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## Examining proximal and distal influences on the part-time student experience through an ecological systems theory

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**Examining proximal and distal influences on the part-time student experience through an ecological systems theory**

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3 **Examining proximal and distal influences on the part-time student experience through**  
4 **an ecological systems theory**  
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8 **Abstract**  
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10 This conceptual paper contributes to the literature base on promoting equality of opportunity  
11 for students in higher education through seeking to broaden understanding of the influences  
12 on part-time students in the United Kingdom (UK). These students constitute a significant  
13 proportion of the total student population in the UK with recent research highlighting  
14 particular issues they encounter in their learning experience. An analysis of these issues  
15 suggests multiple sources of influence within a complex higher education landscape.  
16 Bronfenbrenner's ecological systems theory is drawn upon as a lens through which to  
17 examine proximal and distal influences on part-time students and their study in higher  
18 education. To help facilitate future participation, a research design is proposed with reference  
19 to the ecological systems theory that has a focus on the 'progressive, mutual accommodation'  
20 between the part-time student and a given learning context. The paper has significance for  
21 educators and researchers concerned with developing understanding of the multilayered  
22 influences on participation in higher education in a rapidly changing educational landscape in  
23 order to ensure equality of opportunity for all students.  
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35 Key words: part-time students, higher education, ecological systems theory, inclusive  
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## 1.0 Introduction

This conceptual paper contributes to the literature base on promoting equality of opportunity for students in higher education (HE) through seeking to broaden understanding of the influences on part-time students in a rapidly changing landscape in the United Kingdom. Although part-time students constitute a significant proportion of the total student population in the United Kingdom, recent literature highlights particular issues that they face in engaging in the broader learning process (e.g. McLinden, 2013, Universities UK, 2013, Callander et al., 2012, Maguire, 2013; Butcher et al. 2015; Rees and Rose-Adams, 2014). Building on recent work exploring the experiences of part-time students within HE (e.g. Callander et al., 2012; Butcher et al. 2014, Whitehead, 2015), this paper examines the various influences on part-time students and their learning experiences. The potential barriers outlined in the literature of participating in part-time study within HE are reviewed in the context of a broader inclusive learning and teaching agenda. To help conceptualise the multiple sources of influence in which learning is undertaken, reference is made to Bronfenbrenner's ecological systems theory (e.g. Bronfenbrenner, 1979, 2005). This ecological model is used as a lens through which to analyse 'proximal' (i.e. situated close to the student) and 'distal' (i.e. situated away from the student) influences on part-time students and their respective learning experiences within a series of nested and interconnected 'systems'. In seeking to identify and reduce factors that may serve as potential barriers to participation in HE and ensure equality of opportunity, the ecological systems theory is drawn upon to propose a design for future research that has as its focus the 'progressive, mutual accommodation' (Bronfenbrenner, 2005, 107) between the part-time student and the context in which learning takes places over a given timeframe.

## 2.0 Part-time students in higher education

Part-time students represent a significant proportion of the total student population in HE within the United Kingdom (e.g. Oxford Economics, 2014; Universities UK, 2013; Butcher et al. 2015). This is demonstrated in the summary from the Higher Education Statistics Agency (HESA) for student enrolments and qualifications in the United Kingdom (UK) which shows that the total number of HE enrolments at UK institutions in 2014/15 was 2,266,075 of which 568,930 were listed as 'part-time' i.e. approximately 25% of the total enrolments for that year (HESA, 2016). As noted by Callender and Feldman (2009, 2) part-time students constitute an extremely heterogeneous section of the overall student population 'varying from each other in

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3 numerous respects, notably the qualification aimed for, the proportion of full-time equivalent  
4 credits studied at a particular time, the level of study, the length of the full course, and how  
5 study is funded'. Indeed, a recent report on part-time learning (Oxford Economics, 2014, 1)  
6 noted that defining 'part-time study' is considered to be problematic with definitions usually  
7 drawing on credit or thresholds based on hours of study. This is illustrated by the definition  
8 of a 'part-time student' drawn upon by the Higher Education Statistics Agency (HESA) in the  
9 UK which makes reference to the full-time thresholds of either 21 hours per week or 24  
10 weeks per year and includes students on employment, block release and evening study. As  
11 noted in the 2014 Oxford Economics report (Oxford Economics, 2014, 1), the definition of  
12 part-time study drawn upon by the Organisation for Economic Co-operation and  
13 Development (OECD) 'enables international comparability and ensures that data are  
14 collected and classified using a consistent methodology'. At the tertiary level, within the  
15 OECD dataset an individual is considered to be part-time if he or she is taking a 'course load'  
16 or 'educational programme' that requires less than 75 per cent of a full-time commitment of  
17 'time and resource'.  
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29 Whilst potentially useful for comparative purposes, such a distinction does not do justice to  
30 the range of 'flexible' ways in which students seek to structure studies around work, family  
31 and other commitments (e.g. McLinden, 2013; Pollard et al. 2012, HEFCW, 2014, Maguire,  
32 2013). As an example, a policy document mapping out a vision for 'part-time' students in  
33 Wales (HEFCW, 2014) notes that rather than continuing to view study as a simple full  
34 time/part time dichotomy, institutions should examine more flexible models to capture the  
35 full spectrum of learning needs. The possibility of introducing more flexible models is partly  
36 due to the changing nature of educational technology, including internet access and mobile  
37 technologies, meaning that for many students the notion of 'anytime/anyplace' learning is  
38 increasingly becoming a reality both on and off the traditional 'campus' (McLinden, 2013).  
39 To support HEIs in reviewing practice to develop greater flexibility, an audit tool has been  
40 mapped out in the form of a '*Student Learning Pathway*' which identifies significant stages  
41 from application through to exit and/or progression (McLinden, 2013). Whilst the broad  
42 stages within such a pathway for part-time students are considered to be similar to those  
43 studying through full-time education, it is noted that each may differ in a number of  
44 important respects (e.g. online induction activities as an alternative to campus attendance;  
45 lectures presented through digital technologies; alternative assessment and feedback  
46 arrangements etc.).  
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Alongside an emphasis on developing and promoting greater flexibility in ‘how’, ‘where’ and ‘when’ learning takes place within higher education (McLinden, 2013), there has also been an increased focus on understanding the experiences of those students who undertake their study through part-time means. The importance of such a focus is brought to light through research that has evaluated the experiences of part-time students and identified issues that need to be considered to ensure they are suitably included in higher education (e.g. Pollard et al. 2012; Butcher et al. 2015, Whitehead, 2015). As an example, a 2014 higher education policy document outlines a vision for ‘part-time learners’ in Wales, arguing that in their strategic planning, higher education providers should demonstrate high-level commitment to part-time higher education, equality of opportunity and the promotion of higher education with the part-time student experience informed by the part-time student ‘voice’ (HEFCW, 2014). Such a view resonates with a project report published by the Higher Education Academy (HEA) outlining recommendations that seek to ensure part-time students are appropriately ‘mainstreamed’ within higher education including reference to ensuring appropriate ways are drawn upon to capture student feedback of their experience (McLinden, 2013).

