefined concept of social interaction? Should we concentrate on the nature of that interactivity i.e. the processes of revision, discussion and debate and their application to the role of the lecturer? Can the virtual be brought to life in the same way such processes can energise the traditional classroom/group setting without the need for the lecturer’s physical presence? With these questions in mind, a critical examination of a model of flexible learning will be presented including an analysis of the reciprocal and connected relationships between students, resources, contexts and lecturers. An appreciation of the significance of social interaction and more importantly of the role of the lecturer be it physically, temporally or virtually will also be considered.

### Transactional distance

Teaching and training incorporates an element of transactional distance, a synthesised definition of which is provided here:

*Transactional distance is the space where lecturers and students accomplish the work of learning in an environment that separates them in both time and geographic distance, and also the interplay of lecturers and students in environments that have the special characteristic of being spatially separate from one another. This situation creates a cognitive space between*

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*educator and student, a psychological and communications gap, a space of potential misunderstanding between the inputs of lecturer and those of the student.* (Moore (1991 and 2007, p. 91)

There are also very useful, historical definitions which provide a backdrop to the approaches adhered to in learning and teaching. Holmberg (2005, p. 2) summarises the essence of Distance Learning (DL) demonstrating the three key aspects of “i) geographical separation of lecturer and student in space and time; ii) the control of learning by the student; and iii) the non-contiguous communication between student and lecturer mediated by technology”. It is the increased shift towards technology which has meant the need to redress its influences upon the instructional process and indeed to redefine the role of the lecturer in DL. Historically we find the roots of DL in radio and television although in the latter even the most expert lecturers were not necessarily suited to broadcasting becoming, in effect, boring talking heads never relinquishing control to the student and thereby blocking any two-way communication between lecturer and student. Increasingly more sophisticated communication technology has become available and with it the chances to exploit it in ways hitherto unconceived e.g. through email, the Internet, e-conferencing and digital media. But each technology implies the need for interaction: and in the learning process this means “interaction with content and with people” (Albers, 2012, p. 118). The importance of providing an environment in which both kinds of interaction occur can in effect minimise the barrier of geographical distance considerably. This argument is based on Moore’s (1990) theory of ‘transactional distance’ in essence a threefold formula which includes the study of interaction between students and lecturers, the structure of instructional programmes and the self-directedness of the student or student autonomy.

Firstly, Moore (1990) argues that separation in space and time leads to special patterns of student and lecturer behaviours and to an apparent psychological space between them with the potential to create misunderstandings which has been supported by Holmberg (2005) and Thomas (1995). Secondly, structure expresses the rigidity or flexibility of the programme’s educational objectives, the teaching strategies, and the capacity for differentiation, in other words the higher the structure, the lower the interaction and the lower the structure, the higher the opportunity for dialogue and interpersonal interaction. Thirdly, student autonomy is the extent to which the student rather than the lecturer can determine the objectives, experiences and evaluation decisions of the learning programme. In view of this theory and its three elements, a relationship model can be established which states that:

- i. The greater the structure;
- ii. The lower the dialogue in a programme; and
- iii. The more autonomy on the part of the student is needed.

These elements or variables are therefore relative and changeable according to the nature of the programme e.g. an i-player television broadcast would be explained by this model as it is generally one-way communication, providing little if no opportunity for dialogue and input from students. Teaching and learning are therefore potentially very flexible but their success is reliant upon a sound relationship between the qualitative variables above and the extent to which the programme acknowledges these variables. A lack of understanding of the interrelationship of these variables has led to a misguided overreliance on an otherwise excellent model of learning in terms of flexibility and efficiency. As many have argued; Student Autonomy is not just letting the student get on with it – there is a complexity which requires careful consideration’ (Bostock & Wood, 2014).

Historically, Canning supported this assertion with reference to his detailed study in technology-based learning claiming that, “The use of new technology raises the expectations of students for a more personalized system” (2002, p. 37). Within these frameworks a common and sometimes essential feature of the learning process is technology. It is through this medium that the lecturer can make his/her presence felt but the role cannot be generally described as being comparable to that of the physically present lecturer. Canning with reference to previous research comments that historically and contemporarily, Bostock and Wood (2012), Armitage (2007), Knowles (1984) and Pedler (1990) have all argued for the reconceptualising of the role to that of facilitator or enabler.

### *Transactional distance: Structure, dialogue and student autonomy*

What level of autonomy or self-directed learning must a student have to be successful in a Flexible Learning (FL) approach? Do students adhere to the structure of the learning, or do participants break away from the structure and form self-organising subgroups? Given the nature of FL and possibly a higher ratio of students to lecturers, we might assume a low level of dialogue, as defined by Moore (2007) with the lecturer. But do we actually see rich dialogic exchanges in self-organising student groups? Given the exploratory answers to the questions above, how can we determine the transactional distance between lecturers and students in FL approaches? What are its implications for adult and distance higher education?

Building on the previous section concerning geographical separation, the theory of transactional distance concerns the pedagogical phenomenon of interaction between lecturers and students, or among students themselves in the distance educational context, primarily influenced by various relationships between dialogue and structure. The structure consists of course design elements, such as learning objectives, activities, assignments and assessments, whereas dialogue refers to the meaningful communication between the pedagogical subjects (Table 1). Structure, therefore, consists of pre-prepared course materials such as links on the home page to course components, calendars and assignment due dates, readings, instructions, media presentations and overall course content. Dialogue involves meaningful, communicative interactions between the student and lecturer and among students. As depicted in Table 1, it occurs, for example, through assignment feedback, emails, discussion boards, and technology-mediated real-time one-on-one lecturing. Dialogue is therefore an important element of all teaching and learning, but in distance education it presents a challenge. In online contexts, lecturers must strive to optimise interaction between student-lecturer, student-student, and student-

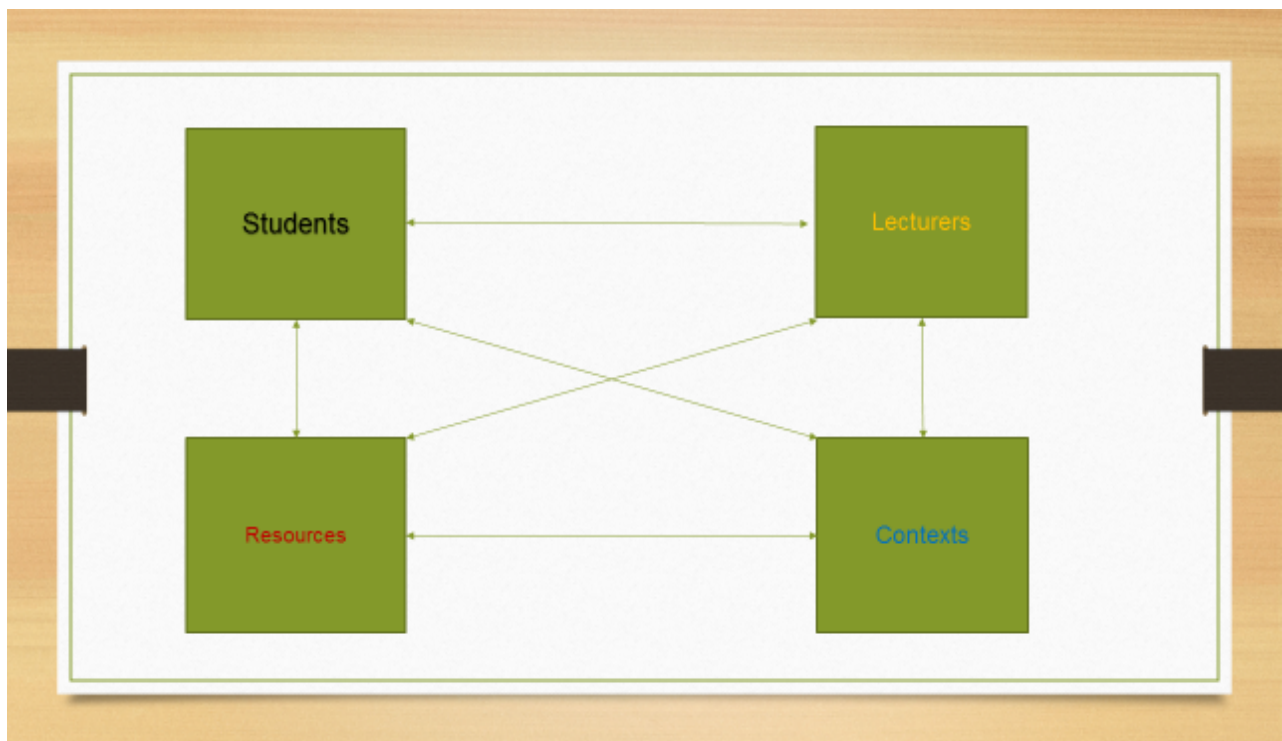
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content through effective modes of communication shown in bold. Dialogue within the components of the model are flexible in that curriculum tutors/students can optimise interaction by considering the ‘virtual alternatives’ whilst at the same time ensuring the quality of the learning/teaching experience is maintained. When levels of structure and dialogue are high, autonomy, or choice regarding study materials and methods of learning, is low. When structure and dialogue are low, student autonomy is high. Lecturers must determine an appropriate balance of structure and dialogue as they interact with students.