The challenges faced by HEIs in ensuring that students from a diverse population are able to engage in higher education have given rise to a focus on ‘inclusive’ learning and teaching, described by Hockings (2010, 1) as ‘the ways in which pedagogy, curricula and assessment are designed and delivered to engage students in learning that is meaningful, relevant and accessible to all.’ Hockings (2010, 3) reports that underpinning the concept of inclusive learning and teaching are the values of ‘equity’ and ‘fairness’ which requires ‘taking account of and valuing students’ differences within mainstream curriculum, pedagogy and assessment.’ An inclusive learning environment can be broadly viewed as being ‘anticipatory’ of broad categories of students rather than focusing on, or being responsive to, *individual* needs (e.g. QAA, 2012). This view suggests the responsibility is on the higher education provider to anticipate the varied requirements of students, for example, ‘because of a declared disability, specific cultural background, location, or age, and aims to ensure that all students have equal access to educational opportunities.’ (QAA, 2012:4). Whilst such a perspective can create tensions when seeking to ensure that the needs of *individual* students are suitably accommodated (for example as a result of changing needs or circumstances), recent work highlights the importance of considering the interrelatedness between individual

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3 student needs and his or her learning environment over a given learning pathway to ensure  
4 that such needs can be suitably accommodated (e.g. Hewett et al. in press).  
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8 Given the various layers of influence on student progression and development within HE, a  
9 ‘facilitative change programme’ funded by the HEA sheds light on the significant challenges  
10 HEIs face in developing and promoting policy and practice that is considered to be  
11 ‘inclusive’ of all learners students (May and Bridger, 2010). The change programme sought  
12 to generate a greater understanding of the processes involved in developing inclusive policy  
13 and practice through drawing on a selection of institutional case studies. Three key  
14 conclusions were presented in the final report:  
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- 17 • that change is required at both an institutional and individual level to bring about  
18 inclusive policy and practice;
- 19 • that it is essential to build an evidence base from which to bring about change;
- 20 • that a multimethod, tailored approach is necessary involving different stakeholder  
21 groups across the institution.  
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29 In analysing the findings of the programme and describing the layers of influence operating  
30 in relation to inclusive policy and practice, May and Bridger (2010) make reference to the  
31 ecological systems theory proposed by Bronfenbrenner (e.g. Bronfenbrenner, 1979, 2005),  
32 arguing that the theory provides a helpful framework for thinking about student  
33 ‘development’ in higher education given it is centred on three core propositions:  
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- 36 • that development arises through transactions between an individual and their  
37 environment;
- 38 • that the immediate environment can be distinguished from wider environmental levels  
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- 40 • that inter-relationships between the different levels are influential.  
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45 An overview of Bronfenbrenner’s ecological systems theory is presented below. It is then  
46 drawn upon to consider the inter-relationships ‘within’ and ‘between’ the different systems in  
47 examining influences on the part-time student experience in higher education.  
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### 50 51 52 53 **3.0 Ecological Systems Theory**