**Table 1**

<b>Structure</b>	<b>Dialogue</b>
Learning Outcomes LOs	Discussion Boards/Digital Guides
Assignments	Assignment Feedback (Recorded audio with annotation of scripts)
Assessments	Discussion Boards/ Digital Assessment Guides
Links to course components	Email/Webinar/Skype
Media presentations	One-to-one discussion/ Skype
Instructions	One-to-one discussion/Skype

**The model of flexible learning: Reciprocity and mutually inclusive relationships**



**Figure 1**

The model above (Figure 1) represents how each of the four constituents are never mutually exclusive but are connected on every level and to varying degrees. For example, students can be full or part time, undergraduate or postgraduate, professional or vocational. Their contexts are also inter-related i.e. studying from home, at work or at varying times of the day or week. Resources are numerous ranging from tutorial materials, assessment guides, blogs and subject content. In Figure 2 if the lecturer constituent is taken as the main focus, and then as the physical presence of the lecturer diminishes, all three other constituents are inversely affected. This can be explained in the following way:

As the physical presence of the lecturer diminishes, the more sophisticated resources must become to maintain quality of dialogue and interaction, the more flexible and autonomous must the students become in order to cope and manage this change and of course the context of learning will begin to vary as the student responds. Consequently, this model can be scrutinised and analysed to provide a framework that will provide insights into the design of flexible curricula and the type

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of changes needed particularly in more sophisticated, pedagogical uses of technology. In a traditional sense, teaching and learning can be described as the conventional processes of knowledge and skills transmission between the student and the lecturer in the same dimension of time and place. The face-to-face environment allows the lecturer to appreciate students' attitudes, their non-verbal cues for example, to elicit help. Students would therefore tend to expect and gain confidence that the lecturer will always be physically present throughout the learning process. The replication of face-to-face interaction through mediated means has been considered to be problematic for some time. Indeed Peters (2000, p. 17) argued that face-to-face discussion "can only be reproduced in part, and indeed in a reduced form, by mediated means". In addition, Garrison, Anderson and Archer (2000) concluded that the nature of communication is altered but not necessarily in a negative way. Indeed, they noted three areas of study (Cognitive, Social and Teacher presence) the former being the extent to which students are able to construct and confirm meaning through sustained reflection and discourse. Using the flexible model as a catalyst for exploration and discussion can enable, for example, a keener focus on the learning needs of students in virtual spaces.