54 As noted by Thomas and Myers (2015), Bronfenbrenner held the view that culture and  
55 society provide a set of ‘instructions’ for how social settings are made, and integrated a  
56 discussion of the context within which humans develop into a framework which was  
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3 conceptualised as an ‘ecological’ systems theory. The theory is often represented in the  
4 literature as a series of nested ‘systems’ to reflect the relationships between each (e.g.  
5 Anderson et al, 2014; May and Bridger, 2010; Thomas and Myers, 2015). As illustrated in  
6 Figure 1, each system is defined separately but is considered to be related in a hierarchical  
7 structure to illustrate its influence on the individual at the centre.  
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15 *Insert Figure 1 about here*  
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20 The primary focus of the theory is considered to be not on the individual per se, but rather the  
21 ‘progressive, mutual accommodation’ (Bronfenbrenner, 2005, 107) throughout a given  
22 timeframe between the developing individual and the changing properties of the immediate  
23 settings in which he or she interacts, with acknowledgment that this process is affected by the  
24 relations between these settings. This emphasis is articulated in the ‘cornerstone’ of the  
25 ecological systems theory proposed by Bronfenbrenner which states that:  
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30 ‘The ecology of human development is the scientific study of the progressive, mutual  
31 accommodation, *throughout the life course*, between an active, growing human being  
32 and the changing properties of the immediate settings in which the developing person  
33 lives, as this process is affected by the relations between these settings, and by the  
34 larger contexts in which the settings are embedded.’ (Bronfenbrenner, 2005, 107,  
35 original italics)  
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42 Immediately surrounding the individual is the *microsystem* which incorporates ‘the complex  
43 of relations between the developing person and the environment in an immediate setting  
44 containing the person’ (Bronfenbrenner, 1977, 515). An enhanced description was provided  
45 by Bronfenbrenner in a later analysis within which he described the microsystem as a  
46 ‘pattern of activities, roles and interpersonal relations experienced by the developing person’  
47 in a given setting with ‘particular physical and material features and *containing other persons*  
48 *with distinctive characteristics of temperament, personality and systems of belief*’  
49 (Bronfenbrenner, 2005, 148, original italics).  
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56 The *mesosystem* was outlined by Bronfenbrenner as comprising ‘the interrelations amongst  
57 major settings containing the developing person at a particular point in his or her life’  
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3 (Bronfenbrenner 1977, 515), and incorporates ‘the linkages and processes taking place  
4 between two or more settings containing the developing person’ (Bronfenbrenner, 2005,  
5 148). The *exosystem* is conceptualised as being situated around the mesosystem and  
6 encompasses ‘the linkage and processes taking place between two or more settings, at least  
7 one of which does not ordinarily contain the developing person, but in which events occur  
8 that influence processes within the immediate setting that does contain that person  
9 (Bronfenbrenner, 2005, 148). As noted by Lerner this system is composed of contexts that  
10 ‘while not directly involving the learner have an influence on the person’s behaviour and  
11 development’ (2005, xiii).  
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19 The *macrosystem* consists ‘of the overarching pattern of micro-, meso-, and exosystems  
20 characteristic of a given culture, subculture, or other broader social context, *with particular*  
21 *reference to the developmentally instigative belief systems, resources, hazards, lifestyles,*  
22 *opportunity structures, life course options and patterns of social interchange that are*  
23 *embedded in each of these systems.* The macrosystem may be thought of as a societal  
24 blueprint for a particular culture, subculture, or other broader social context.’  
25 (Bronfenbrenner, 2005, 149-150, original italics). Lerner (2005, xiv) refers to this system as  
26 ‘involving culture, macroinstitutions (such as federal government), and public policy’  
27 influencing ‘the nature of interaction within all other levels of the ecology of human  
28 development.’ In later versions of the ecological systems theory (e.g. Bronfenbrenner, 2005),  
29 Bronfenbrenner makes reference to the *chronosystem* in order to incorporate the time element  
30 of individual development.  
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40 Although Bronfenbrenner’s ecological systems theory has been commonly drawn upon in  
41 relation to child development and school education settings, as a conceptual framework it  
42 encompasses the whole developmental ‘life course’ of an individual, thereby providing  
43 opportunities to align it with select educational ‘phases’ through reference to the time  
44 dimension represented in the ‘chronosystem’ (i.e. early years education, compulsory school  
45 education; further/higher education etc.) (e.g McLinden and Douglas et al. 2016). Indeed, as  
46 considered briefly below, there is an emerging literature base that makes explicit reference to  
47 ecological models in examining the multilayered and interrelated influences on adult learning  
48 within higher education (e.g. Frielick, 2004a, 2004b; Gibson, 1993; Willems, 2013; May and  
49 Bridger 2010).  
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3 Frielick (2004a) argues that an ‘ecological understanding’ of higher education provides an  
4 appropriate and contemporary basis for teaching and learning in universities, with practical  
5 implications for both subject teachers and academic developer practitioners. In a study  
6 examining the role of academic development in enhancing the quality of student learning in  
7 universities through an ecological approach, he proposes the concept of a ‘zone of academic  
8 development’, described as being ‘both an ecological model of learning/teaching in university  
9 education and a framework for understanding and doing academic development work’  
10 (Frielick, 2004a, 1). This concept is viewed as being a metaphor for the processes of  
11 individual and organisational learning that arise through ‘a transformative approach to  
12 academic development aimed at epistemological change in conceptions of teaching and  
13 learning’ (Frielick, 2004a, 6).

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22 In applying Bronfenbrenner’s ecological systems theory to ‘distance education’ Gibson  
23 (1993, np) reports that distance educators, are interested in not only learning, ‘but also in the  
24 interaction of those properties of the person and their multiple environments which produce  
25 constancy and change in the characteristics of the person over time.’ Gibson cites as an  
26 example the distance education student who develops in self-confidence as a result of the  
27 interaction of the growing self-awareness of his/her capabilities, the award of high grades, the  
28 encouragement of others, peers’ and family’s new found pride in the learner’s success etc.  
29 Similarly, with a focus on distance education students, Willems (2013) draws on the various  
30 systems within an ecological model to analyse the notion of equity for these students.

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38 Through examining the relevance of an ecological systems theory to broader inclusive policy  
39 and practice within higher education, May and Bridger (2010) conclude that it is useful in  
40 describing the layers of influence operating in a given situation. They cite as examples, the  
41 *interaction* between the individual and the HEI which is reflected in a multi-layered ‘model’  
42 with respective layers depicting the range of contexts that could be identified across HEIs,  
43 and which serve to reinforce the finding that it is necessary to target both institutional and  
44 individual factors to bring about sustainable change. Further, they note that to refer to one of  
45 the contexts in isolation from the others can be misleading due to the complex inter-  
46 relationships between them, given the model portrays the mutual influences of learners on  
47 their wider environment and of the wider environment on the learner. With reference to this  
48 analysis of inclusivity in higher education, Bronfenbrenner’s ecological system theory is  
49 drawn upon next to propose an ecological model of learning and teaching for part-time  
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3 students in order to conceptualise the various ‘layers of influence’ affecting their student  
4 learning experience.  
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10 **4.0 An ecological model of learning and teaching in higher education for part-time**  
11 **students**

12 An ecological model of learning and teaching in higher education for part-time students is  
13 outlined in Figure 2.  
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20 *Figure 2*

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23 For the purpose of this analysis, the part-time student registered on a given credit bearing  
24 learning pathway is represented at the centre of the model. As examined later when  
25 considering research design, the part-time student can be described in relation to particular  
26 ‘characteristics’ that potentially influence his or her learning experience (e.g. age, gender,  
27 academic attainment, previous experience of studying in higher education etc). The  
28 *microsystem* contains factors that exist within the environments in which part-time students  
29 directly engage in both formal and informal learning as well as the social aspects of higher  
30 education life. This includes the curriculum resources, the people, as well as learning  
31 activities with which students have *direct* contact including relationships with other students,  
32 tutors, learning spaces, and access to particular resources (i.e. the ‘proximal’ influences).  
33 Whilst Bronfenbrenner (2005) makes explicit reference to ‘face-to-face settings’ in  
34 describing the microsystem, given the importance of learning technologies to the  
35 contemporary student experience within this ecology (and particularly for students studying  
36 through distance education), the virtual learning environment is included as a related ‘setting’  
37 within this system in which learning takes place. The nature of the other people with  
38 ‘distinctive characteristics’ outlined by Bronfenbrenner in his theory (Bronfenbrenner, 2005)  
39 is of interest within this ecology and includes opportunities for collaborative learning and  
40 other types of engagement with students on a given learning pathway. Given the nature of  
41 part-time study, this system also includes reference to examples of other environments in  
42 which a student might engage alongside a given study experience (e.g. work based learning  
43 experience; part-time job, home environment etc.).  
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3 Surrounding the microsystem are activities taking place within the *mesosystem*. Whilst these  
4 activities may not be apparent to the part-time student given they may take place ‘behind the  
5 scenes’ of their direct learning experience, they have as their focus the interrelations amongst  
6 the settings in which the student is educated including: institutional structures in place to  
7 support part-time student learning (e.g. study skills, library support, disability services etc.);  
8 opportunities provided by the institution for part-time students to engage with other students  
9 through developing and promoting collaborative learning spaces (physical and virtual); the  
10 relationships that are developed and nurtured between an HEI, an employer or sponsor; work  
11 placements; training of mentors/tutors who support the student’s learning in other settings  
12 etc. Activities in this system also include work with key stakeholders to ensure the course is  
13 updated and meets the needs of students and employers.  
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22 The *exosystem* is considered to be outside of the students direct agency but has implications  
23 in the context of an ecology of learning and teaching given it includes the policies of the HEI,  
24 budget allocations in a given year to ensure part-time students are included and promoted  
25 within institutional priorities as well as consideration as to how to monitor their learning  
26 experience. It also includes the strategic priorities of an institution in seeking to develop and  
27 nurture effective working relationships with work placement settings, developing  
28 relationships with potential sponsors of students, and promoting collaborative teaching  
29 activities to allow part-time students to engage with other learning communities. Such  
30 activities have particular relevance to a broader inclusion agenda, given that McLinden  
31 (2013) reports the means through which institutions embrace part-time students (e.g. in  
32 promoting a particular course) can determine how ‘welcome’ they feel.  
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41 The *macrosystem* within this ecology describes the broad cultural context in which learning  
42 takes place within higher education including national policies relating to student recruitment,  
43 widening participation and other teaching and learning initiatives. This system therefore  
44 incorporates the key drivers for change in HE at national and international levels and which  
45 currently include: a renewed focus on identifying and promoting ‘teaching excellence’; the  
46 prominence given to the inclusive curriculum as part of a broader ‘equity’ agenda; an  
47 increasing emphasis on students as ‘partners’ in the learning process (e.g. Healey, Flint and  
48 Harrington, 2014); recent work on promoting more flexible learning pathways for students in  
49 higher education (Barnett, 2014). As such, this system provides scope for examining and  
50 comparing different national as well as international agendas and policy developments that  
51 serve to influence the part-time student experience.  
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3 The *chronosystem* represents the time dimension within this ecology referring to the length of  
4 the credit bearing course within a given learning pathway. This could include a part-time  
5 postgraduate research degree undertaken over a number of years, an extended UG degree of  
6 3-5 years in duration or a single module. Transition ‘into’ and ‘within’ higher education  
7 through ensuring there is appropriate support provided to ensure an effective progression is  
8 viewed as being important for part-time students (e.g. McLinden, 2013), and resonates with  
9 Bronfenbrenner’s notion of ‘ecological transitions’ (Bronfenbrenner, 2005) as students move  
10 from one role or setting to another.