Although a learning situation can be assessed to determine the amount of autonomy, structure, dialogue (transactional distance) involved, the transactional distance theory does not go so far as to recommend ideal situations for each variable. Instead, we need to determine the appropriate amount of autonomy, dialogue and structure for a learning situation based on the needs of the students.

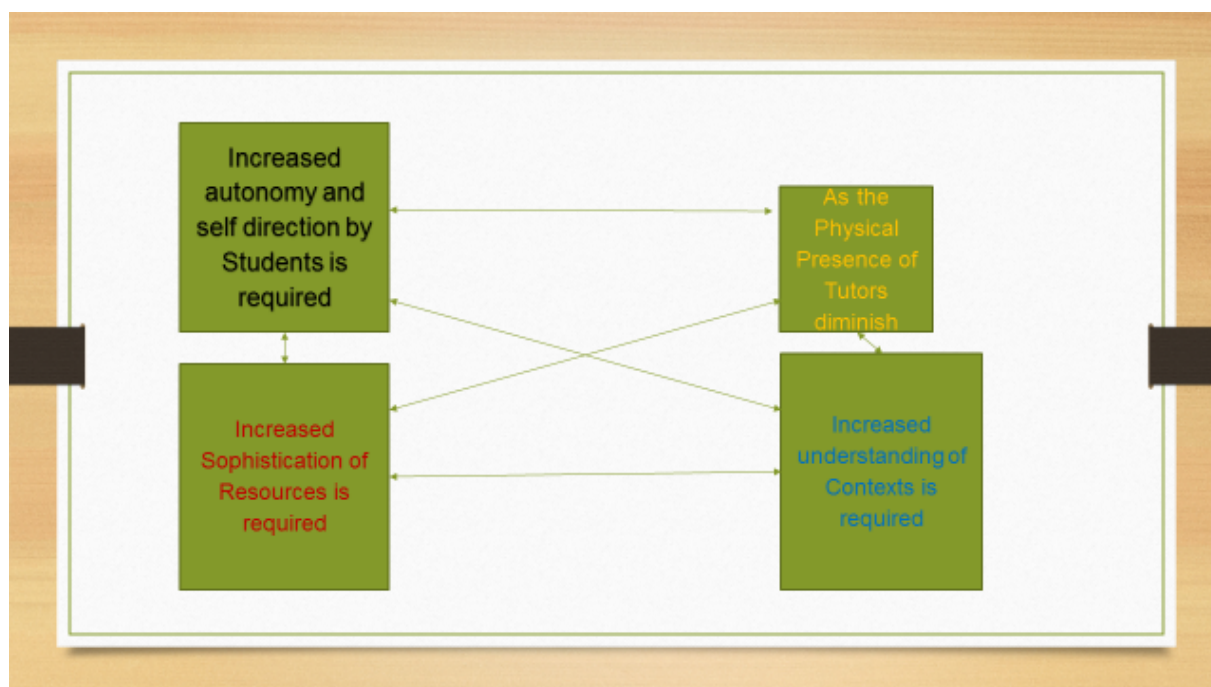


Figure 2

The lecturer's essential role is that of a communication facilitator. They act as a continuous facilitator, fostering and encouraging quality communication and interaction among students. The students must learn to realise their own responsibility regarding the communication space they perceive between them and their lecturers and peers.

### Students, resources, contexts and lecturers

So with the above model in mind, do different learning contexts, processes and environments affect perceptions, dispositions and approaches to learning? What are students' perceptions within their learning context? What approaches are students using in their learning? A deeper understanding of how students learn and the impact of teaching will allow the design and evaluation of ways in which we can best support the learning of future students from a diverse range of backgrounds and motivations.

We might ask what exactly students value? Here is a possible list:

1. Authentic 'real life' examples and teaching context
2. Knowing that depth of understanding is required to obtain good marks
3. Knowing what progress they are making through continuous assessment; marks counting towards final award reduce the fear of failure
4. Modules which are well organised and encourage more effort



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5. Space and comfort in lectures, which ensure their sustained attention
6. Opportunities for peer learning, but also guidance on independent learning.