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17 In order to identify and reduce factors that may serve as potential barriers to participation in  
18 HE and promote equality of opportunity, the ecological systems theory is drawn upon next to  
19 propose a design for future research that has as its focus the ‘progressive, mutual  
20 accommodation’ (Bronfenbrenner, 2005, 107) between the part-time student and the context  
21 in which learning takes places over a given timeframe.  
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### 28 **5.0 Examining the part-time student experience through the ecological systems theory**

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30 Although Bronfenbrenner’s ecological systems theory tends to be frequently associated with  
31 the ‘context’ in which development takes place (e.g. with reference made to the nested  
32 systems of environments outlined in Figure 1), Gibson (1993, np) notes in considering its  
33 relevance to students studying through distance education, ‘Bronfenbrenner would urge us to  
34 go one step further in our research designs - to begin to move beyond the ‘person-context’  
35 design to what is termed a ‘person-process-context’ design’, encouraging researchers to ask  
36 what processes, associated with certain characteristics of the learner ‘affect the outcome of  
37 persistence in learning’. Within such a design Gibson (2003, np) argues that reciprocal  
38 relationships as well as ‘new synergisms are not to be forgotten, nor the element of time  
39 across which these developmental changes occur.’  
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49 The ecological model outlined in Figure 2 provides a basis for mapping out a research design  
50 in line with such an analysis, given that it has as its focus not just the student context (e.g.  
51 examining the student’s individual’s experience of a particular study pathway) but also  
52 incorporates reference to the ‘process’ through which the learning takes place over a given  
53 timeframe. Indeed, Bronfenbrenner argued that although earlier versions of his theory had  
54 been revised over time, his theory was explicitly ecological and stressed person-context  
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3 *interrelatedness* (Tudge et al., 2009). Within the ecological systems theory such a design is  
4 referred to by Bronfenbrenner (2005) as a *Process-Person-Context-Time (PPCT)* model given  
5 that the ‘full’ theory in its most developed form deals with the interrelations among each of  
6 these four elements (Tudge et al., 2009). Tudge et al. (2009), argue that in order to undertake  
7 a study that is guided by Bronfenbrenner’s ecological systems theory therefore, all four  
8 elements of the PPCT model should be present, or in specifying the design, those elements not  
9 drawn upon should be clearly acknowledged to ensure the integrity of the theory is preserved.  
10 Each element of the PPCT model is considered briefly below.

### 11 12 13 14 15 16 17 18 19 *Process*

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21 The forms of interaction in an individual’s immediate environment are referred to by  
22 Bronfenbrenner as *proximal processes* (Bronfenbrenner & Morris, 1998). It is reported that  
23 the ‘form, power, content, and direction’ of the proximal processes influencing development  
24 vary systematically as a joint function of the characteristics of the individual, the immediate  
25 and more remote environment in which the processes are taking place; the nature of the  
26 outcomes that are being examined, as well as ‘the social continuities and changes occurring  
27 over *time* through the life course and the historical period during which the person has lived’  
28 (Bronfenbrenner&Morris, 1998, 996, original italics). These processes play an important role  
29 in the development of an individual, being referred to by Bronfenbrenner (2005) as the  
30 ‘primary mechanisms’ through which development takes place throughout an individual’s life  
31 span. In relation to the part-time student learning experience, the ‘proximal processes’ can be  
32 considered in relation to the particular nature of the pedagogical experience including tutor  
33 interaction and support, opportunities for collaborative learning with peers, access to support  
34 networks etc.

### 35 36 37 38 39 40 41 42 43 44 45 46 47 *Person*

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49 Bronfenbrenner acknowledged the ‘personal characteristics’ that individuals bring with them  
50 into a given social situation, dividing them into three types, which he termed *demand*,  
51 *resource*, and *force* characteristics. As noted by Tudge et al (2009), ‘demand’ characteristics  
52 are those to which Bronfenbrenner referred to as “‘personal stimulus” characteristics and  
53 include age and gender. In comparison, ‘resource’ characteristics ‘relate partly to mental and  
54 emotional resources such as past experiences, skills, and intelligence’ as well as to social and  
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3 material resources, whilst ‘force’ characteristics are considered to be those aspects of the  
4 individual that relate to differences in temperament, motivation, persistence etc. (Tudge et al,  
5 2009, 200). A summary of these characteristics is presented in Table 1.  
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10 *Insert Table 1 about here*

### 11 12 *Context*

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14 The environment, or ‘context’, incorporates the four interrelated systems outlined in Figure 1.  
15 Of note is the fact that the systems are interrelated and whilst they assume less *direct*  
16 significance to the student they can still influence development and progression in relation to  
17 a given learning pathway.  
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### 20 21 *Time*

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23 The dimension of time is commonly represented in the ecological systems theory through  
24 reference to the *chronosystem*. This element is further divided into ‘sub-elements’ to provide  
25 a nuanced view of time in relation to development (Bronfenbrenner and Morris, 1998). As  
26 Tudge et al (2009) note, these sub-elements are:  
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- 29 • *micro-time* – i.e. what is occurring during the course of a specific activity or  
30 interaction;
- 31 • *meso-time*- i.e. the extent to which activities and interactions occur with some  
32 consistency in the developing person’s environment,
- 33 • *macrotime* – equates with the broader notion of the *chronosystem* outlined in Figure  
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43 Dividing the time dimension into these sub-elements allows a focus on different aspects of a  
44 given student learning experience. As an example, an examination of *micro-time* (what is  
45 occurring during the course of some specific activity or interaction) could include  
46 observations of engagement in a particular learning activity (online seminar, collaborative  
47 group activity etc.) through situational analysis. An examination of *meso-time* (the extent to  
48 which activities and interactions occur with some consistency in the student’s environment)  
49 could examine the extent to which there is consistency in the tutorial support provided to  
50 students over a given learning activity. A focus on *macro-time* allows for an examination of  
51 changes in broader processes including for example, changes to the resources available to a  
52 given cohort in comparison to earlier cohorts, new policy initiatives within a given timeframe  
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3 that influence the learning experience, new types of technologies that are introduced to the  
4 learning experience etc. A summary of the interrelationship between the 4 elements in the  
5 PPCT model is presented in Figure 3.  
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11 *Insert Figure 3 about here*  
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16 Drawing on these elements Tudge et al. (2009) outline what a research design based on the  
17 'mature' version of Bronfenbrenner's ecological systems theory should include. As an  
18 example, with respect to selected characteristics of the *Person* (i.e. demand, resource, force)  
19 and how they may influence 'proximal processes', they note that a study could be designed to  
20 examine the ways in which a *demand* characteristic, such as age, appearance, or gender  
21 altered a given activity or interaction. They argue however, that a 'richer' design would  
22 examine 'the ways in which relevant resource or force characteristics of the study participants  
23 influenced the ways in which they acted and interacted', noting that the study should be  
24 'longitudinal (to evaluate the influence of proximal processes, as they are mutually  
25 influenced by person characteristics and context, on the developmental outcomes of interest)  
26 and should take into account what is occurring, in the group being studied, at the current  
27 point of historical time.' (Tudge et al., 2009, p. 202).  
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38 Although the primary focus of the analysis provided by Tudge et al (2009) of  
39 Bronfenbrenner's work is mainly concerned with family and developmental research, the  
40 principles they outline when applying Bronfenbrenner's theoretical structure to empirical  
41 design have potential relevance across the human lifespan, including examination of an  
42 individual's learning experience in higher education as a student. Indeed, drawing on the  
43 four elements within the PPCT model suggests some intriguing possibilities for future  
44 research design that has as a focus not on the students nor the context in which they  
45 undertake their studies per se, but rather the 'progressive' and 'mutual' accommodation  
46 between these over a given time timeframe. An example is outlined below to illustrate such a  
47 design.  
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Pollard et al. (2012) report that part-time students have different support needs in comparison with students in full time education. As noted by McLinden (2013), there is evidence that while part-time students have a broadly positive view of their studies, effective participation requires particular types of pedagogical support to ensure they are suitably engaged in the learning process from induction through to award (e.g. McLinden, 2013). A research study that draws on the PPCT model to investigate the various influences on the nature of this engagement could examine how the interactions among selected proximal processes (*process*), personal characteristics (*person*), *context*, and *time* combine to influence particular student outcomes. An example of such a design is presented in Table 2 drawing on a hypothetical three year credit bearing part-time blended learning course based at an HEI. In this example the focus is on the nature of the pedagogical supports provided to promote learning in different course settings (e.g. campus based sessions, virtual learning environment, work based placements, work settings), and how these combine with the interactions among selected characteristics of a sample of part-time students (e.g. age, previous experience of studying in HE; previous educational achievement etc.) on a three year course of study to influence aspects of select outcomes (e.g. academic achievement; employability outcomes, progression to further study).

*Insert Table 2 here*

A summary of the relationships between each element in influencing the student outcomes in this research design is illustrated in Figure 4.

*Insert Figure 4 about here*

The focus of a longitudinal study involving the perspectives of students tutors and mentors from the different settings, allows consideration of the ‘progressive’ and ‘mutual’ accommodation between the part-time student and learning context in the respective settings. Whilst application of a research design based on *all* elements of the PPCT model would be relatively resource intensive, Tudge et al. (2009, 202) argue that whilst Bronfenbrenner’s full or ‘mature’ theory should include each of the elements of the PPCT model if it is to qualify as a complete ‘test’ of the model, partial ‘tests’ are possible, but need to be identified. Drawing on the PPCT model and explicitly identifying which of the elements serve as the focus of a

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3 given design therefore offers the opportunity to develop a consistent theoretical framework  
4 within which to chart an innovative research agenda for part-time students that could serve to  
5 promote more equitable practice in higher education. Indeed, a potential strength of drawing  
6 on an ecological systems framework is that it allows for simultaneous examination of  
7 complex and multi-dimensional influences on part-time student learning, whilst offering  
8 scope to incorporate into the design selected individual student characteristics and  
9 circumstances (e.g. age, academic background, prior experience of studying in HE etc). Such  
10 a focus resonates with the findings of a recent study in Wales that examined the experiences  
11 of part-time students, and emphasised the importance of acknowledging the ‘plurality of lived  
12 experiences of students’ and the need for individualised responses to students’ own  
13 description of their circumstances, rather than an ascription of ‘need’ based on identifiable  
14 circumstances and/or characteristics (Butcher et al. 2015).