As inferred by Albers (2012), the first step for lecturers is the need for an increased awareness of the cultural shift from learning to teaching alongside embracing what technology has to offer. Staff development helps to facilitate aspects of this shift but there must always be a fundamental belief in these new ways of working in order to impact significantly on current practices. Training in the use of a range of technology and their appropriate exploitation is a small part of the overall staff development package that is on offer and has to be willingly embraced. Much of what is said about curriculum impacts directly upon students. Institutions consider the impact that technology has on students and are prepared to raise their awareness of the differences between traditional and elearning and teaching. Many students, for a variety of reasons, already have exposure to the full range of technology. Some students have had 24/7 access to technology and a majority are experienced in operating within a virtual environment. Elearning is successful when institutions consider how students gain regular and frequent access to appropriate technology, which includes home access via broadband enabled personal computer/communications devices such as laptops, iPad and smartphones. In other words, a flexible learning (FL) approach.

Rather than changing methodology, a positive step would be to discontinue the over-reliance on one or two particular methods and explore the benefits of other approaches. In pursuance of a less lecturer-centred learning environment Bostock and Wood (2012) observed that often it is the change from a lecturer-directed setting to a more student-centred one that causes the most alarm. In other words, the transition from the familiar to the unfamiliar. They further argue that after a few sessions in settings where the students are well supported by resources, learning heuristics and scaffolds for their learning, most come quickly to appreciate and value the changed style of learning. This approach clearly has impacts on planning and sequencing within the classroom with implications that the resources are of sufficient quality and interest to facilitate learning and address individual needs. Interestingly, recent research into curriculum reform revealed a threefold approach to this, firstly requiring the lecturer to examine how technology can afford the greatest effects on the development of the artistic sensitivity, cognition and emotion of a student. In other words, to explore in depth the nature of the technology and what it can actually produce particularly in blended learning i.e. a combination of face-to-face and virtual learning.

### *On blended learning and interaction*

Just as the lecturer is expected to interact with students and vice versa, in other words to guide, facilitate and monitor learning, it is interesting that technologically mediated learning could be accepted as providing such interaction. On creating a sense of social presence Lehman and Conceicao (2010, p. 6-8) argue at length that it is not the technology but the way it is used which ultimately affects the student inferring that a good lecturer has presence in any medium. They go further and comment that learning will be really successful when the particular technology is exploited for its unique facilities, not for its verisimilitude to traditional teaching. In other words, the role of the lecturer is transformed from one of the font of all knowledge, who tells the students all they need to know, to one of planning, monitoring and quality control and this could involve the careful planning and sequencing of interactive media. Figures 1 and 2 reveal these processes; the former shows the reciprocal relationships in traditional teaching and the latter shows how in blended and flexible approaches, the demands for more sophistication in understanding of students, contexts and resources is increased inversely with the diminishing physical presence of the lecturer. The model is, therefore, a catalyst to apply to the process of flexible curriculum design and development.