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16 Whilst the focus of this conceptual article has been on seeking to broaden understanding of  
17 the influences on the study experience of part-time students, an ecological model offers a  
18 potential lens through which to examine the various influences on the participation of other  
19 categories of students in higher education. Indeed, in examining inclusive learning and  
20 teaching through the lens of such a conceptual model therefore, it would be possible to focus  
21 on groups of students that are defined by selected individual characteristics (e.g. age, gender,  
22 disability, ethnicity), as well as by the nature or level of their study (e.g. full or part-time;  
23 undergraduate or postgraduate). A recent example is provided by Hewitt et al. (in press) who  
24 draw on Bronfenbrenner’s ecological systems theory as a lens through which to examine the  
25 reported barriers to participation of 32 students with visual impairment in HEIs within the  
26 United Kingdom. Focusing specifically on ‘curriculum access’, the results serve to highlight  
27 the importance of accommodations that are considered to be ‘progressive’ and ‘mutual’ over a  
28 given learning pathway.

## 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 **5.0 Conclusion**

48 Part-time students represent a heterogeneous section of the broader student population within  
49 HE, often referred to for research purposes on the basis of not being in ‘full time’ education  
50 rather than because of common defining features. Such a view is supported by Callender and  
51 Feldman (2009, 25) in reporting that further studies are important for ‘encouraging a more  
52 nuanced approach to part-time students in HE’, and arguing that researchers ‘need to  
53 differentiate more clearly the varying needs and trajectories of different groups among them  
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3 and use this knowledge to challenge the undifferentiated assumptions embedded in the  
4 concept of the non-traditional student, to which part-time students are too often confined.’  
5 Similarly, Macguire (2013, 12) calls for a ‘more nuanced understanding of the requirements  
6 of students as individuals’ arguing that if we can ‘remove the arbitrary barriers that exist in  
7 the minds of system designers, but are absent from those of system users, we can begin to  
8 unlock the true learning potential of our society.’ McLinden (2013) reports that whilst the HE  
9 sector as a whole is becoming more responsive in recognising and understanding the broader  
10 pedagogical needs relating to part-time study, and that there is evidence of part-time students  
11 featuring in curriculum design and planning, further work is required to help to ensure they  
12 are suitably ‘mainstreamed’ within institutional structures to ensure parity with all students.  
13 This article is presented as an attempt to encourage and stimulate further debate and provide  
14 the basis for consistency and coherence in future research design. Further articles are planned  
15 to illustrate how an ecological model has informed a research agenda that is guided by  
16 seeking to understand the interrelatedness ‘within’ and ‘between’ different ecological systems  
17 in relation to a given experience of study, so as to develop and promote greater equality of  
18 opportunity for part-time students in higher education.  
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For Peer Review Only



## Tables

Personal characteristics	Description
<b>Type 1: Demand</b>	Personal stimulus characteristics e.g. age and gender.
<b>Type 2: Resource</b>	Personal mental and emotional 'resources' e.g. previous experiences and skills; social and material resources.
<b>Type 3: Force</b>	Personal temperament, motivation, persistence etc.

Table 1. Summary of 'personal characteristics' within an ecological systems theory (adapted from Bronfenbrenner 2005 and Tudge et al 2009)

<p><b>Process</b></p> <ul style="list-style-type: none"> <li>Nature of pedagogic supports provided to promote learning within different settings (i.e. tutor, peer to peer, mentors etc.)</li> </ul>	<p><b>Person</b></p> <ul style="list-style-type: none"> <li>Selected characteristics of the student (e.g. age, previous educational achievement; previous experiences of studying in HE; motivational factors for choosing the course and mode of study etc.)</li> </ul>
<p><b>Context</b></p> <ul style="list-style-type: none"> <li>Selected settings within the <i>microsystem</i> (e.g. campus and virtual learning environment; work setting, work based placements etc.)</li> </ul>	<p><b>Time</b></p> <ul style="list-style-type: none"> <li>Longitudinal focus on the interrelated impact of <i>process</i>, <i>person</i> and <i>context</i> over a course timeframe (e.g. through student questionnaires at the beginning and end of a module, focus group discussions; interviews with tutors and mentors in different settings, academic achievement at end of course, employability outcomes etc.)</li> </ul>

Table 2. Example of a PPCT research design to examine the nature of the pedagogical supports provided to students in different settings on a hypothetical part-time course

### Figure Captions

Figure 1. An overview of Bronfenbrenner's 'nested' systems of environments within the ecological system theory (adapted from Bronfenbrenner, 1979, 2005)

Figure 2. An ecological model of learning and teaching in higher education for part-time students (adapted from Bronfenbrenner, 1979, 2005)

Figure 3. A summary of the elements in the '*Process, Person, Context, Time*' model (adapted from Bronfenbrenner, 2005 and Tudge et al. 2009)

Figure 4. A summary of the relationship between elements of a 'PPCT' research design (adapted from Bronfenbrenner, 2005 and Tudge et al. 2009)