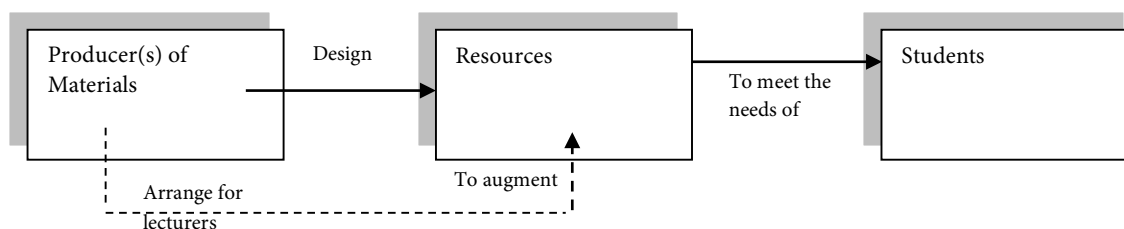
So, can conventional or traditional teaching perhaps have no place in modern methodology where technology might play a substantial part? After all, both traditional and modern methodologies incorporate, in varying degrees, a sense of interactivity. In educational terms it involves the appropriate level of student-content, lecturer-student and student-student activity, where content means text, hypertext, technology and multimedia. Lehman and Conceicao (2010) may have a good point in casting the responsibility of the suitability of technology in the classroom to that of the lecturer but simply making interactive technologies available does not lead inevitably to good interaction. The crucial factor lies in the attitudes of the lecturer to the integration of technology and the perceptions and behaviours of the students to the new learning tool as shown in the flexible model. Alongside the traditional skills and abilities of students such as reading, writing, speaking and processing information, it is necessary to acquire and develop additional skills to fully exploit technology. These include using a wide range of technology, time management and reflection both on and in action. For some students used to operating in isolation within a traditional distance context, they are enabled to learn to collaborate and support their peers. However, students also need to modify their expectations of the lecturer especially if they perceive them as being the 'sage on the stage' as they in turn adapt to their new role as 'guide on the side'.

In terms of resources the model emphasises flexible learning as technology-dependent and it is essential that there are clearly established lines of communication and support to ensure that students are not disadvantaged in the event of technology failure. It is necessary to continuously provide a full range of accessible resources to make the most effective use of it. Moreover, with changed expectations about the learning and teaching processes and the role of technology, it is now evident that new ways of thinking about how lecturers perceive students and how they perceive lecturers are being adopted.

Contexts become more flexible in terms of time and place with students operating outside of 'normal' university semesters therefore teaching and learning occurs outside of 'normal' working hours. Major difference between technology-based and traditional learning, especially at a distance, has been the collaborative nature of much of the interaction and the extent to which the peer groups support one another and use the lecturer as a facilitator rather than a content-expert. The relationship between lecturers, students and resources will also equally apply if they are going to be able to function effectively in flexible learning (Figure 3). In Figure 3 it is

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clear that there must be synergy of understanding between those who design materials and resources and those who wish to augment or enhance their potential e.g. learning technologists working alongside academic staff.



**Figure 3**

So the emphasis is shifted to that of environments of shared understanding rather than lecturer dominated events, which it is suggested can be conceived within a continuum ranging from total student control to total lecturer control. The former enables students to regulate their own learning, exercising choice over the pace and amount of information to be processed. The lecturer is able to guide these processes through negotiation and discourse and the student actively controls the sequence of learning constructing knowledge step by step and generating rules and models from the experiences. The theoretical framework of knowledge acquisition here is termed constructivism based in part on the findings of Bruner (1960) and linked especially to Piaget and encouraged by Knowles (1984) and later advocated by Armitage (2007) and Bostock and Wood (2012) as pivotal. The theoretical purpose of learning is (i) for an individual to ‘construct’ his or her own meaning from educational experiences, not just to memorise or regurgitate the right answers, (ii) to promote curricula which acknowledges prior learning, and (iii) to promote extensive dialogue or interactivity in the creation of knowledge. In an online or virtual environment the student should interact with content and with people, the former provided in sequentially effective and meaningful activities and the latter to provide the opportunity for reflection and discussion to promote meaning and understanding from those experiences which allow students to transcend the information initially imparted. In other words, the opportunity is provided to create new meaning for them. Therefore, the role of the lecturer has moved from that of the primary source of knowledge or the presenter of information to that of one who requests the production of knowledge through the provision of opportunities for successful interaction with online processes. The analysis showed a correlation between the activity design and the amount of permissible discourse but lecturers can create environments in which students take less ownership and contribute less discussion.

### Conclusions and recommendations

The integration of technology into the curriculum has the potential to sustain wider access to subject materials and provide increased flexibility in learning. It can enhance the students experience by allowing fast and easy access to well-presented materials i.e. by tapping into the internet as a resource base. It is a desired key component in the flexible delivery of teaching and learning. However, current provision has not yet fully embraced the potentials and processes needed to provide effective and enhanced learning experiences. Amongst the key issues involved in using technology to assist learning is the role of the lecturer. It is clear that technology-assisted learning means that lecturers must be continuously active participants in the planning, developing and accessing of course content. This, as has been shown through the learning model, requires a substantial commitment to the designing and preparation of such courses and this has implications on how much time the lecturer has to carry out the work. Armitage (2007), Scales (2008) and Bostock and Wood (2012) note that there are three roles of the lecturer that most directly influence the quality of education: lecturer as person, as curriculum planner and facilitator. Weakness in any one of these three roles can degrade the quality of education. Without adequate support and training the lecturer is hardly likely to fulfil all three roles, meaning that all the hard work in providing the technology would be considerably undermined by poor design in curriculum materials.

Another key issue is that of accessibility to appropriate software. The availability of mobile devices and digital media is not the main concern, but the location and context of learning definitely is. It is clear that a great deal of time is needed in establishing virtual platforms and ensuring that programmes are indeed effective and fit for purpose. Some students can be resistant to such teaching and learning methods which could potentially exclude them if the use of technology were not carefully thought through.

The flexible model can be applied in the design and implementation of interactive sessions according to the model thus:

- a) Preferred learning activities (students)
- b) Preferred lecturer activities (lecturers)
- c) Attitudes to interactive programmes (contexts)
- d) The learning environment (resources)

The shift from traditional methodology to the integration of online learning requires a considerable change of attitude and expectation for both students and lecturers, and commitment to this change is essential. The flexible learning environment would mean new ways of studying and a more active approach in their learning styles. This could mean that the act of learning is perceived

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as 'harder' when incorporating online activities. Bostock and Wood (2012) discuss technology and learning and conclude that confusion is created when the better aspects of traditional and technology based teaching are not integrated supported in earlier work and research by Armitage (2007) and Scales (2008). In other words, a blend of the positive aspects of the two is the key to effective learning. New study skills are needed and more importantly a requirement on the part of the students to take more responsibility for their learning and a requirement on the part of the lecturer to help develop student awareness of the benefits and importance of the new learning styles. Students' needs, attitudes and emotional states are crucial when determining positive learning outcomes and can affect and limit the extent to which the mind receives and processes data (Bostock and Wood, 2012 and 2014) and argue for real transformation. A deeper understanding and appreciation of the validity of technology in teaching and learning and a strong inclination for the decentralisation of the role of the lecturer are pivotal in preparing students for environments where technology enhances rather than detracts from effective learning. In terms of students' attitudes and capabilities Anderson and Middleton (2002) have previously presented an insightful interpretation of metacognition and suggested that metacognitive processes i.e. those processes required to help us learn how to learn are significant when adopting technology as a learning tool. The argument is that metacognitive instruction allows students to appreciate the validity of certain learning strategies in given contexts, and their ability to select and use such strategies can lead to profound learning and improved performance, especially among students who are struggling observed, for instance, by Bostock and Wood (2012). This is crucial as students, knowing how to manipulate and formulate strategies for learning, develop an important metacognitive skill which suggests a need to exploit the experiences of skilled peers to help less able peers to manage their learning.

Finally, and summarily, a clear and deep appreciation of the flexible model in curriculum design offers an opportunity to challenge students and promote effective learning experiences but efforts must be switched from the technical aspects of provision to the pedagogical design aspect. The model is sophisticated enough but there must be a clear, reasoned and mutually inclusive appreciation of its four constituents to effect real transformation and change in flexible curriculum design.

### Biography

Dr John Bostock is a Senior Lecturer in Teaching and Learning Development at Edge Hill University. Formerly a Further Education Lecturer and Team Leader in Modern Languages and Teacher Education he is now Accreditation Lead for the University CPD Scheme (UKPSF), Module Leader on the PGCTHE and Co-ordinator of the University Fellowship Staff Development Series as well as Strategic Lead on Pan-University Initiatives in Accessible and Inclusive Curriculum Design, Transitions and Student Peer Mentoring.

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