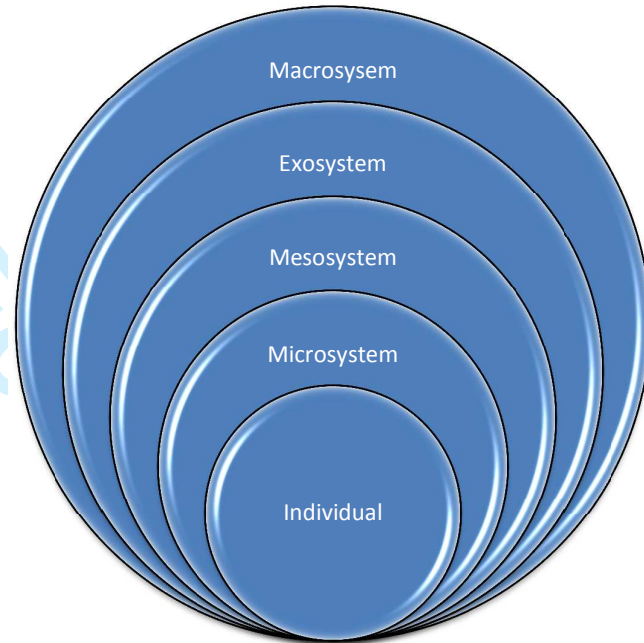
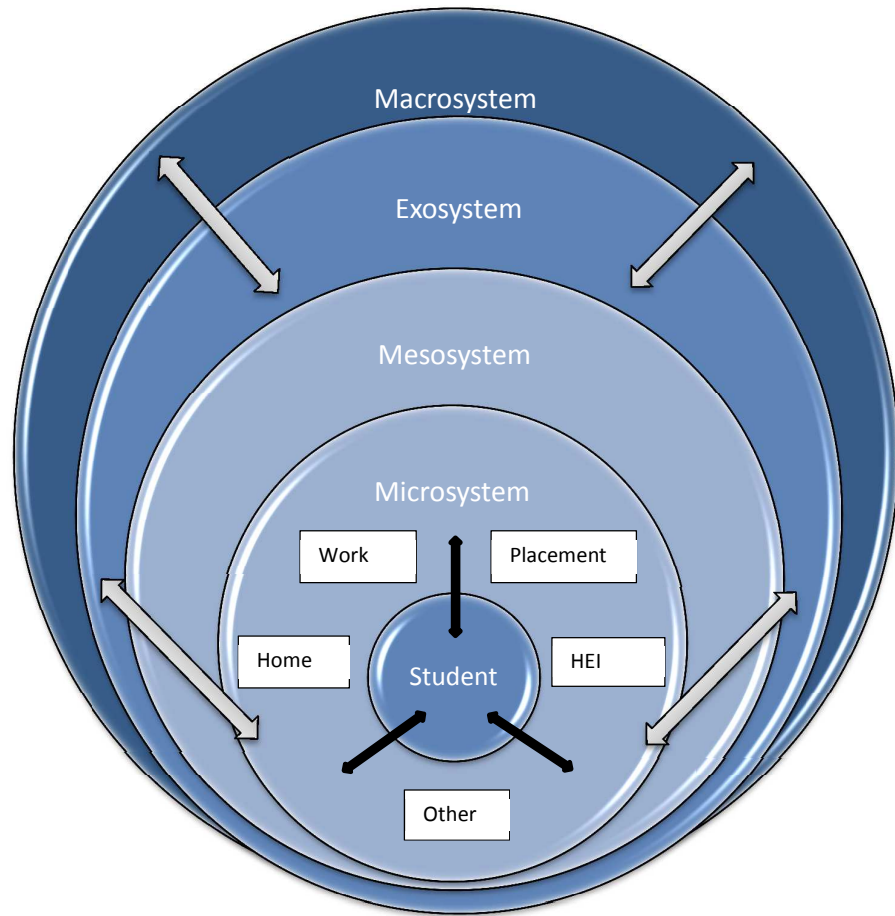


Figure 1. An overview of Bronfenbrenner's 'nested' systems of environments within the ecological system theory (adapted from Bronfenbrenner, 1979, 2005)

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Chronosystem (duration of part-time study e.g. year 1, year 2, year 3 etc.)

Figure 2. An ecological model of learning and teaching in higher education for part-time students (adapted from Bronfenbrenner, 1979, 2005)

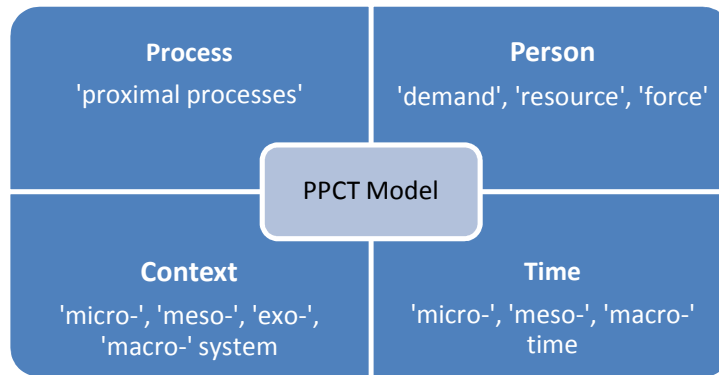


Figure 3. A summary of the elements in the '*Process, Person, Context, Time*' model (adapted from Bronfenbrenner 2005 and Tudge et al. 2009)

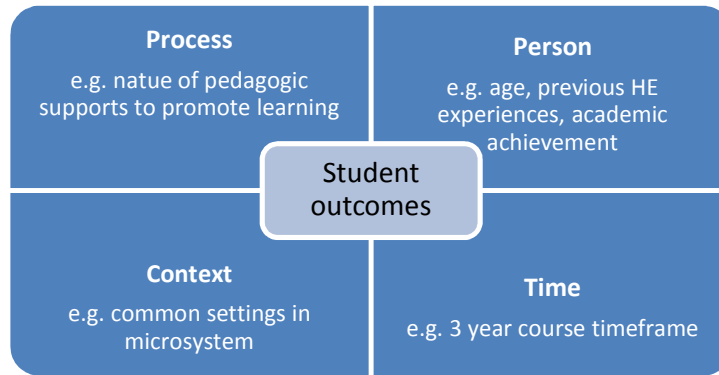


Figure 4. A summary of the relationship between elements of a hypothetical 'PPCT' research design (adapted from Bronfenbrenner, 2005 and Tudge et al. 2009)